EXPLORER II

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EXPLORER II
CODE: SWCOLCTP 511b522/523 - 050303

EXPLORER II

Warning!!!

Electronic charts displayed by the chartplotter are believed to be accurate and reliable, but they are not intended to substitute for the official charts which should remain your main reference for all the matters related to the execution of a safe navigation.

For this reason we would like to remind you that you are required to carry on board and use the officially published and approved nautical charts.

Caution

- Please read through this manual before the first operation. If you have any questions, please contact the Company customer service or your local dealer.
- The chartplotter is not built water proof. Please give attention to avoid water intrusion into the chartplotter. Water damage is not covered by the warranty.
- Extensive exposure to heat may result in damage to the chartplotter.
- Connection to the power source with reversed polarity will damage the chartplotter severely. This damage may not be covered by the warranty.
- The chartplotter contains dangerous high voltage circuits which only experienced technicians can handle.
- The C-MAP NT+ C-CARD are available from your local dealer.
- We will not be liable for errors contained herein, or for incidental or consequential damages in connection with the performance or use of this material.

Table of Content

1
Introduction

If you have not used a position-finding instrument before and intend to use your chartplotter for navigating, we suggest that you read this user manual and make sure you are familiar with its contents.

Chapter "Before You Begin" introduces you to the basic information to get you start using the chartplotter. Chapter "For the New User" should be read first to become familiar with your new instrument. Chapter "For the Experienced User" introduces the advanced features of the chartplotter.

Throughout this user manual, the labelled keys are shown in capitals letters enclosed between single inverted commas, for example 'MENU'; the software keys are shown in small capitals letters enclosed between single inverted commas, for example 'EDIT'. Menu operations are in bold characters listed by keys sequence with the menu names enclosed between inverted commas, for example **'MENU' + "ADVANCED" + 'ENTER' + "Fix & Compass" + 'ENTER'** means: press the 'MENU' key, moving the cursor selects the ADVANCED menu, press the 'ENTER' key, moving the cursor again selects the Fix and Compass menu and then press 'ENTER'. Terms and functions underlined, for example Target, are explained in the chapter 5.

1.1 FEATURES

The chartplotter is a computer specifically designed for nautical use but, more precisely, to ease and speed up all calculations, which so far have been done manually. If connected to a positioning instrument, the chartplotter displays the current position, the speed, and the heading of the boat and its track. The user information like Waypoints, Marks and tracks can then be stored on a User C-CARD, and can be recalled at any time. On the screen are shown navigation data and cartographic information obtained from electronic charts of C-MAP NT$^+$ C-CARD.

1.2   BASICS

The chartplotter is controlled by using 11 keys. 7 keys are labelled and are dedicated to specific functions. The other 4 are software keys (hereinafter named <u>soft keys</u>) and have different functions when you select different modes of operation: their labels for the current functions are shown on the screen immediately above the keys. There is also a Joystick (see Fig. 1.2) to move a cursor across the screen. As you press a key, a single audio beep confirms the key action; every time the key pressed is not valid, three rapid beeps sound indicates that no response is available.
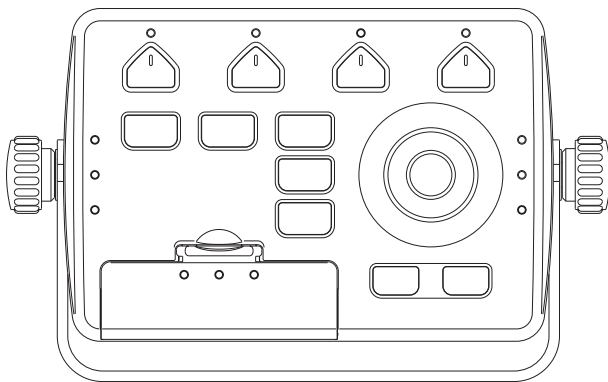
Fig. 1.2 - The controller

1.3   IF YOU NEED ASSISTANCE

If your chartplotter does not operate properly, go to the System Test on Par. 6.6. Most common operating difficulties can be diagnosed using these tests. If you still need assistance, call your local dealer, reporting the Software Release and Cartography information available in the <u>About</u> page.

➤   **Select About Page: 'MENU' + "ADVANCED" + 'ENTER' + "About..." + 'ENTER'**

Software System Information

Cartography Information

Storage capacity

```
CHARTING OPERATING SYSTEM
Copyright (C) C-MAP s.r.l.  2002
Software:      XXXX    V.X.yy   R   [GG/MM/YYYY]
NTSL           V2.40.31 R [20/09/1999]
KERNEL         V1.1.4 R [06/10/1999]
FILE SYSTEM    V1.1.1 R [30/09/1999]
BIOS           V3.1.1 R [13/09/1999]
C-FORECAST     V.1.09  R [24/04/2002]

Worldwide Cartography: V1.30
C-CARD     1: EM-B954.06 LIGURIAN, HIGH TYRR. AND
C-CARD     2: No C-CARD

User Points                 1000
Routes                      50
Track Points                5000
Tracks                      5
User Points shapes          16
Track Points on C-CARD      7710
User Points on C-CARD       3360
```

Fig. 1.3 - About Page

2
Before You Begin

This chapter provides basic information to get you start using the chartplotter; it will help you to become familiar with the chart display and the functions of the controls before you start using the chartplotter.

2.1   THE KEYBOARD

The ⌨POWER key

Press 'POWER' to turn the chartplotter On. Press and hold 'POWER' down (once the chartplotter has been turned On) for 3 seconds turns the chartplotter Off.

Press and immediately release 'POWER' to adjust the brightness of the display and the keys light.

The ⌨MOB key

Press 'MOB' to insert the MOB (Man OverBoard). Press 'MOB' when the MOB is already present deletes it.

The ⌨CLEAR key

Excluding specific situations, return to the previous menu or to leave a menu without making changes. If you are not into a menu, if the GPS computing a valid fix position and the chartplotter is not in Home mode, pressing 'CLEAR' sets Home mode. When Home (called also Navigate) mode is set, the cursor is not shown anymore and all cartographic functions (zoom, scroll, etc.) are leaded by the fix position. The fix is centered in the map display and the map scrolls underneath as the fix position changes. To deactivate Home mode move the cursor.

The ⌨ENTER key

Press 'ENTER' to select the desired option, to confirm selection, to create Objects

(Goto, Mark, Waypoint, R/B).

The [ZOOM IN] and [ZOOM OUT] keys

Press 'ZOOM IN' shows more details of a smaller area, by changing the chart scale and zooming in on your display. Press 'ZOOM OUT' to operate similarly to the 'ZOOM IN', except in reverse, changing the scale and showing a wider, otherwise less detailed view.

The [MENU] key

Press 'MENU' to select the FUNCTIONS Menu.

The ⬤ joystick

Moves the cursor about on the display screen, quickly and accurately. The cursor starts moving slowly the joystick is initially pressed then accellerates after a while if the joystick is pressed and hold.

It also scrolls the desired option in the menu page(s): up/down move the current menu selection; right executes the function assigned to the active selection in the menu (same as 'ENTER'); left quit menu (same as 'CLEAR').

If in Home (Navigate) mode, it allows to exit from Home mode.

The ⌒ soft key

The software keys (hereinafter named soft keys) can have different functions when you select different operations, for example info on cartographic objects, management of Marks and Waypoints... . Also they are used from the chart screen or from the data pages to select one of the data pages available to allow faster access to the page selection executable from the Main Menu.

When the chart page is selected, the soft key labels are not shown. By pressing one of the four soft keys their labels for the current functions are shown on the screen immediately above the soft keys. When the soft key labels are shown, pressing the associated soft key the relative function is executed. Pressing 'CLEAR' the four soft key labels disappear.

2.1.1 SOFT KEYS CUSTOMIZATION

Note that when the soft keys labels are shown the user can customize them. Pressing and holding down any of the four soft key shows a pop-up window on the top of the soft key pressed that contains all possible data pages assignable to the soft key pressed. Move the joystick up/down to place the selector on the preferred item; move the

joystick to the right or press 'ENTER' to set the selected item; move the joystick to the left or press 'CLEAR' to close the pop-up window. The possible choices are:

CHART	'CHART'	(Chart and data page, see Par. 3.1.1)
NAVIGATION	'NAV'	(Navigation Data page, see Par. 3.1.3)
3D ROAD	'ROAD'	(3D Road page, see Par. 3.1.4)
GPS STATUS	'STATUS'	(GPS Status page, see Par. 3.1.5)
GPS DATA	'GPS'	(GPS Data page, see Par. 3.1.6)
WIND DATA	'WINDDTA'	(Wind Data page, see Par. 3.1.7)
WIND SPEED	'WINDSPD'	(Wind Speed page, see Par. 3.1.8)
WIND DIRECTION	'WINDDIR'	(Wind Direction page, see Par. 3.1.9)
DEPTH	'DEPTH 1'	(Depth page, see Par. 3.1.2)
DEPTH FULL	'DEPTH 2'	(Depth Full page, see Par. 3.1.2)

The <u>default</u> settings for the soft keys labels are: 'CHART', 'NAV', 'ROAD', 'STATUS'.

Note
The following figures on this User Manual could not display the default soft keys.

2.2   TURNING THE CHART PLOTTER ON AND OFF

Before powering On the chartplotter, check for the correct voltage (10-35 volt dc) and the correct connections with the positioning instrument:
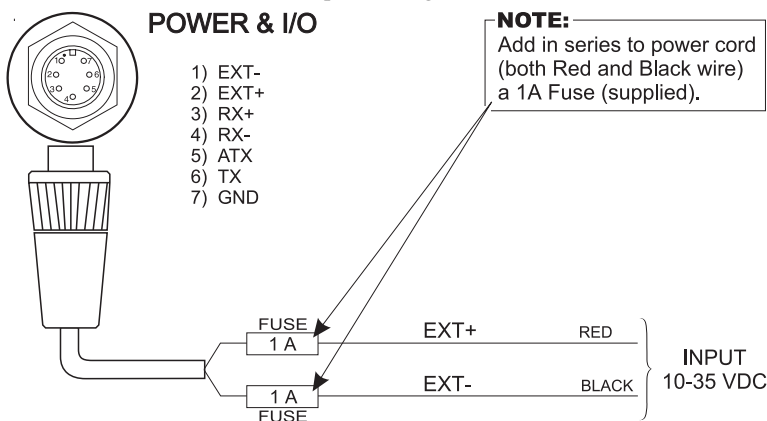
Fig. 2.2 - Power On

2.2.1 TURNING ON

Press and hold 'POWER' for 1 second. The chartplotter emits one rapid beep sound and a title page is opened:

Software name and version (*)

Worldwide Cartography
Database version

Code and description of the
C-CARD if inserted on
turning On

designed for
C-MAP NT⁺

CHARTING OPERATING SYSTEM
COPYRIGHT (C) 2002 C-MAP S.r.l.

Software: XXXX V. Y.yy
Worldwide Cartography: V1.00

**EM-B959.00 : LIGURIAN & HIGH TYRRHENIAN SEA
Cartridge 2: No C-CARD**
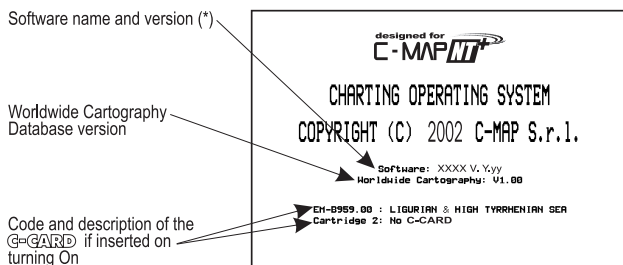
Fig. 2.2.1 - Title page

Note (*)

The software version is subject to change without notice. This manual is valid anyway.

After a few seconds, the first of the two Caution Notice pages is displayed, reminding you that the chart plotter is only an aid to navigation, and should be used with appropriate prudence. The electronic charts are not intended to substitute for the official charts. Then the cartographic screen is displayed.

2.2.2 TURNING OFF

Press 'POWER' and hold for 3 seconds: a countdown timer appears on the screen, if you release the key before the countdown timer reaches zero, the chart plotter will remain On.

2.3 CHANGING KEYPAD BACKLIGHT AND BRIGHTNESS

Press and immediately release 'POWER' (do not press and hold the key, or the "power-off" message will be displayed!). Two sliders appear on the screen, showing the current settings for keys light and brightness:
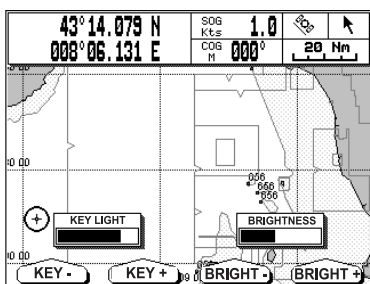
Fig. 2.3 - Keypad Backlight and Brightness control

The keypad backlight can be controlled using the soft keys 'KEY -' and 'KEY +' that adjust the keypad backlight to the required level: the keypad backlight changes as you adjust the slider. Press 'ENTER' to confirm the new setting (this operation also clears the soft key labels and the graphical display). Otherwise, you can press 'CLEAR' to exit without making any changes.

To change the screen brightness operate in the same mode, using 'BRIGHT -' and 'BRIGHT +'.

Warning!!!

The contrast adjustment depends on the type of monitor used.

2.4 SELECTING THE LANGUAGE

It is possible to select the language in which you wish information to be displayed (for screen labels, menus and options, but it is not affect the map information). The default setting is English.

➤ 'MENU' + "GENERAL" + 'ENTER' + "Language" + 'ENTER'

Choose the language you want and press 'ENTER' to confirm.

2.5 EXTERNAL CONNECTIONS

2.5.1 NMEA-0183 I/O PORT

The setting should be NMEA-0183 4800-N81-N if the external NMEA 0183 device is connected as follows:
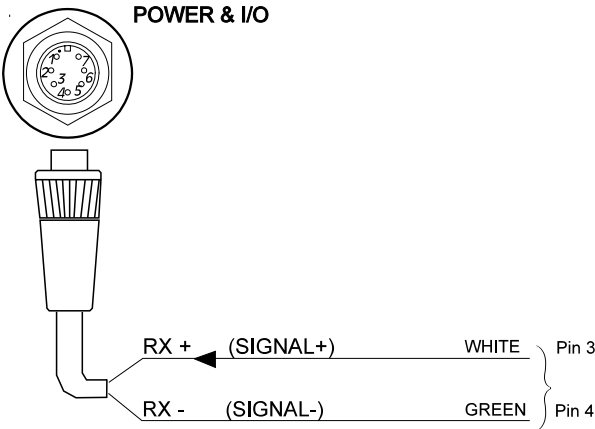
Fig. 2.5.1 - I/O PORT

➤   **'MENU' + "ADVANCED" + 'ENTER' + "Input/Output" + 'ENTER' + "NMEA0183 I/O PORT" + 'ENTER' + "4800-N81-N" + 'ENTER'**

2.5.2 NMEA-0183 GPS PORT

The setting should be NMEA-0183 4800-N81-N if the external NMEA 0183 device is connected as follows:
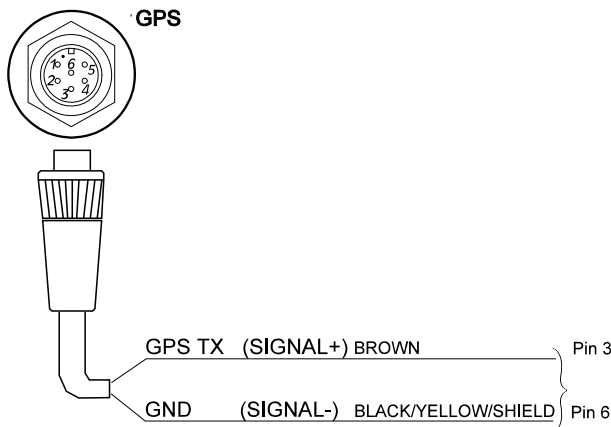
Fig. 2.5.2 - GPS PORT

➤   **'MENU' + "ADVANCED" + 'ENTER' + "Input/Output" + 'ENTER' + "NMEA0183 GPS PORT" + 'ENTER' + "4800-N81-N" + 'ENTER'**

2.6   ADDITIONAL C-CARDS

The chartplotter uses two types of C-MAP cartridges: either a chart cartridge or a data storage cartridge. A chart cartridge, called C-CARD, contains detailed charts of the area covered. A data storage cartridge, called User C-CARD can be used to permanently store your routes, Waypoints, Marks, Events and tracks (see Par. 4.6).

2.6.1 INSERTING C-CARD

Hold the C-CARD by the short inclined side so that you can see the C-MAP label (see Fig. 2.6.1):

INSERTION DIRECTION

INCLINED SIDES
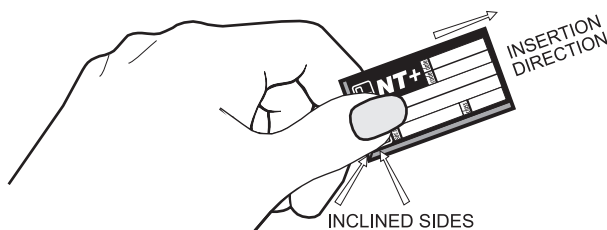
Fig. 2.6.1 - Inserting C-CARD (I)

Open the C-CARD slot's door pressing (1) to the bottom (2). Gently push the C-CARD into one of the two slots; push the C-CARD in as far as it will go (3), then move it to the bottom (4) to hold fixed into the slot (see Fig. 2.6.1a).
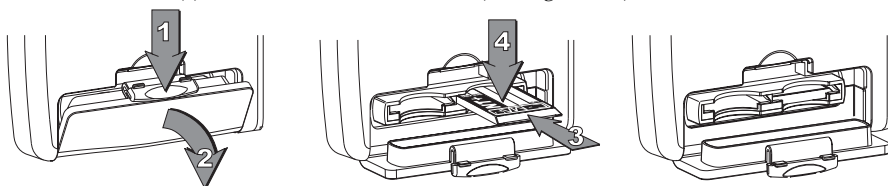
Fig. 2.6.1a - Inserting C-CARD (II)

2.6.2 REMOVING C-CARD

Open the C-CARD slot's door pressing (1) to the bottom (2). Press lightly (3) the C-CARD you wish to remove and move it to the top (4) until you hear a click: the C-CARD will eject out of the slot (5) (see Fig. 2.6.2).
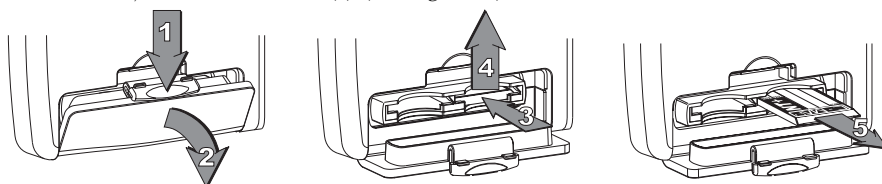
Fig. 2.6.2 - Removing C-CARD

Note

C-MAP is continuously creating new charts and revising old ones. If you wish to receive information on the newest availbale charts, you can write for the catalog of available C-MAP NT⁺ C-CARD at your dealer.

2.7   PRINT SCREEN FUNCTION

If the chartplotter is properly connected with a printer, you can print on paper the screen image (see par. 7.5 for more information).

To activate the printer function press and hold down the right hand <u>soft key</u>. To abort print screen press 'CLEAR'.

To select the desired settings:

➤   **'MENU' + "ADVANCED" + 'ENTER' + "INPUT/OUTPUT" + 'ENTER' + "Printer Output" + 'ENTER'**

3
For the New User

In order to get started using your chartplotter, you must do the following things:

1) Your chartplotter must have been installed properly according to the installation instruction on Par. 6.2.

2) You must have performed the proper settings for use with your positioning instrument (see Par. 2.5) and inserting the C-CARD for navigating in area you wish (see Par. 2.6).

3) You must have Power On to the chartplotter and adjust the brightness and contrast of the display (see Par. 2.2 and 2.3).

Once this is done, you can use your chartplotter for navigation.

3.1   SCREEN DISPLAY CONFIGURATION

The screen display can be shown in different modes: Chart Display page, Depth Graph page, Depth Graph Full page, Navigation Data page, 3D Road page, GPS Data page, GPS Status page, Wind Data page, Wind Speed page, Wind Direction page. See the following paragraphs.

3.1.1 CHART DISPLAY

It is very important to access the information you need as you need it and understand what is displayed on the screen.

➤   'MENU' + "PAGE" + 'ENTER' + "CHART DISPLAY" + 'ENTER'

or

➤   press any soft keys + 'CHART' (if it is present)

Shows the chart display and Text Area (if selected). With the following procedure:

➤   'MENU' + "DISPLAY" + 'ENTER' + "Data Window Mode" + 'ENTER'

it is possible to customize the Text Area layout among Full Screen, Text Area with 5 boxes and Text Area with 8 boxes.

No Data Window

Data Window with 5 boxes

Data Window with 8 boxes
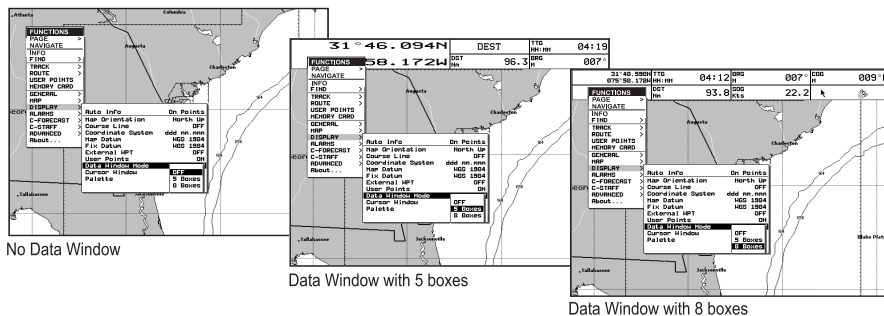
Fig. 3.1.1 - Text Area layout

It is also possible to edit fields shown in every screen configuration. Edit mode is activated directly from the chart display pressing 'MENU' for 3 seconds.

Once the Edit mode is active, the first box with the label turns in reverse video screen. The user can choose the active box by moving the joystick left or right. Pressing 'ENTER' the user can choose the data to be shown on the selected field by moving through the selections and pressing 'ENTER' again.

Fix Coordinates
Time To Go (Fix to Destination)*
Bearing (Fix to Destination)*
Course Over Ground
Chart Scale
Velocity Mode Good*
Compass Heading
Date
Direction of the water surface
Destination ID*
Distance To Go (Fix to Destination)*
Speed Over Ground
Horizontal velocity of the water surface
Time
Water Temperature
1st icon: Charting or Navigation
2nd icon: Fix Status
this icon is shown if fix is received
this icon is shown if fix is not received
this icon is shown if fix a Differential GPS signal is received
this icon is shown if WAAS correction is received
Cross Track Error*
Depth from Transducer

Fig. 3.1.1a - Edit mode

Note

It will be shown only if the Destination is present.

Once 'ENTER' is pressed the data type is set. The selection window is closed and the Text Area changes according to the selected data type. Press 'CLEAR' to exit the Edit mode.

3.1.2 DEPTH GRAPH PAGES

The Depth graph can be shown in two different modes. To select the Depth Graph in split mode:

➤ **'MENU' + "PAGE" + 'ENTER' +"DEPTH GRAPH" + 'ENTER'**

or

➤ press any soft keys + 'DEPTH 1' (if it is present)
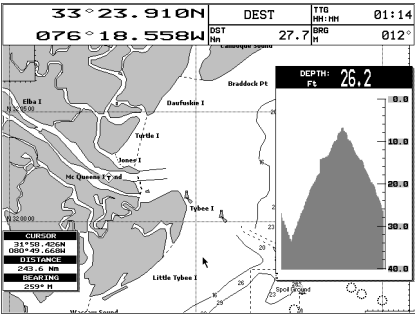
Fig. 3.1.2 - The Depth Graph in split mode

Otherwise selecting the Depth graph displayed at full screen:

➤ **'MENU' + "PAGE" + 'ENTER' +"DEPTH GRAPH FULL" + 'ENTER'**

or

➤ press any soft keys + 'DEPTH 2' (if it is present)
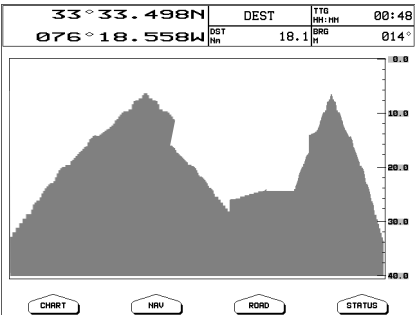
Fig. 3.1.2a - The Depth Graph Full

3.1.3 NAVIGATION DATA PAGE

The Navigation Data page shows information about the most relevant naviga-

tion information, the status of the received signal and ship's coordinate. It is possible to customize the information contained in the page selecting the Nav Display menu (see Par. 3.1.3.1).

➤   'MENU' + "PAGE" + 'ENTER' + "NAVIGATION DATA" + 'ENTER'

or

➤   press any soft keys + 'Nᴀᴠ' (if it is present)
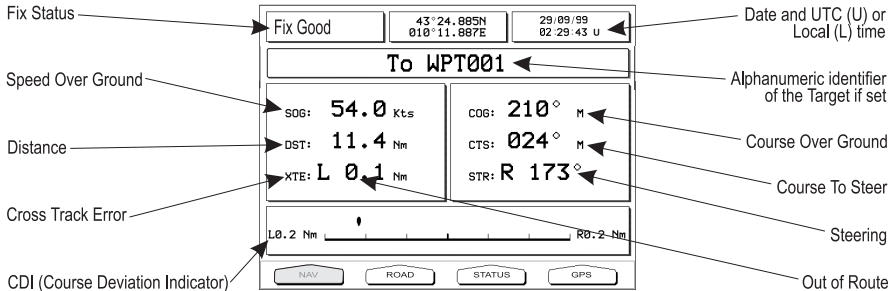
Fig. 3.1.3 - Navigation Data page

3.1.3.1 Nav Display Menu

      The Nav Display menu allows to select CDI Scale and Navigation Page. It is possible to display this menu only if the Navigation Data page or the 3D Road page has been selected; so firstly select one of this pages (see Par. 3.1.3 or Par. 3.1.4) and then:

➤   'MENU' + "NAV DISPLAY" + 'ENTER'

CDI Scale

➤   'MENU' + "NAV DISPLAY" + 'ENTER' + "CDI Scale" + 'ENTER'

Select your preferred CDI (Course Deviation Indicator) Scale among 0.2, 0.5, 1.0, 2.0, 4.0, 10.0 Nm by using the joystick and then press 'ENTER'. The default setting is 10.0 Nm.

Navigation Page

➤   'MENU' + "NAV DISPLAY" + 'ENTER' + "Navigation Page" + 'ENTER'

A new window appears with six items. Using the joystick select the item you want to change and press 'ENTER': another window appears, use the joystick to select the preferred data to display in the Navigation Data page and in 3D Road page among BRG (Bearing), SOG (Speed Over Ground), COG (Course Over Ground), STR (Steering), CTS (Course To Steer), TRN (Turning), DTG (Distance To Go), VMG (Velocity May Good), SOA (Speed Of Advance), XTE (Cross Track Error), DRF (Drift), SET, DPT (Depth), TEMP (Water Temperature). When fished press 'ENTER'. The default setting is SOG, COG, DTG, CTS, XTE, STR.

3.1.4 3D ROAD PAGE

The 3D Road Data Page shows in graphic mode navigation data. It is possible to customize the information contained in the page selecting the Nav Display menu (see Par. 3.1.3.1).

➤ **'MENU' + "PAGE" + 'ENTER' + "3D ROAD" + 'ENTER'**

or

➤ **press any soft keys + 'ROAD' (if it is present)**

Speed Over Ground

Distance

Cross Track Error

CDI
(Course Deviation Indicator)

Course Over Ground

Course To Steer

Steering

Alphanumeric identifier
of the Target if set

CDI
(Course Deviation Indicator)
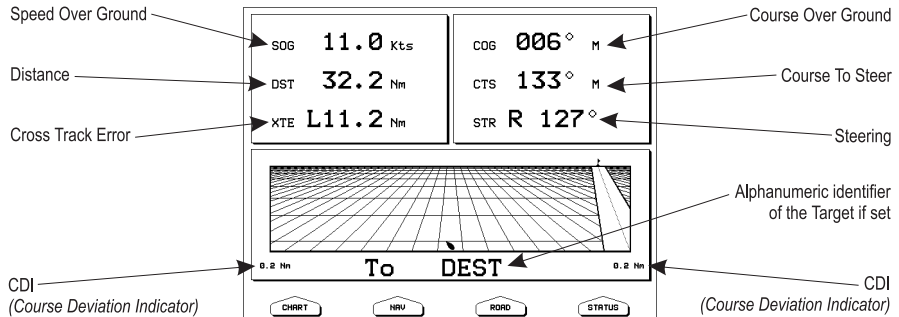
Fig. 3.1.4 - 3D Road Data Page

3.1.5 GPS STATUS PAGE

The GPS Status page shows in graphic mode GPS data.

➤ **'MENU' + "PAGE" + 'ENTER' + "GPS STATUS" + 'ENTER'**

or

➤ **press any soft keys + 'STATUS' (if it is present)**

Fix Status

Used Satellite

Bars to indicate S/N Ratio

Speed Over Ground

Course Over Ground

Altitude

Horizontal dilution of precision

Fix coordinates

Date and
UTC (U) or Local (L) time

Course Over Ground

Tracked, but not used,
Satellite

A = 0° azimuth
B = 120° azimuth

E = 0° elevation
C = 45° elevation
D = 90° elevation

Vertical dilution of precision
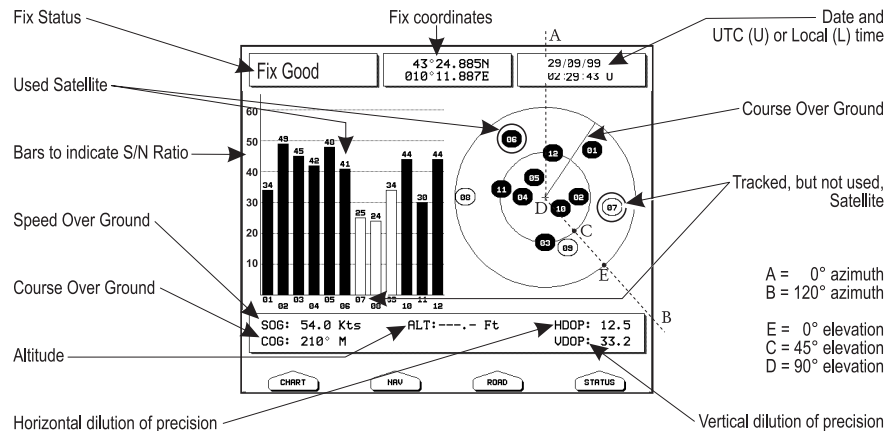
Fig. 3.1.5 - GPS Status Page

On the right side of the screen (see Fig. 3.1.5) there is a polar representation of the Azimuth and Elevation of each satellites. The circles contain a number indicating the PRN of the satellite and they are filled when they are used for the fix solution. On the left side there are histograms indicating the S/N ratio (SNR). The bar is filled when the satellite is used for fix solution. As example, the satellite with PRN=10 is used for fix solution with S/N=44, Azimuth=119degree and Elevation=70 degree. When a valid fix is received, the Lat/Lon, Date, Time, HDOP, VDOP, ALT, COG, SOG are shown in the page.

3.1.6 GPS DATA PAGE

The GPS Data page shows the GPS data.
➤   'MENU' + "PAGE" + 'ENTER' + "GPS DATA" + 'ENTER'
or
➤   press any soft keys + 'GPS' (if it is present)

Speed Over Groun

43°29.823 N
009°02.901 E

SOG
Kts   1.0   COG   000°
                    M

Fix Good
WGS 1984

29/09/99
02:29:43 U

CHART   NAV   ROAD   STATUS

Fix Coordinates

Course Over Ground

Date and
UTC (U) or Local (L) Time

Fix Status
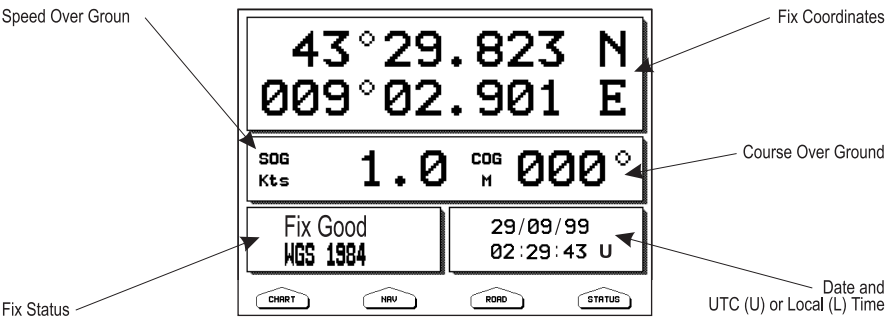
Fig. 3.1.6 - GPS Data Page

3.1.7 WIND DATA PAGE

The Wind Data Page shows data related to the wind.
➤   'MENU' + "PAGE" + 'ENTER' + "WIND DATA" + 'ENTER'
or
➤   press any soft keys + 'WINDDTA' (if it is present)

Ship's Speed

SPEED   28.0 Kts   HEAD: 006° M

TWS: 10.0 Kts   TWA: 269° M

AWS: 10.0 Kts   AWA: 288° M

WINDATA   DIRECTION   SPEED

Heading

True Wind Angle

Apparent Wind Angle

True Wind Speed

Apparent Wind Speed
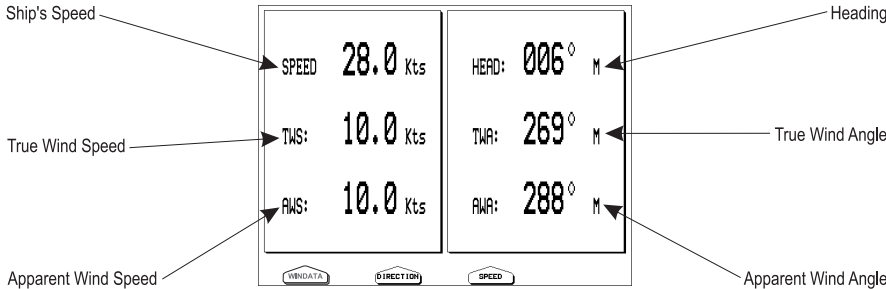
Fig. 3.1.7 - Wind Data Page

3.1.8 WIND SPEED PAGE

The Wind Speed page shows the True Wind Speed & Time Graph.

➤ **'MENU' + "PAGE" + 'ENTER' + "WIND SPEED" + 'ENTER'**

or

➤ **press any soft keys + 'WINDSPD' (if it is present)**

True or Apparent* Wind ——— TRUE WIND SPEED & TIME GRAPH ——— Cursor

Time Scale referred to the cursor ——— Time: 00:52

True or Apparent* Wind Speed ——— True Speed: 5,1 m/s

True or Apparent* Wind Angle ——— True Angle: 276,0°

Heading ——— Heading: 006°

Ship's Speed ——— Speed: 10,7 Kts

ENT for App. Wind

HINDATA   DIRECTION   SPEED   1 hour ——— Switches Time Scale between 1 hour or 12 hours
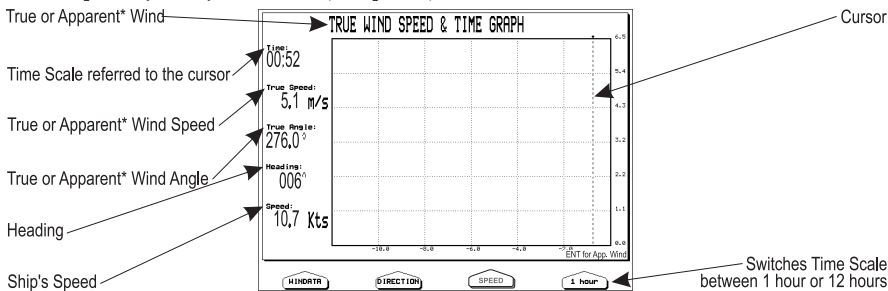
Fig. 3.1.8 - Wind Speed Page

3.1.9 WIND DIRECTION PAGE

The Wind Direction page shows the True Wind Direction & Time Graph.

➤ **'MENU' + "PAGE" + 'ENTER' + "WIND DIRECTION" + 'ENTER'**

or

➤ **press any soft keys + 'WINDDIR' (if it is present)**

True or Apparent* Wind ——— TRUE WIND DIRECTION & TIME GRAPH ——— Cursor

Time Scale referred to the cursor ——— Time: 00:52

True or Apparent* Wind Speed ——— True Speed: 5,1 m/s

True or Apparent* Wind Angle ——— True Angle: 276,0°

Heading ——— Heading: 276,0°

Ship's Speed ——— Speed: 10,7 Kts

ENT for App. Wind

HINDATA   DIRECTION   SPEED   1 hour ——— Switches Time Scale between 1 hour or 12 hours
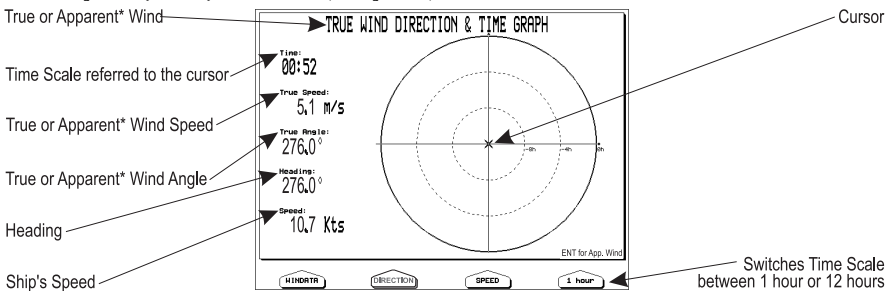
Fig. 3.1.9 - Wind Direction Page

3.2 NAVIGATING TO A SINGLE DESTINATION

3.2.1 DISTANCE AND BEARING TO TARGET

Once you have positioned the cursor on your desired location press 'ENTER', select "GOTO" and then press 'ENTER'.
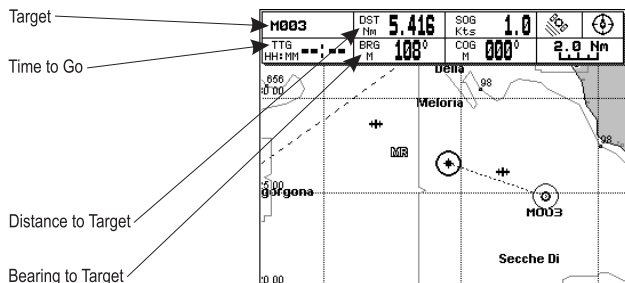
Fig. 3.2.1 - Navigation to a single destination

On the screen is shown a dotted line connecting the <u>Target</u> with the ship's position. When the <u>Target</u> is placed, all navigation data are referred to this <u>Target</u>.

3.2.2 TIME TO GO

When the <u>Target</u> is set the TTG value is displayed in the Text Area (see Fig. 3.2.1). Otherwise select the <u>Graphic Data Page</u> where you can read <u>TTG</u> value:

➤ Select Graphic Data Page: 'MENU' + "PAGE" + 'ENTER' + "NAVIGATION DATA" + 'ENTER' + 'ROAD'

3.2.3 DELETING TARGET

Place cursor on <u>Target</u> icon then press 'STOP'. A window appears to confirm the stop of the navigation: press 'CONFIRM' and the symbol identifies <u>Target</u> disappears from the screen.

3.3 NAVIGATION ON A ROUTE

Sometimes it is preferable to define a series of locations, called <u>Waypoint</u>s, in a sequence called a <u>route</u> and navigate following a <u>route</u> towards its end point.

3.3.1 ADDING WAYPOINT

To create a <u>Waypoint</u> place the cursor on position you want, press 'ENTER', select "WAYPOINT", press 'ENTER' again. The <u>Waypoint</u> appears on the screen and this becomes the first point on your first <u>route</u>. An info window containing <u>route</u> number, data and time, <u>Waypoint</u> name, symbol and <u>Latitude</u>/<u>Longitude</u> is shown.

3.3.2 CREATING A ROUTE

Repeat the "Adding Waypoint" procedure described in the previous Par. 3.3.1. The sequence of moving the cursor and pressing 'ENTER' is continued to create the route, until you have reached the last Waypoint, your final destination. Segments connecting the Waypoints are shown, and the starting point is identified by a circle surrounding the first Waypoint of the route:
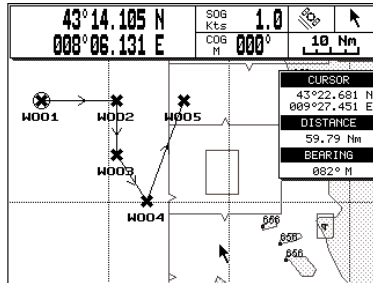
Fig. 3.3.2 - Route planning

3.3.3 DELETING WAYPOINT

Place the cursor on the Waypoint to be deleted:
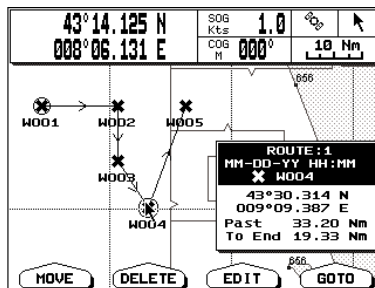
Fig. 3.3.3 - Deleting Waypoint (I)

Press 'DELETE'. A window is opened to advise that Waypoint is being used in a route, "are you sure you want to delete it?": press 'CONFIRM' ('CANCEL' otherwise). The Waypoint is deleted and a new line between previous and next Waypoint is shown. The deleted Waypoint remains shaded until the screen is redrawn.
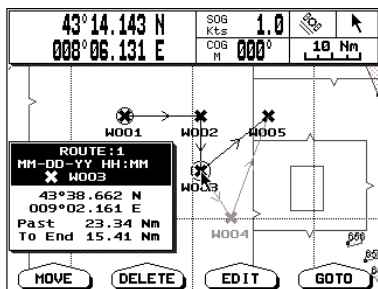
Fig. 3.3.3a - Deleting Waypoint (II)

3.3.4 DISTANCE AND BEARING TO TARGET

Once you have positioned the cursor on the desired starting <u>Waypoint</u> (it could be the first <u>Waypoint</u> of the <u>route</u> or another one) press 'GOTO' (or press 'ENTER', select "GOTO" and then press 'ENTER'). A circle surrounds the <u>Waypoint</u> symbol. A dotted line is shown, connecting the <u>Target</u> with the ship's position. When the <u>Target</u> is placed, all navigation data are referred to this <u>Target</u>.
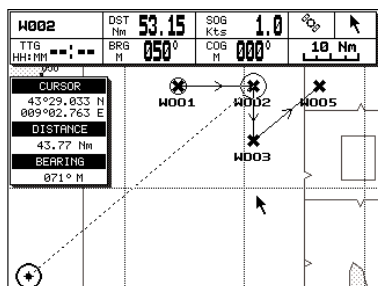
Fig. 3.3.4 - Selecting destination (Target)

The destination will automatically switch to the next <u>Waypoint</u> on the <u>route</u> when you reach or pass the present destination.

3.3.5 TIME TO GO

When the <u>Target</u> is set the TTG value is displayed in the Text Area. Otherwise select the <u>Graphic Data Page</u> where you can read <u>TTG</u> value:

➤ Select Graphic Data Page: 'MENU' + "PAGE" + 'ENTER' + "NAVIGATION DATA" + 'ENTER' + 'ROAD'

3.3.6 DELETING TARGET

Place cursor on <u>Target</u> icon then press 'STOP'. A window appears to confirm the

stop of the navigation: press 'CONFIRM'. The symbol that identifies <u>Target</u> disappears from the screen and the <u>Waypoint</u> remains.

3.4   C-MAP NT⁺ INFORMATION

As part of C-MAP's continuous Electronic Vector Chart product development and improvement program, **C-MAP NT+**, a natural evolution of our Electronic Chart technology, has been released.

The key points of NT+ can be divided into five main categories:
1. Coverage/Price
2. Chart/Display Presentation
3. New Features/Functions
4. Accessories
5. Compatibility

Looking at the chart displayed on the screen, you will see a variety of objects and symbols. Refer to the Cartography Reference Guide for their explanation.

The display can be customized for your personal preferences and needs (see the following paragraphes).

3.4.1 DISPLAY MODE
➤   'MENU' + "MAP" + 'ENTER' + "Display Mode" + 'ENTER'

To simplify the customization of the chart display, the map settings are now re-organized in modes allowing the user to choose the preferred setting. Pre-programmed settings are user selectable from Full, Simple, Fishing, Low and Custom. The <u>default</u> setting is Custom. The custom selection allows the user to customize the chart to users preferences. The chart below shows the selections for each mode:

Setting	Full	Simple	Fishing	Low	Custom (Default values)
Names	On	On	On	Off	On
Nav-Aids	INT	INT	INT	INT	INT
Light Sectors	On	Off	Off	Off	On
Attention Areas	On	On	On	Off	On
Tides & Currents	On	On	Off	Off	On
Seabed Type	On	Off	On	Off	On
Ports & Services	On	On	Off	Off	On
Tracks & Routes	On	Off	Off	Off	On
Underwater Objects	On	Off	Off	Off	On

Depth Areas	On	On	On	Off	On
Depth Areas >	0005	0005	0005	0005	00002 Mt
Depth Areas <	0030	0030	0030	0030	00009 Mt
Depth Lines & Soundings	On	On	On	Off	On
Depth Lines & Soundings >	0000	0000	0000	0000	00000 Mt
Depth Lines & Soundings <	9999	0005	9999	0005	00305 Mt
Rivers & Lakes	On	On	Off	Off	On
Natural Features	On	Off	Off	Off	On
Cultural Features	On	Off	Off	Off	On
Landmarks	On	On	Off	Off	On
Lat/Lon Grid	On	Off	On	Off	On
Chart Boundaries	On	Auto	Off	Off	On
Cartography	On	On	Off	On	On
Mixing Levels	On	Off	On	Off	On
Declutter	Off	On	Off	On	Off

3.4.2 CUSTOMIZE MAP

➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER'**

This function allows the user to customize the following selections and is divided into the following setting menus: <u>Marine Settings</u>, <u>Depth Settings</u>, <u>Land Settings</u> and <u>Chart Settings</u>. If any of the settings are changed while in the <u>Customize Map</u> mode, when exiting the chartplotter will show a prompt "Do you want to change Display Mode to Custom?". Press 'CONFIRM' to accept.

Note _____

The Warning window appears only if Display Mode is not Custom.

3.4.2.1 Marine Settings

The <u>Marine Settings</u> menu controls the display on the map of the marine features.

<u>**Names**</u>: On/Off. The <u>default</u> setting is On.

➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Names" + 'ENTER'**

<u>**Nav-Aids**</u>: US/US Simple/INT/INT Simple/Off. The <u>default</u> setting is US. When selected it affects Lights, Signals, <u>Buoys</u> & <u>Beacons</u> display.

- **INT(ernational)**: Draws Nav-Aids using international symbology. All components of Complex Objects are shown.

- **INT(ernational) Simplified**: Shows Complex Object with one icon only. Non-complex Nav-Aids are shown using international symbology.

- **US**: Draw Nav-Aids using NOAA symbology. All components of Complex Objects are shown.

- **US Simplified**: Shows Complex Object with one icon only. Non-complex Nav-Aids are shown using NOAA symbology.

- **Off**: Lights, Signals, Buoys & Beacons are no longer displayed on the charts.
➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Nav-Aids" + 'ENTER'**

Light Sectors: On/Off. The default setting is On. Light Sectors are not displayed when Nav-Aids option is set to Simplified or Off (the display of Light Sectors is decided by the cartographic Library).
➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Light Sectors" + 'ENTER'**

Attention Areas: On/Off. The default setting is On. The Attention Areas will always be contour only when On.
➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Attention Areas" + 'ENTER'**

Tides & Currents: On/Off. The default setting is On.
➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Tides & Currents" + 'ENTER'**

Seabed Type: On/Off. The default setting is On.
➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Seabed Type" + 'ENTER'**

Ports & Services: On/Off. The default setting is On.
➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Ports & Services" + 'ENTER'**

Tracks & Routes: On/Off. The default setting is On.
➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Tracks & Routes" + 'ENTER'**

3.4.2.2 Depth Settings
The Depth Settings menu controls the display on the map of the depth informations.

Depth Areas: On/Off. The default setting is On.
➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Areas" + 'ENTER'**

Depth Areas >: Sets a min reference depth value. The default setting is 5 Ft.
➤ **'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Areas >" + 'ENTER'**

Depth Areas <: Sets a max reference depth value. The default setting is 30 Ft.

➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Areas <" + 'ENTER'

<u>**Depth Lines & Sndgs**</u>: On/Off. The <u>default</u> setting is On.
➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Lines & Sndgs" + 'ENTER'

<u>**Depth Lines & Sndgs >**</u>: Sets a min reference depth & soundings value. The <u>default</u> setting is 0 Ft.
➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Lines & Sndgs >" + 'ENTER'

<u>**Depth Lines & Sndgs <**</u>: Sets a max reference depth & soundings value. The <u>default</u> setting is 09999 Ft.
➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Lines & Sndgs <" + 'ENTER'

3.4.2.3 Land Settings

The <u>Land Settings</u> menu controls the display on the map of the terrestrial features.

<u>**Rivers & Lakes**</u>: On/Off. The <u>default</u> setting is On.
➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "LAND SETTINGS" + 'ENTER' + "Rivers & Lakes" + 'ENTER'

<u>**Natural Features**</u>: On/Off. The <u>default</u> setting is On.
➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "LAND SETTINGS" + 'ENTER' + "Natural Features" + 'ENTER'

<u>**Cultural Features**</u>: On/Off. The <u>default</u> setting is On.
➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "LAND SETTINGS" + 'ENTER' + "Cultural Features" + 'ENTER'

<u>**Landmarks**</u>: On/Off. The <u>default</u> setting is On.
➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "LAND SETTINGS" + 'ENTER' + "Landmarks" + 'ENTER'

3.4.2.4 Chart Settings

The <u>Chart Settings</u> menu controls the display on the map of the chart features.

<u>**Lat/Lon Grid**</u>: On/Off. The <u>default</u> setting is On.
➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Lat/Lon Grid" + 'ENTER'

Chart Boundaries: On/Off/Auto. The <u>default</u> setting is On.

➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Chart Boundaries" + 'ENTER'

Cartography: On/Off. The <u>default</u> setting is On. Used to <u>zoom-in</u> and pan everywhere regardless the existence of data. While in "virtual cartography" (Cartography Off) by setting Cartography On from menu, the chartplotter displays the previous scale level with charts. Again while in Cartography On, the chartplotter will work in the same way also when you exit from the charts coverage, panning with the cursor or because of a ship position change. When in Cartography Off, it is also possible to have virtual cartography between two subsequent scale levels with charts.

➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Cartography" + 'ENTER'

Mixing Levels: On/Off. The <u>default</u> setting is Off. When the map coverage at the current zoom level does not fill the entire screen, the chartplotter draws the rest of the map expanding the cartographic information read from, at most, two zoom levels above the current zoom level. For this reason the map is drawn three times: firstly it draws the two levels before the current level and then the current level. The area covered by the cartographic data read from the previous levels is identified by a dotted pattern. When the cursor is moved on an area not covered by data of the current level and the Cartography item is switched Off, the chartplotter zooms out to the first level covered by cartographic data. When the Cartography item is switched On, the cursor can be moved on the areas obtained from the previous levels but no information is provided on the objects found on that area since it is considered not suitable for navigation at that scale level.

➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Mixing Levels" + 'ENTER'

Note

The Mixing Levels function works only with the new NT$^+$ C-CARDs. It also affects the speed of the redraw of the screen. If this function is not used it maybe disabled.

Declutter: On/Off. The <u>default</u> setting is Off. When it is On removes overlapping text (e.g. Names, Spot Soundings etc.).

➤ 'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Declutter" + 'ENTER'

3.4.3 GETTING AUTOMATIC INFO

The type of Automatic Info is user selectable.

➤ 'MENU' + "DISPLAY" + 'ENTER' + "Auto Info" + 'ENTER'

The possible settings are:

- **Off**: disabled, no automatic info shown at all.
- **On Points**: only on points. This is the <u>default</u> setting.
- **On All**: on all objects (points, lines and areas).

The Automatic Info On Points shows information when the cursor is placed on points (as Port Services, <u>Tides</u>, lights, wrecks, rocks, <u>buoys</u>, <u>beacons</u>, obstructions, land markers, etc.). The Automatic Info On All shows information when the cursor is placed on points, on lines (as <u>Depth contours</u>, Traffic Separation, Territorial Sea, Cartographic Lines etc.) on areas (Depth, Built-up, Sea, Attention, Restricted etc.) and on names (on the beginning of the text -hot spot- or on any of the characters of the name -name message box-).

The details on Land, Source of Data, Cartographic Area and Spot Soundings are not shown.
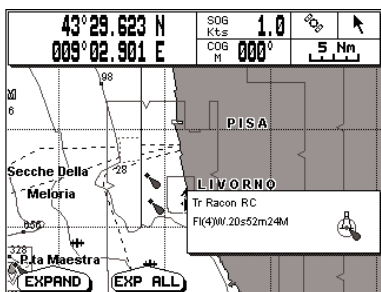
Fig. 3.4.3 - Automatic Info on Points window

If you press 'EXPAND' you get the information about that object.

Otherwise if you press 'EXP ALL' all available information about the cartographic point under the cursor will be shown (see Par. 3.4.4).

3.4.4 INFO TREE AND EXPANDED INFO PAGE

This page combines the Info Tree and the Expanded Info pages; this gives the advantage of showing the details of the object selected on the Info Tree while the cursor is moving through the Info Tree's items.

The upper side of the page contains the Info Tree and the Lower side contains the expanded information. While moving the cursor through the Info Tree, all the relevant information of the selected object is shown on the lower part of the page.

When the selected object is a Tide Height, pressing 'ENTER' the Tide page is shown.

Pressing 'CLEAR' the page is closed.

If the information shown exceeds the page size, the user may scroll the page down pressing 'PAGE DN'. The 'HOME' restart the Expanded Info.

3.4.5 INFO FUNCTION

Place the cursor in any place you want and press:

➤ **'MENU' + "INFO" + 'ENTER'**

to show the Info Tree and Expanded Info page (see Par. 3.4.4).

3.4.6 GETTING PORT INFO

Upon viewing the chart of a port or harbour, you will see a <u>Port Info</u> icon that can be clicked on to query the available information immediately displayed with many details. The <u>Port Info</u> icon is visible only if the <u>Ports & Services</u> option is On (<u>default</u> setting).
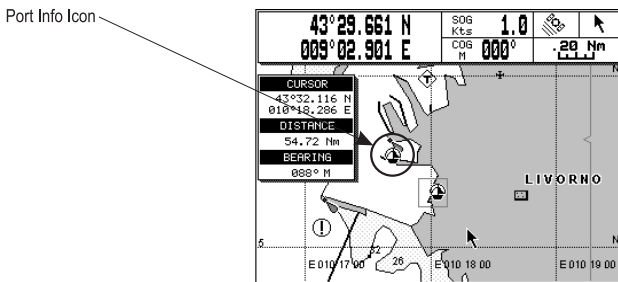
Fig. 3.4.6 - Port Info icon

The available information is shown in the Automatic Info window where icons of the available services are shown:
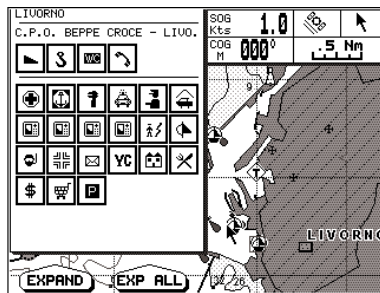
Fig. 3.4.6a - Automatic Info window

To expand information about that object press 'EXPAND' and to expand all available information for that cartographic point press 'EXP ALL'.

3.4.7 GETTING TIDE INFO

When you will see a <u>Tide Info</u> icon you can click on it to query the available

information that will immediately be displayed.
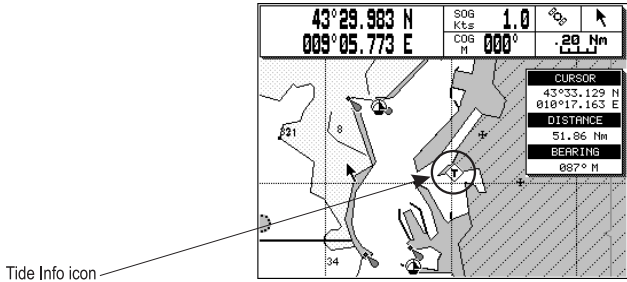
Fig. 3.4.7 - Tide Info icon

Tide Info icon

Place the cursor on the Tide symbol, a Automatic Info window is opened:
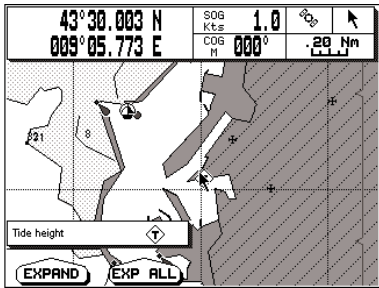
Fig. 3.4.7a - Automatic Info on Tide

To display the Tide Graph page, press 'EXPAND' (otherwise, press 'EXP ALL' to select all available information).

Values referred to the VERTICAL cursor

Values referred to the HORIZONTAL cursor

VERTICAL cursor
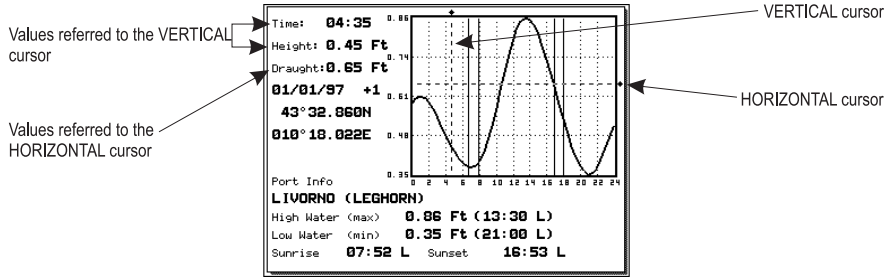
HORIZONTAL cursor

Fig. 3.4.7b - Tide Graph

It is possible to move the cursor anywhere on the graph and display the time, height (vertical cursor) and draught (horizontal cursor) on a particular graph point. Also use 'ZOOM IN' or 'ZOOM OUT' to go to previous or next day and 'ENTER' to set date (move the joystick up/down to insert the desired number and use it left/right to move cursor to left/right).

Tide graphs are an approximation of the tide and they should be used in conjunction with traditional tide tables and navigational methods.

3.4.8 FIND FUNCTION

The chartplotter allows finding <u>Port Services</u>, <u>Port</u>, <u>Tide Stations</u>, <u>Wrecks</u>, <u>Obstructions</u>, <u>Cursor</u>, <u>Coordinates</u> and <u>User Point</u>s.

3.4.8.1 Finding Port Services

To locate and display the nearest available facilities of a particular type (i.e. the nearest Hospital, sailmaker, bank, etc.).

➤   **'MENU' + "FIND" + 'ENTER' + "PORT SERVICES" + 'ENTER'**

The icons of the available services are shown. Select any facility and press 'ENTER' or 'FIND'. The list of the nearest ports (up to 10) containing the facility will be shown on the screen. Then choose the port you want and press 'ENTER' or 'FIND'.

3.4.8.2 Finding Nearest Ports

Shows the list of all (max 8 ports) placed near the cursor position.

➤   **'MENU' + "FIND" + 'ENTER' + "PORT" + 'ENTER'**

Select the port. Press 'ENTER' or 'FIND' to locate it.

Finding All Ports

To show the list of all ports stored on the C-CARD and to locate them on the map follow the procedure:

➤   **'MENU' + "FIND" + 'ENTER' + "PORT" + 'ENTER' + 'PORTS'**

Select the port and 'ZOOM IN'/'ZOOM OUT' to select next/previous page. Press 'ENTER' or 'FIND' to locate the selected port on the map.

A Warning message is shown if there is no C-CARD inserted or there are no ports on the C-CARD.

Searching by name

➤   **'MENU' + "FIND" + 'ENTER' + "PORT" + 'ENTER' + 'PORTS' + 'NAME'**

Insert port name (max 15 characters). Press 'CONFIRM' or 'ENTER' to accept; press 'CANCEL' or 'CLEAR' to cancel name entry. If inserted name is found, the list with all ports containing the inserted name is shown. Repeat the operation to refine search or move through the list. Press 'ENTER' to locate the port on the map.

A Warning message is shown when the inserted name is not in the ports list.

Searching by list

➤   **'MENU' + "FIND" + 'ENTER' + "PORT" + 'ENTER' + 'PORTS' + 'LIST'**

Rebuild and display the complete ports list. Select the port and 'ZOOM IN'/'ZOOM OUT' to select next/previous page. Press 'ENTER' or 'FIND' to locate the selected port on the map.

3.4.8.3 Finding Tide Stations

Finds the nearest <u>Tide</u> Stations (up to 10) on the map, from the boat position - if a valid fix is received - or from the cursor position - if the received fix position is not good.

➤   **'MENU' + "FIND" + 'ENTER' + "TIDE STATIONS" + 'ENTER'**

A new window will appear in few seconds. Choose the <u>Tide</u> Stations you want and press 'ENTER' or 'FIND' to display the <u>Tide</u> Graph page (see Par. 3.4.7b). Press 'CLEAR' to display the <u>Tide</u> Station chosen.

3.4.8.4 Finding Wrecks

Searches for Nearest Wrecks:

➤   **'MENU' + "FIND" + 'ENTER' + "WRECKS" + 'ENTER'**

Select the port and 'ZOOM IN'/'ZOOM OUT' to select next/previous page. Press 'ENTER' or 'FIND' to locate the selected Wreck on the map.

3.4.8.5 Finding Obstructions

Searches for Nearest Obstructions:

➤   **'MENU' + "FIND" + 'ENTER' + "OBSTRUCTIONS" + 'ENTER'**

Select the port and 'ZOOM IN'/'ZOOM OUT' to select next/previous page. Press 'ENTER' or 'FIND' to locate the selected Obstruction.

3.4.8.6 Finding Cursor

Centers the cursor on the screen:

➤   **'MENU' + "FIND" + 'ENTER' + "CURSOR" + 'ENTER'**

3.4.8.7 Finding Coordinates

Allows to enter LAT/LON to locate a cartographic point:

➤   **'MENU' + "FIND" + 'ENTER' + "COORDINATES" + 'ENTER'**

3.4.8.8 Finding User Points

Searches the User Points by name:

➤   **'MENU' + "FIND" + 'ENTER' + "USER POINTS" + 'ENTER'**

4
For the Experienced User

Now you have had a chance to became familiar with your new chartplotter, there are a great number of advanced features that you will find helpful.

4.1   MORE ABOUT CREATING AND USING ROUTES

At anytime, you may add or delete Waypoints, see a route summary, reverse the direction of the route or erase the entire route.

4.1.1 ROUTES

The following functions are used for the route management.

4.1.1.1 Selecting route menu

➤   'MENU' + "ROUTE" + 'ENTER' + "SELECT" + 'ENTER'
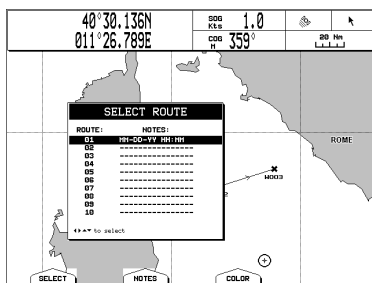
Fig. 4.1.1.1 - Select route window

Selecting route

➤   'MENU' + "ROUTE" + 'ENTER' + "SELECT" + 'ENTER' + select the route number + 'SELECT'

The route, shown by straight segments, is centered on the screen, with the cursor on the central Waypoint.

Editing notes

➤ 'MENU' + "ROUTE" + 'ENTER' + "SELECT" + 'ENTER' + 'NOTES'

Another window is shown: insert the notes (this is allowed only if you have already created a <u>route</u>). Press 'ENTER' to confirm ('CANCEL' otherwise).

Change Color

➤ 'MENU' + "ROUTE" + 'ENTER' + "SELECT" + 'ENTER' + 'COLOR'

Another window is shown: choose the color for <u>Mark</u>, <u>Waypoint</u> and <u>Event</u>. Press 'ENTER' to confirm ('CANCEL' otherwise).

4.1.1.2 Deleting route

➤ 'MENU' + "ROUTE" + 'ENTER' + "DELETE" + 'ENTER'

A window is opened: press 'CONFIRM' to delete ('CANCEL' otherwise). The <u>route</u> remains on the screen shaded until the screen is redrawn.

4.1.1.3 Finding information on a route: Route Report

➤ 'MENU' + "ROUTE" + 'ENTER' + "REPORT" + 'ENTER'
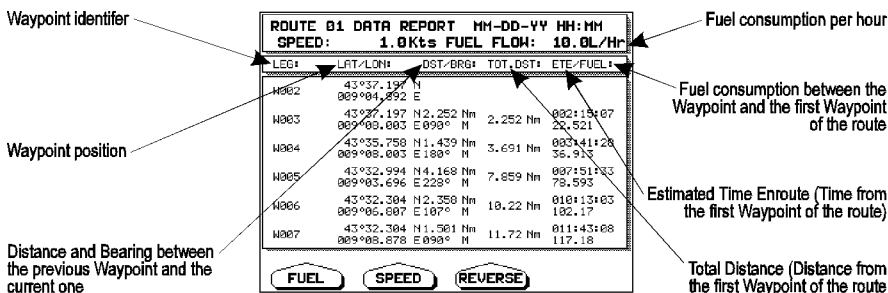
Fig. 4.1.1.3 - Route Data Report page

If there are more than six <u>Waypoint</u>s shown, select another page.

Changing Speed & Fuel values

➤ ROUTE DATA REPORT page: 'MENU' + "ROUTE" + 'ENTER' + "REPORT" + 'ENTER'

It is possible to modify the Speed and Fuel consumption values, respectly by pressing 'SPEED' and 'FUEL'. Insert value and pressing 'ENTER'.

Reversing route

➤ 'MENU' + "ROUTE" + 'ENTER' + "REPORT" + 'ENTER' + 'REVERSE'

Reversing a <u>route</u> plan is most typically used to return to the point where the <u>route</u> originally started.

4.1.1.4 Selection Route Legs Color
➤   'MENU' + "ROUTE" + 'ENTER' + "COLOR" + 'ENTER'

A window with 16 different colors appears. Select the <u>route</u> legs color and press 'ACCEPT' ('CANCEL' otherwise).

4.1.2 WAYPOINTS

You may add <u>Waypoint</u>s, delete <u>Waypoint</u>s from a <u>route</u>, move any <u>Waypoint</u> in the <u>route</u> to another location, insert a <u>Waypoint</u> between two existing ones, find any <u>Waypoint</u> at anytime. Every time you place the cursor on a <u>Waypoint</u> the following functions are available.

4.1.2.1 Adding Waypoint
➤   'ENTER' + "WAYPOINT" + 'ENTER'

The <u>Waypoint</u> appears on the screen on the cursor position. An info window is shown containing <u>route</u> number, data and time, <u>Waypoint</u> name, symbol and <u>Latitude</u>/<u>Longitude</u>, information on previous and - if the Waypoint is not the last of the route - also on the next <u>Waypoint</u>. To create a route inserting additional <u>Waypoint</u>s repeat the above described sequence.

4.1.2.2 Moving Waypoint
➤   Add Waypoint ('ENTER' + "WAYPOINT" + 'ENTER') or Place cursor on existing Waypoint

Press 'MOVE'. Move the cursor: a dotted line, connecting the <u>Waypoint</u> to the new position, is shown:
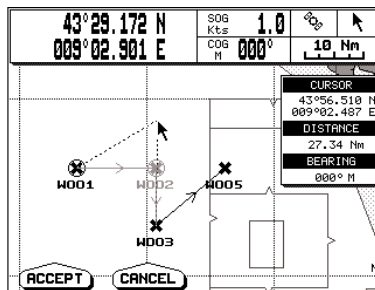
Fig. 4.1.2.2 - Moving Waypoint function (I)

To place the <u>Waypoint</u> in the new position, choose the new place and press 'ACCEPT' ('CANCEL' otherwise). The "old" Waypoint remains shaded until the screen is redrawn.
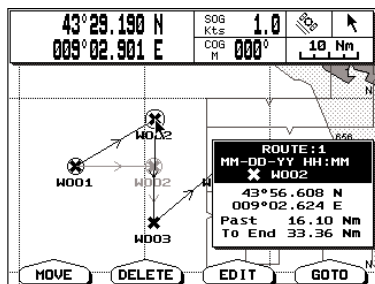
Fig. 4.1.2.2a - Moving Waypoint function (II)

4.1.2.3 Deleting Waypoint

➤ Add Waypoint ('ENTER' + "WAYPOINT" + 'ENTER') or Place cursor on existing Waypoint
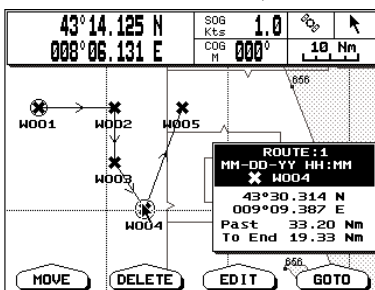
Fig. 4.1.2.3 - Deleting Waypoint (I)

Press 'DELETE'. A Warning message is shown to advise that Waypoint is currently used in a route, are you sure you want to delete it?: press 'CONFIRM' ('CANCEL' otherwise). The Waypoint is deleted and a new line between previous and next Waypoint is shown. The deleted Waypoint remains shaded until the screen is redrawn.
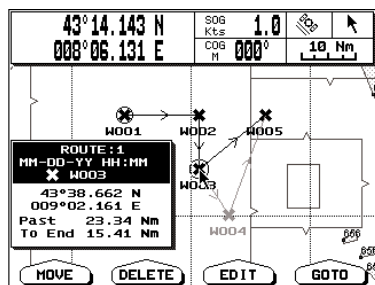
Fig. 4.1.2.3a - Deleting Waypoint (II)

4.1.2.4 Editing Waypoint

➤ Add Waypoint ('ENTER' + "WAYPOINT" + 'ENTER') or Place cursor on existing Waypoint

Press 'EDIT' to modify a Waypoint. A window will be shown with Name, Symbol, Color and Latitude/Longitude of the Waypoint, advicing about what Waypoint data are modifiable.
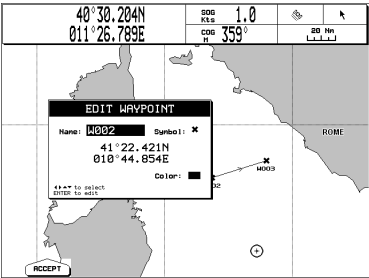
Fig. 4.1.2.4 - Edit Waypoint

Select the field. If you have selected Name field, press 'ENTER': insert the character (8 characters max), then press 'ENTER'. If Symbol field is selected press 'ENTER': a window with 16 different symbols appears:
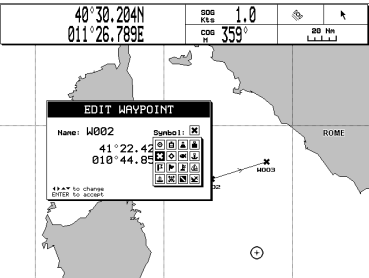
Fig. 4.1.2.4a - Waypoint symbols

Select the symbol and press 'ENTER'. If you have selected Color field, press 'ENTER': a window with 16 different colors appears. Select the color and press 'ENTER'. If select Coordinates field, press 'ENTER' and then insert the value. Then press 'ACCEPT'.

4.1.2.5 Goto

➤ Add Waypoint ('ENTER' + "WAYPOINT" + 'ENTER') or Place cursor on existing Waypoint

Press 'GOTO': a circle encloses the Waypoint symbol. On the screen a straight line is shown, connecting the Target with the ship's position. When the Target is placed, all navigation data are referred to this Target.

4.1.2.6 Inserting Waypoint

Every time you place the cursor on the segment connecting two existing Waypoints of a route the following function is available.

➤ Place cursor on route leg
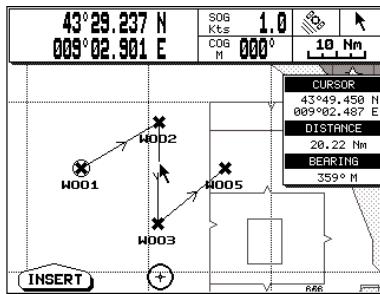
Fig. 4.1.2.6 - Placing Waypoint between two existing ones (I)

Press 'INSERT'. The line between the two <u>Waypoints</u> is turned into a dotted line: move the cursor to the new position. When the cursor is stationary for one second or two, the line will "rubber-band", drawing a dotted line between the last <u>Waypoint</u> and the cursor, and another dotted line between the cursor and the next <u>Waypoint</u>:
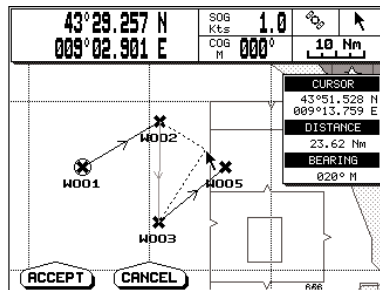
Fig. 4.1.2.6a - Placing Waypoint between two existing ones (II)

Once you have positioned the cursor at new location, press 'ACCEPT':
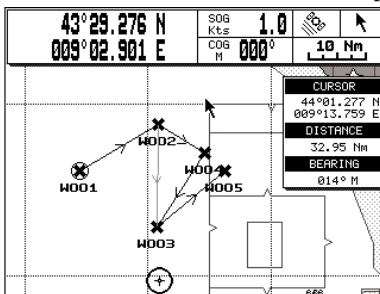
Fig. 4.1.2.6b - Placing Waypoint between two existing ones (III)

4.1.2.7 Finding Waypoint
➤ 'MENU' + "FIND" + 'ENTER' + "USER POINTS" + 'ENTER'

A window is opened to find a stored <u>Waypoint</u> by entering its label:
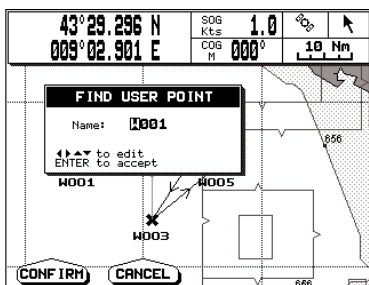
Fig. 4.1.2.7 - Finding Waypoint function (I)

Insert the name and press 'CONFIRM' ('CANCEL' otherwise). For example, if the inserted name is W001, the cursor is placed on this <u>Waypoint</u>, and the info window is shown:
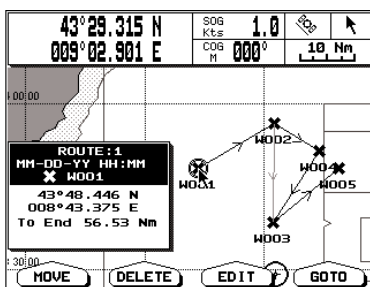
Fig. 4.1.2.7a - Finding Waypoint function (II)

4.1.2.8 Finding information about Waypoints: User Points List page
➤ 'MENU' + "USER POINTS" + 'ENTER'

A full window is opened showing information about all stored <u>User Points</u>. Select the <u>User Point</u> you wish. If the page contains more than 8 <u>User Points</u>, the list continues in the next pages.
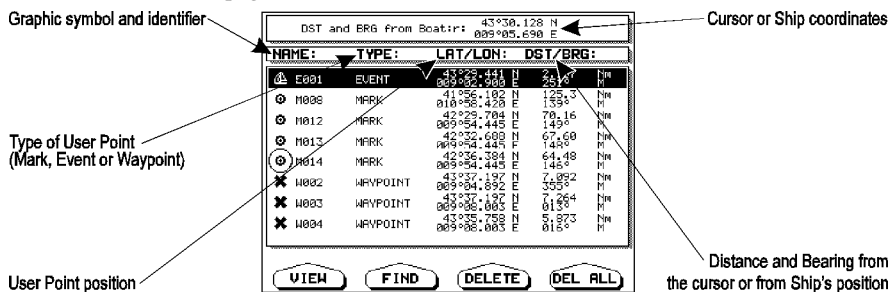
Fig. 4.1.2.8 - User Points page

Viewing User Points in map display
➤   'MENU' + "USER POINTS" + 'ENTER'

Press 'VIEW'. The chartplotter exits from the <u>User Point</u>s List page and redraws the chart. The selected point appears, with the cursor placed on it. Press 'CLEAR' to exit and return to <u>User Points</u> List page.

Finding User Points in the User Point List
➤   'MENU' + "USER POINTS" + 'ENTER'

Press 'FIND'. A window appears: insert the name. Press 'ENTER': in the <u>User Point</u>s List page, the chartplotter shows the <u>Waypoint,</u> in reverse video screen.

Deleting User Points
➤   'MENU' + "USER POINTS" + 'ENTER'

Press 'DELETE'. A warning message is shown; press 'CONFIRM' ('CANCEL' othewise).

Deleting all stored User Points
➤   'MENU' + "USER POINTS" + 'ENTER'

Press 'DEL ALL'. A warning message is shown, press 'CONFIRM' ('CANCEL' otherwise).

Note _____
If you try to delete any User Point used as Target a Warning window will appear, advicing that the User Point belongs to an active route and cannot be deleted.

4.2   USING MARKS & EVENTS

You may tag a location on the chart with a <u>Mark</u> symbol and number, which you can record for later use. Every time you place the cursor on a <u>Mark</u> the automatic info on <u>Mark</u> is shown together with the <u>soft key</u>s with the functions applicable to the <u>Mark</u>. You may place a <u>Mark</u> at your cursor position, while <u>Event</u> is created at your vessel position.

4.2.1 MARKS

You may tag a location on the chart with a <u>Mark</u> symbol and number, which you can record for later use. Every time you place the cursor on a <u>Mark</u> the following functions are available.

4.2.1.1 Adding Mark

➤ **'ENTER' + "MARK" + 'ENTER'**

The new <u>Mark</u> appears on your cursor position. An info window containing <u>Mark</u> name, symbol and <u>Latitude</u>/<u>Longitude</u> is shown.

4.2.1.2 Moving Mark

➤ **Add Mark ('ENTER' + "MARK" + 'ENTER') or Place cursor on existing Mark**

Press 'MOVE'. By moving the cursor, a dotted line connecting the <u>Mark</u> with the new position is shown:
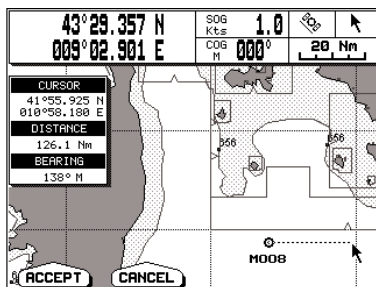
Fig. 4.2.1.2 - Moving Mark function (I)

Press 'ACCEPT':
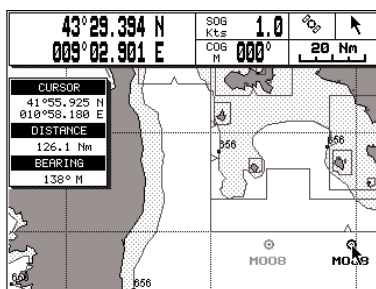
Fig. 4.2.1.2a - Moving Mark function (II)

The <u>Mark</u> is placed in the new position, the "old" <u>Mark</u>, remains on the screen shaded until the screen is redrawn.

4.2.1.3 Deleting Mark

➤ **Add Mark ('ENTER' + "MARK" + 'ENTER') or Place cursor on existing Mark**

Press 'DELETE': a window to confirm the deletion is shown. Press 'CONFIRM' ('CANCEL' otherwise): the <u>Mark</u> remains on the screen shaded until the next screen is redrawn.

4.2.1.4 Editing Mark
➤ **Add Mark ('ENTER' + "MARK" + 'ENTER') or Place cursor on existing Mark**

Press 'EDIT'. A window appears to modify Name, Symbol, Color and coordinates of the existing <u>Mark</u>.
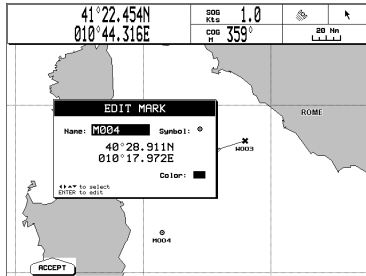
Fig. 4.2.1.3 - Graphic symbol setting

Select the field. If you have selected Name field, press 'ENTER': insert the character (8 characters max), then press 'ENTER'. If Symbol field is selected press 'ENTER': a window with 16 different symbols appears. Select the symbol and press 'ENTER'. If you have selected Color field, press 'ENTER': a window with 16 different colors appears. Select the color and press 'ENTER'. If Coordinates field is selected, press 'ENTER' and then insert the value. Then press 'ACCEPT'.

4.2.1.5 Goto
➤ **Add Mark ('ENTER' + "MARK" + 'ENTER') or Place cursor on existing Mark**

Press 'GOTO': a circle encloses the <u>Mark</u> symbol. A straight line is shown on the screen connecting the <u>Target</u> with the ship's position. When the <u>Target</u> is placed, all navigation data are referred to this <u>Target</u>.

4.2.1.6 Finding Mark
➤ **FIND function: 'MENU' + "FIND" + 'ENTER' + "USER POINTS" + 'ENTER'**

A window is opened to find a stored <u>Mark</u> by entering its label. Insert the name and press 'CONFIRM' ('CANCEL' otherwise).

4.2.1.7 Finding information about Marks: User Points List page
➤ **User Point List page: 'MENU' + "USER POINTS" + 'ENTER'**

A full window is opened showing information about all stored <u>User Points</u> (<u>Marks</u>, <u>Events</u> and <u>Waypoints</u>). Select the <u>User Point</u> you wish. If the page contains more than 8 <u>User Points</u>, the list continues in the next pages. See Par. 4.1.2.8.

4.2.2 EVENTS

In <u>Navigate</u> mode you may place a location with an <u>Event</u> symbol and number, directly on the ship's position. Move the cursor to exit from <u>Navigate</u> mode; place the cursor on an <u>Event</u> to access the following functions.

4.2.2.1 Adding Event

➤ **Select Navigate mode: 'MENU' + "NAVIGATE" + 'ENTER', then 'ENTER' + "MARK" + 'ENTER'**

An <u>Event</u> is placed directly on the ship's position.

4.2.2.2 Deleting Event

➤ **Place cursor on existing Event**

Press 'DELETE': a window to confirm the deletion is shown. Press 'CONFIRM' ('CANCEL' otherwise): the <u>Event</u> remains on the screen shaded until the next screen is redrawn.

Note

If you try to delete any User Point used as Target a Warning window will appear, advicing that the User Point belongs to an active route and cannot be deleted.

4.2.2.3 Editing Event

➤ **Place cursor on existing Event**

Press 'EDIT'. A window appears to modify Name, Symbol and Color of the existing <u>Event</u>.
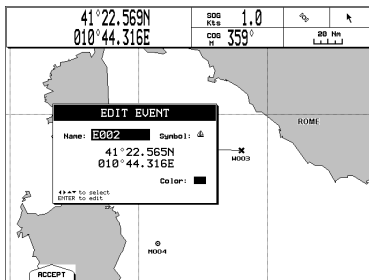
Fig. 4.2.2.3 - Editing Event

Select the field. If you have selected Name field, press 'ENTER': insert the character (8 characters max), then press 'ENTER'. If Symbol field is selected press 'ENTER': a window with 16 different symbols appears. Select the symbol and press 'ENTER'. If you have selected Color field, press 'ENTER': a window with 16 different colors appears. Select the color and press 'ENTER'. If Coordinates field is selected, press 'ENTER' and then insert the value. Then press 'ACCEPT'.

4.2.2.4 Goto

➤ **Place cursor on existing Event**

Press 'GOTO': a circle encloses the Event symbol. A straight line is shown connecting the Target with the ship's position. When the Target is placed, all navigation data are referred to this Target.

4.2.2.5 Finding Event

➤ **'MENU' + "FIND" + 'ENTER' + "USER POINTS" + 'ENTER'**

A window is opened to find a stored Event by entering its label. Insert the name and press 'CONFIRM' ('CANCEL' otherwise).

4.2.2.6 Finding information about Events: List User Points page

➤ **'MENU' + "USER POINTS" + 'ENTER'**

A full window is opened showing information about all stored User Points (Marks, Events and Waypoints). Select the User Point you wish. If the page contains more than 8 User Points, the list continues in the next pages. See Par. 4.1.2.8.

4.3 R/B FUNCTION

Selects the Range and Bearing, R/B, function.

4.3.1 INSERTING R/B

➤ **'ENTER' + "R/B" + 'ENTER'**

A dotted line and a circle appears on the screen. A window with the DST and BRG values is shown. The origin of the line and the circle's centre is the cursor position: move the dotted line in any direction you choose; in the same time the radius changes. Press 'ACCEPT' to confirm ('CANCEL' otherwise).

4.3.2 DELETING R/B

➤ **'ENTER' + "R/B" + 'ENTER' + 'ACCEPT'**

Press 'DELETE' to delete the line and the circle.

4.3.3 EDITING R/B

➤ **'ENTER' + "R/B" + 'ENTER' + 'ACCEPT'**

Press 'EDIT' to modify the line direction and the circle' radius. Move the dotted line in any direction you choose; in the same time the radius changes. Press 'ACCEPT' to confirm ('CANCEL' otherwise).

4.4   USING THE TRACK FUNCTIONS

The chartplotter can be set up for recording your <u>track</u> as you move and for plotting this <u>track</u> on the chart.

4.4.1 ENABLING TRACK STORING

➤   **'MENU' + "TRACK" + 'ENTER' + "ACTIVATE" + 'ENTER'**

To enable the <u>track</u> storing. It is not possible to use the <u>track</u> storing if you are not receiving a valid fix.

When track storing is activated, to disable:

➤   **'MENU' + "TRACK" + 'ENTER' + "DEACTIVATE" + 'ENTER'**

4.4.2 DELETING TRACK

➤   **'MENU' + "TRACK" + 'ENTER' + "DELETE" + 'ENTER'**

Deletes all the <u>track</u> or part of it. 'BEGIN', 'END' and 'WHOLE' allow to identify the start or the end point of the segment to delete.

4.4.3 TRACK SETTING MENU

➤   **'MENU' + "TRACK" + 'ENTER' + "CONFIG" + 'ENTER'**
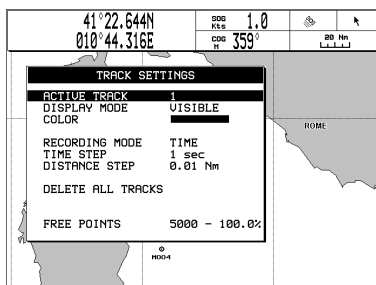
Fig. 4.4.3 - Track Settings menu

4.4.3.1 Selecting Active Track

➤   **'MENU' + "TRACK" + 'ENTER' + "CONFIG" + 'ENTER' + "ACTIVE TRACK" + 'ENTER'**

Select the number of the active <u>track</u>. The <u>default</u> setting is 1.

4.4.3.2 Displaying Track

➤   **'MENU' + "TRACK" + 'ENTER' + "CONFIG" + 'ENTER' + "DISPLAY MODE" + 'ENTER'**

Set the displaying of the past course Visible or Hidden. The <u>default</u> setting is Visible.

4.4.3.3 Selecting Track Color
➤   'MENU' + "TRACK" + 'ENTER' + "CONFIG" + 'ENTER' + "COLOR" + 'ENTER'
Press 'ENTER' as many times as needed to select the color for the selected <u>track</u>.

4.4.3.4 Selecting Track memorizing type
➤   'MENU' + "TRACK" + 'ENTER' + "CONFIG" + 'ENTER' + "RECORDING MODE" + 'ENTER'
Choose Distance (the chartplotter can store a fix when the distance from its last stored position is greater than a defined distance) or Time (the chartplotter can store a fix after a defined time). The <u>default</u> setting is Time.

4.4.3.5 Selecting Time Step
➤   'MENU' + "TRACK" + 'ENTER' + "CONFIG" + 'ENTER' + "TIME STEP" + 'ENTER'
When the tracking function is On and the type of <u>track</u> storing is Time, the chartplotter can store a fix after a defined time. Choose among 1, 5, 10, 30 sec, 1 min. The <u>default</u> setting is 1 sec.

4.4.3.6 Selecting Distance Step
➤   'MENU' + "TRACK" + 'ENTER' + "CONFIG" + 'ENTER' + "DISTANCE STEP" + 'ENTER'
When the tracking function is On and the type of <u>track</u> storing is <u>Distance</u>, you can store a fix when the <u>distance</u> from its last stored position is greater than a defined <u>distance</u>. Choose in the range 0.01, 0.05, 0.1, 0.5, 1.0, 2.0, 5.0, 10.0 Nm (the <u>distance</u> unit is selected by the user, see Cap. 5). The <u>default</u> setting is 0.01 Nm.

4.5   PAN FUNCTION

It is possible to select the <u>pan</u> function; <u>pan</u> allows you to shift area around the cursor or a remote position to the centre of the screen.

4.5.1 MOVING CURSOR TO THE CENTER OF THE SCREEN
➤   'MENU' + "FIND" + 'ENTER' + "CURSOR" + 'ENTER'
The screen is redrawn, the cursor with the location you want to see will shift to the center of the screen:
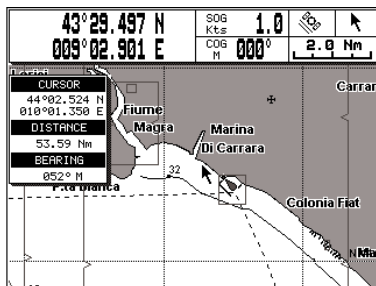
Fig. 4.5.1 - PAN on CURSOR function

4.5.2 PLACING CURSOR ON COORDINATES

➤ 'MENU' + "FIND" + 'ENTER' + "COORDINATES" + 'ENTER'
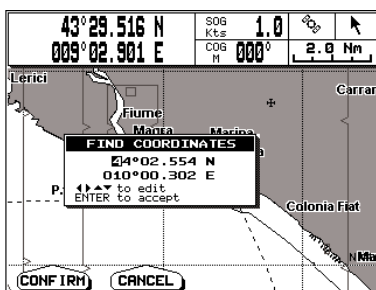
Fig. 4.5.2 - PAN on COORDINATES function

Modify coordinates and press 'CONFIRM' ('CANCEL' otherwise).

4.6 USER C-CARD MENU

The chartplotter allows to copy information to an <u>User C-CARD</u>. You can also return the information to internal memory at a later time. This allows virtually unlimited storage.

➤ 'MENU' + "MEMORY CARD" + 'ENTER'

File name ────

Date and Time of file creation

Type of data contained in the file
(Mark file, Waypoint file...)
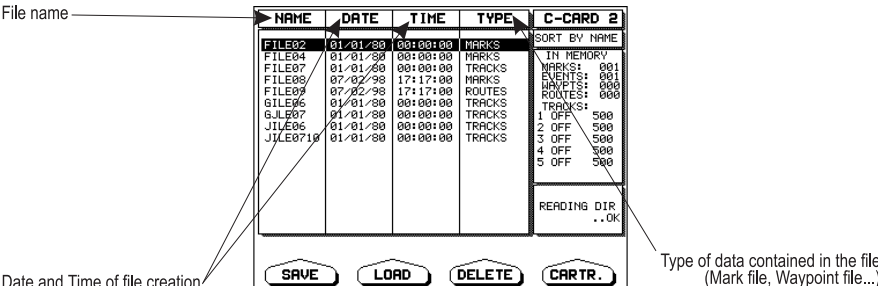
Fig. 4.6 - User C-CARD Menu

4.6.1 SAVING FILE

➤ **'MENU' + "MEMORY CARD" + 'ENTER' + 'SAVE'**

A window is opened to insert the <u>file</u> name and the type of data to save:
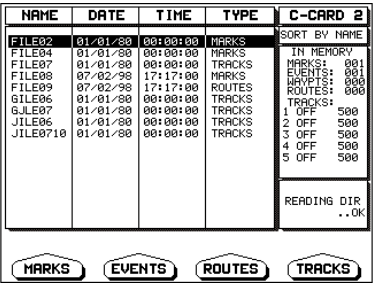
Fig. 4.6.1 - Save File function (I)

Choose the type of data to save by pressing the related 'MARKS', 'EVENTS', 'ROUTES' or 'TRACKS'. Then on the screen appears:
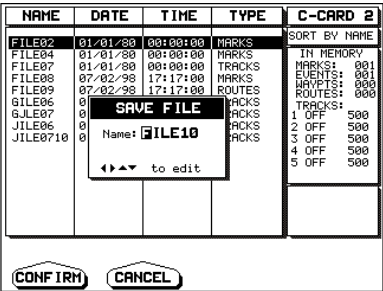
Fig. 4.6.1a - Save File function (II)

Choose the <u>file</u> name. At first a <u>default</u> name is shown: insert the name. Press 'ENTER'.

Note
When naming a file, you may have trouble finding a name that uniquely identifies the file's contents. Dates, for example, are often used in filenames; however, they take up several characters, leaving you with little flexibility. The secret is to find a compromise, a point where you can combine a date with a word, creating a unique filename. The maximum length of the filename is 8 characters. The characters may be numbers (0, ..., 9), letters (A, ..., Z) and spaces (for example legal identifiers are "ABC", "AA", "12121212", "A B C", "1 A 1", and so on.

4.6.2 LOADING FILE

➤ 'MENU' + "MEMORY CARD" + 'ENTER' + 'Lᴏᴀᴅ'
Before pressing 'Lᴏᴀᴅ', choose the <u>file</u> name in the list shown.

4.6.3 DELETING FILE

➤ 'MENU' + "MEMORY CARD" + 'ENTER' + 'Dᴇʟᴇᴛᴇ'
Remove old or unnecessary <u>files</u> to clean up your <u>User C-CARD</u>. Remember that this option permanently erases the <u>file</u>.

4.6.4 USER C-CARD

➤ 'MENU' + "MEMORY CARD" + 'ENTER' + 'Cᴀʀᴛʀ.'

Fig. 4.6.4 - C-CARD functions

4.6.4.1 Reading the User C-CARD Directory

➤ 'MENU' + "MEMORY CARD" + 'ENTER' + 'Cᴀʀᴛʀ.' + 'Rᴇᴀᴅ'
The list of the <u>files</u> present on the <u>User C-CARD</u> inserted into the slot appears.

4.6.4.2 Selecting slot

➤ 'MENU' + "MEMORY CARD" + 'ENTER' + 'Cᴀʀᴛʀ.' + 'Sʟᴏᴛ'
Selects the desired slot where to insert the <u>User C-CARD</u>. If the <u>User C-CARD</u> is not present in the selected slot, a warning message appears.

4.6.4.3 Formatting User C-CARD

➤   'MENU' + "MEMORY CARD" + 'ENTER' + 'Cartr.' + 'Format'

     The <u>format</u> of <u>User C-CARD</u> must be done before using a new <u>User C-CARD</u>: this operation prepares the <u>User C-CARD</u> to receive and store information.

4.6.4.4 Ordering the User C-CARD Directory

➤   'MENU' + "MEMORY CARD" + 'ENTER' + 'Cartr.' + 'Sort By'

     It is possible to order the <u>file</u> directory. This is possible in three different modes:
- Press 'Name' to order by the filename;
- Press 'Time' to order by the time of <u>file</u> creation;
- Press 'Type' to order by the type of data.

5
Terms & Functions

This section explains the terms that may be unfamiliar to the reader. The symbol ■ indicates that the term is followed only by an explanation, while the symbol ➤ indicates that the term is more widely explained; you will also find a briefly description on how to select the related menu option, listing the operation a keys sequence with the menu names enclosed between double apices. For example 'MENU' + "DISPLAY" + 'ENTER' + "USER POINTS" + 'ENTER' means that you must press 'MENU', select the DISPLAY menu and press 'ENTER' to access it; then select the USER POINTS item and then press 'ENTER' to enable or disable the User Points.

➤ **About (page)**

Selects a page that gives information on software and cartography version and general software specification (as user points number, routes number and so on). For more information see Par. 1.3.

'MENU' + "About..." + 'ENTER'

➤ **Additional Second Factor (ASF)**

Sets the ASF for the slave in the selected <u>chain</u>. The <u>default</u> setting is 0.

'MENU' + "DISPLAY" + 'ENTER' + "Coordinate System" + 'ENTER' + "TD" + 'ENTER' + "ASF1/2" + 'ENTER'

➤ **Advanced (menu)**

Selects the <u>Input/Output</u> menu, the <u>Fix & Compass</u> menu and the <u>Simulation Mode</u> menu.

'MENU' + "ADVANCED" + 'ENTER'

➤ **Alarms (menu)**

Turns On/Off the <u>Auto Off</u> and sets the desired value for the <u>Arrival Alarm</u>, <u>XTE Alarm</u>, <u>Anchor Alarm</u>, <u>Depth Alarm</u>. Also you can set the preferred value for the <u>Grounding Alarm</u>, <u>Grounding Depth Limit</u>, <u>Grounding Alarm Range</u>, <u>Grounding Alarm Report</u>.

'MENU' + "ALARMS" + 'ENTER'

➤ **Alter = Alternate Solution**

Turns On/Off the Alternate Solution in the <u>chain</u>. The <u>default</u> setting is Off.

'MENU' + "DISPLAY" + 'ENTER' + "Coordinate System" + 'ENTER' + "TD" + 'ENTER' + "Alter" + 'ENTER'

➤ **Altitude Unit**

Sets the altitude (altitude of <u>GPS</u> Antenna on the medium sea level) unit among Ft = Feet, FL = Flight Level and Mt = Meters. The <u>default</u> setting is Ft.

'MENU' + "GENERAL" + 'ENTER' + "Altitude Unit" + 'ENTER'

➤ **Anchor Alarm**

The anchor position is identified by placing a circle with the radius equal to the alarm set. When the ship exits from

the anchor circle, the chartplotter emits a beep and a pop-up window is opened. You can disable (Off) the Anchor Alarm or insert value. The <u>default</u> setting is Off.
'MENU' + "ALARMS" + 'ENTER' + "Anchor Alarm" + 'ENTER'

➤ **Arrival Alarm**

Specifies the radius of a circle around the <u>Waypoint</u> of a <u>route</u>: when your vessel reaches this circle the alarm sounds. You can disable (Off) the Arrival Alarm or insert value. The <u>default</u> setting is 1.00 Nm.
'MENU' + "ALARMS" + 'ENTER' + "Arrival Alarm" + 'ENTER'

■ **Arrival Time**

The estimated time of day you will reach your destination, based on your current <u>speed</u> and <u>track</u> from <u>GPS</u>.

➤ **Attention Areas**

Enables by filling area (On) or disables (Off) the displaying of the Attention Areas (areas in which special attention by the mariner is required, because of natural or man-made hazards, or sailing regulations and restrictions). Moreover a special symbol (!) is placed inside the area selecting On option. This is valid also for the categories: FISHING FACILITY, MARINE FARM/CULTURE, MILITARY PRACTICE AREA, RESTRICTED AREA, SEAPLANE LANDING AREA. When the area is small, it is identified only by the boundary. The <u>default</u> setting is On.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Attention Areas" + 'ENTER'

➤ **Auto Info**

The type of Automatic Info is user selectable. The possible settings are: **Off**: disabled, no automatic info shown at all. **On Points**: only on points. **On All**: on all objects (points, lines and areas). The <u>default</u> setting is On Points.
'MENU' + "DISPLAY" + 'ENTER' + "Auto Info" + 'ENTER'

➤ **Auto Off**

You can enable (On) or disable (Off) the automatic shutdown of the alarms when the alarm condition disappears. The <u>default</u> setting is On.
'MENU' + "ALARMS" + 'ENTER' + "Auto Off" + 'ENTER'

■ **Azimuth**

The angular measurement from the horizon to a satellite or another object.

■ **Bathymetric Lines**

Imaginary lines connecting points of equal water <u>depth</u>.

■ **Beacon**

A prominent, specially constructed object forming a conspicuous vertical mark as a fixed aid to navigation.

➤ **Bearing**

Selects either degrees magnetic, Auto Mag, or degrees true, True. If magnetic readings are selected the variation is computed automatically for every zone as soon as the chart is displayed. The <u>default</u> setting is Auto Mag.
'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS" + 'ENTER' + "Bearing" + 'ENTER'

■ **BRG = Bearing**

It is the angle between the North (True or Magnetic) and a destination. It represents the direction to follow.

■ **Buoy**

A floating object moored to the sea bottom in a particular (charted) place, as an aid to navigation.

■ **Buoys & Beacons**

<u>Buoy</u>s and <u>Beacon</u>s are used to indicate to mariners recommended or established routes, underwater dangers, restrictions and regulations. They can be lighted or not and are coloured according to their international code.

➤ **Calibrate Compass**

The variation table is used to match magnetic value readout on the chartplotter comparable with the value given by the compass of the boat. In other words, since the compass of the boat must be compensated (due to the iron

masses, ...), we use the same values given by the chartplotter. This means that, for example, if the BRG to the next Waypoint readout in the chartplotter display is "X" Mag degree, if you steer the boat reading "X" Mag degree from the compass, you are driving well toward the next Waypoint.

'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS" + 'ENTER' + "CALIBRATE COMPASS" + 'ENTER'

➤ **Cartography**

Turns On/Off the Cartography. Used to zoom-in and pan everywhere regardless the existence of data. While in "virtual cartography" (Cartography Off) by setting Cartography On from menu, the chartplotter displays the previous scale level with charts. Again while in Cartography On, the chartplotter will work in the same way also when you exit from the charts coverage, panning with the cursor or because of a ship position change. When in Cartography Off, it is also possible to have virtual cartography between two subsequent scale levels with charts. The default setting is On.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Cartography" + 'ENTER'

➤ **CDI Scale**

Select your preferred CDI (Course Deviation Indicator) Scale among 0.2, 0.5, 1.0, 2.0, 4.0, 10.0 Nm by using the joystick and then press 'ENTER'. The default setting is 10.0 Nm.

'MENU' + "PAGE" + 'ENTER' + "NAVIGATION DATA" or "3D ROAD" + 'ENTER' then:
'MENU' + "NAV DISPLAY" + 'ENTER' + "CDI Scale" + 'ENTER'

➤ **Chain**

Selects the desired chain. The LORAN chains are groups of transmitting stations that use timed radio pulse transmissions. In each of these chains there is a master station and two or more slave or secondary stations. Stations belonging to a same chain transmit pulses in timing groups: a different time base identifies each chain. The time base of each chain is the Group Repetition Interval or GRI. This GRI identifies the chain in unique mode. For example the GRI = 4990 identifies the chain of Central Pacific zone. The default setting is 9970.

'MENU' + "DISPLAY" + 'ENTER' + "Coordinate System" + 'ENTER' + "TD" + 'ENTER' + "Chain" + 'ENTER'

➤ **Chart Boundaries**

Enables (On) or disables (Off) the displaying of the Chart Boundaries. Selecting Auto instead, if we are in background charts only the first charts level contained in the C-CARD are displayed, if we are in a charts level contained in the C-CARD the next four charts level are displayed. The default setting is On.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Chart Boundaries" + 'ENTER'

➤ **Chart Display**

Selects the screen configuration with charts and Text Area, that is shown on the top of the screen (see Par. 3.1).

'MENU' + "PAGE" + 'ENTER' + "CHART DISPLAY" + 'ENTER'

➤ **Chart Settings (menu)**

Turns On/Off the display of coordinates (Lat/Lon Grid), Chart Boundaries, Cartography, Mixing Levels and Declutter.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER'

■ **COG = Course Over Ground**

Direction of the path over ground actually followed by a vessel.

➤ **Color Selection**

Selects ROUTE legs color: 'MENU' + "ROUTE" + "COLOR" + 'ENTER'
Selects TRACK color: 'MENU' + "TRACK" + 'ENTER' + "CONFIG" + 'ENTER' + "COLOR" + 'ENTER'
Selects USER POINTS color: cursor on User Point + 'EDIT' + "COLOR" + 'ENTER'

➤ **Compute Correction**

Corrects fixes from the positioning instrument. By placing the cursor on the ship's real position and selecting this

option, the error is calculated and internally memorized for appropriate <u>correction</u>, but not applied.
'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS + 'ENTER' + "Compute Correction" + 'ENTER'

➤ Coordinate System
Sets your preferred Coordinate System among ddd mm ss, ddd mm.mm, ddd mm.mmm, <u>UTM</u>, <u>OSGB</u>, <u>TD</u>. The <u>default</u> setting is ddd mm.mmm.
'MENU' + "DISPLAY" + 'ENTER' + "Coordinate System" + 'ENTER'

➤ Coordinates
Places cursor on the inserted coordinates.
'MENU' + "FIND" + 'ENTER' + "COORDINATES" + 'ENTER'

■ Correction
To compute fix error in automatic mode, place cursor on ship's real position and then follow the procedure (<u>Compute Correction</u>). It is also possible to compute the fix error in manual mode (<u>Correction Offset</u>). Once you computed the error, you can turn the <u>Fix Correction</u> On or Off.

➤ Correction Offset
Manual correction of fix position.
'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS" + 'ENTER' + "Correction Offset" + 'ENTER'

➤ Course Line
Disables (Off) or sets time as : 2, 10, 30 min, 1, 2 hours, Infinite. The <u>default</u> setting is Infinite.
'MENU' + "DISPLAY" + 'ENTER' + "Course Line" + 'ENTER'

■ Cross Track error = XTE
The distance from the ship's present position to the closest point on a line between the origin and destinations <u>Waypoint</u>s of the navigation leg being traveled.

■ CTS = Course To Steer
The optimum direction the boat should be steered in order to efficiently make headway back to the courseline while also proceeding toward the destination <u>Waypoint</u>.

➤ Cultural Features
Enables (On) or disables (Off) the displaying of the Cultural Features (any man-made topographic feature as built-up area, buildings, roads, ...). The <u>default</u> setting is On.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "LAND SETTINGS" + 'ENTER' + "Cultural Features" + 'ENTER'

■ Current
Non-periodical movement of sea-water, generally horizontal, due to many causes such as different temperatures and prevalent winds. Some may be temporary, others permanent.

➤ Cursor
Sets cursor to the centre of the screen.
'MENU' + "FIND" + 'ENTER' + "CURSOR" + 'ENTER'

➤ Cursor Control
Enables (On)/disables (Off) the cursor control. The <u>default</u> setting is Off.
'MENU' + "ADVANCED" + 'ENTER' + "SIMULATION MODE" + 'ENTER' + "Cursor Control" + 'ENTER'

➤ Cursor Speed
Selects the preferred speed (among Low, Medium and High) for cursor in Chart or in Menu. The <u>default</u> setting is Medium.
'MENU' + "GENERAL" + 'ENTER' + Cursor Speed" + 'ENTER'

➤ Cursor Window
Enables (On) or disables (Off) the display of the cursor window on the screen. The <u>default</u> setting is On.

'MENU' + "DISPLAY" + 'ENTER' + "Cursor Window" + 'ENTER'

➤ **Customize Map (menu)**

Allows the user to customize the following selections and is divided into the following setting menus: Marine Settings, Depth Settings, Land Settings and Chart Settings.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER'

➤ **Data Window Mode**

Customizes the Text Area layout among Full Screen, Text Area with 5 boxes and Text Area with 8 boxes. The default setting is 5 Boxes.

'MENU' + "DISPLAY" + 'ENTER' + "Data Window Mode" + 'ENTER'

➤ **Date (Simulation)**

Sets the date of the simulated fix.

'MENU' + "ADVANCED" + 'ENTER' + "SIMULATION MODE" + 'ENTER' + "Date" + 'ENTER'

➤ **Date Format**

Sets you preferred date between MM-DD-YY (month-day-year) and DD-MM-YY (day-month-year). The default setting is MM-DD-YY.

'MENU' + "GENERAL" + 'ENTER' + "Date Format" + 'ENTER'

■ **Datum**

The Latitude and Longitude lines printed on any map are based on certain models of the shape of the earth: these models are called Datum or Coordinate Systems. There are many different Datum in use, each one gives different Lat/Lon positions for an identical point on the surface of the earth.

➤ **Declutter**

Turns On/Off. When it is On removes overlapping text (e.g. Names, Spot Soundings etc.). The default setting is Off.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Declutter" + 'ENTER'

■ **Dedicated key**

A key with permanently defined function. These keys are labelled on the front panel of the chartplotter.

■ **Default**

Indicates a value or a setting which is used if the user has not defined a particular value. You can modify this value using the menu settings.

➤ **Depth Alarm**

Turns On/Off the Depth Alarm. The default setting is Off.

'MENU' + "ALARM" + 'ENTER' + "Depth Alarm" + 'ENTER'

➤ **Depth Areas**

Turns On/Off the displaying of Depth Areas (imaginary lines connecting points of equal water depth). The default setting is On.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Areas" + 'ENTER'

➤ **Depth Areas <**

Sets a min reference depth value. The default setting is 5 Ft.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Areas <" + 'ENTER'

➤ **Depth Areas >**

Sets a max reference depth value. The default setting is 30 Ft.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Areas >" + 'ENTER'

■ Depth Contours

Imaginary lines connecting points of equal water depth (see also <u>Bathymetric Lines</u>).

➤ Depth Lines & Soundings

Turns On/Off the displaying of Depth Lines and Soundings. The <u>default</u> setting is On.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Lines & Sndgs" + 'ENTER'

➤ Depth Lines & Soundings <

Sets a max reference depth & soundings value. The <u>default</u> setting is 09999 Ft.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Lines & Sndgs <" + 'ENTER'

➤ Depth Lines & Soundings >

Sets a min reference depth & soundings value. The <u>default</u> setting is 0 Ft.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER' + "Depth Lines & Sndgs >" + 'ENTER'

➤ Depth Settings (menu)

The Depth Settings menu controls the display on the map of the depth informations. The available options are: <u>Depth Areas</u>, <u>Depth Areas <</u>, <u>Depth Areas ></u>, <u>Depth Lines & Soundings</u>, <u>Depth Lines & Soundings <</u>, <u>Depth Lines & Soundings ></u>.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "DEPTH SETTINGS" + 'ENTER'

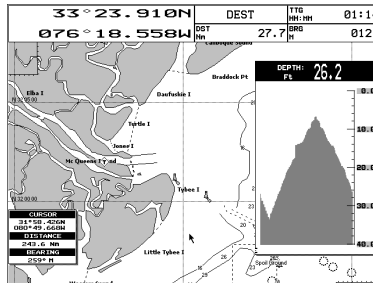### ➤ Depth Graph

Selects the <u>Depth</u> Graph in split mode.
'MENU' + "PAGE" + 'ENTER' + "DEPTH GRAPH" + 'ENTER'
or
press any soft keys + 'DEPTH 1' (if it is present)

Fig. 5 - The Depth Graph

➤ Depth Graph Full

Selects the <u>Depth</u> Graph at full screen.
'MENU' + "PAGE" + 'ENTER' + "DEPTH GRAPH FULL" + 'ENTER'
or
press any soft keys + 'DEPTH 2' (if it is present)
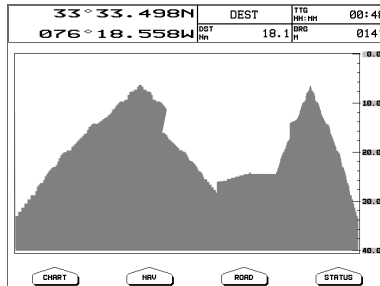
Fig. 5a - The Depth Graph at full page

➤ **Depth Unit**

Sets the depth units among Ft = Feet, FM = Fathoms and Mt = Meters. The default setting is Ft.
'MENU' + "GENERAL" + 'ENTER' + "Depth Unit" + 'ENTER'

■ **DGPS = Differential GPS**

Provides even greater positioning accuracy than standard GPS.

➤ **DGPS Input**

Selects the desired Baud Rate between 4800 and 9600.
'MENU' + "ADVANCED" + 'ENTER' + "INPUT/OUTPUT" + 'ENTER' + "DGPS Input" + 'ENTER'

➤ **Display (menu)**

Display Menu allows you to change how the chartplotter displays information. Turns On/Off the display of External Waypoint and Cursor Window; selects the desired setting for Auto Info, Data Window Mode, Palette, Map Orientation, Course Line, Coordinate System, Map Datum, Fix Datum, User Points and Screen Amplifier. It is possible to select this menu only when the active page is the Chart Display or the Depth Graph (in split mode). So firstly select one of these pages and then:
'MENU' + "DISPLAY" + 'ENTER'

➤ **Display Mode**

To simplify the customization of the chart display, the map settings are now re-organized in modes allowing the user to choose the preferred setting. Pre-programmed settings are user selectable from Full, Simple, Fishing, Low and Custom. The default setting is Custom (this selection allows the user to customize the chart to users preferences).
'MENU' + "MAP" + 'ENTER' + "Display Mode" + 'ENTER'

➤ **Dist & Speed Units**

Sets the Distance Unit and the Speed Unit.
'MENU' + "GENERAL" + 'ENTER' + "Dist & Speed Units" + 'ENTER'

➤ **Distance Unit**

Sets the distance unit among Nm = nautical miles, Sm = status miles e Km = kilometers. The default setting is Nm.
'MENU' + "GENERAL" + 'ENTER' + "Dist & Speed Units" + 'ENTER'

■ **DTG = Distance To Go**

The actual distance to reach the Target.

➤ **Event**

User Point that refers to the ship's position. It is simply a way of marking where the boat is (see Par. 4.2).
Inserting Event: 'MENU' + "NAVIGATE" + 'ENTER' + 'ENTER' + "MARK" + 'ENTER'
Deleting Event: Place cursor on existing Event + 'DELETE' + 'CONFIRM'
Editing Event: Place cursor on existing Event + 'EDIT'

➤ **External Waypoint**

The coordinates of a Waypoint, received from a GPS or a LORAN connected to the chartplotter, can be stored into the chartplotter, if the GPS or the Loran are NMEA-0183 protocol compatible and support the $BWC sentence (this symbol remains on the screen for 30 seconds). You may save it by placing a Waypoint or a Mark onto that symbol. As soon as the chartplotter receives another $BWC sentence with the coordinates of a new Waypoint, the symbol moves to the new point. The default setting is Off.

'MENU' + "DISPLAY" + 'ENTER' + "External WPT" + 'ENTER'

■ **File**

It is a collection of information (of the same type) stored on a User C-CARD. Each file must have a unique name, ideally one that describes its contents. Filenames are kept in a directory on each User C-CARD (see Par. 4.6).

➤ **Find (menu)**

Finds the desired position or object (see Port Services, Port, Tide Stations, Wrecks, Obstructions, Cursor, Coordinates and User Points).

'MENU' + "FIND" + 'ENTER'

➤ **Fix & Compass (menu)**

Turns On/Off the Fix Correction, the Position Filter and the Speed Filter, enables the Compute Correction and Correction Offset functions, sets the desired value for Bearing , Magnetic Variation and Static Navigation, and selects the Calibrate Compass page.

'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS + 'ENTER'

➤ **Fix Correction**

Turns On/Off the Correction from the positioning system. If the new Correction is calculated, but the Correction is not enabled, the ship's position is not changed. The default setting is Off.

'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS + 'ENTER' + "Fix Correction" + 'ENTER'

➤ **Fix Datum**

Selects the Fix Datum among 130 items. WGS 1984 is the default Fix Datum.

'MENU' +"DISPLAY" + 'ENTER' + "Fix Datum" + 'ENTER'

➤ **Formatting**

The formatting of a User C-CARD must be done before using a new User C-CARD: this operation prepares the User C-CARD to receive and store information. Before you start the formatting procedure, insert a new User C-CARD into the slot. Be sure to label it; the label will remind you that you have formatted the User C-CARD, and will help you identify its contents. An used User C-CARD can also be formatted; if a used User C-CARD is formatted, however, all previously stored data on the User C-CARD will be completely deleted (see Par. 4.6).

'MENU' +"MEMORY CARD" + 'ENTER' + 'CARTR.' + 'FORMAT'

➤ **General (menu)**

Turns On/Off the Keypad Beep, selects the Language, sets the desired setting for Cursor Speed, Dist & Speed units, Depth unit, Altitude Unit, Time Reference, Time Format and Date Format.

'MENU' + "GENERAL" + 'ENTER'

➤ **Goto**

Sets a particular mark on the map, called Target or Destination (see Par. 3.2 and 3.3).

'ENTER' + "GOTO" + 'ENTER'

➤ **GPS Data (page)**

Selects the GPS Page.

'MENU' + "PAGE" + 'ENTER' + "GPS DATA" + 'ENTER'

or

press any soft keys + 'GPS' (if it is present)

Speed Over Groun

Fix Coordinates

SOG Kts **1.0** COG M **000°**

Course Over Ground

Fix Good **WGS 1984**

29/09/99 02:29:43 U

Fix Status

Date and UTC (U) or Local (L) Time
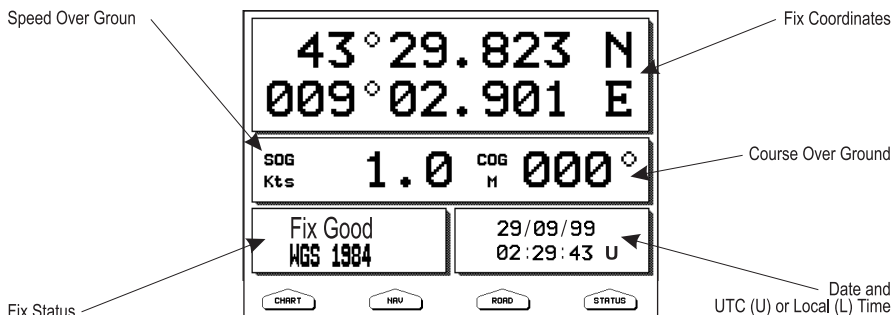
CHART   NAV   ROAD   STATUS

Fig. 5b - The GPS Page

■ **GPS = Global Positioning System**
It is a satellite based navigation system operated by the US Department of Defense. It gives the navigator a position 24 hours a day, 365 days a year under any weather conditions.

➤ **GPS Status (page)**
The GPS Status page shows in graphic mode GPS data.
'MENU' + "PAGE" + 'ENTER' + "GPS STATUS" + 'ENTER'
or
press any soft keys + 'STATUS' (if it is present)

Fix Status

Fix coordinates

Date and UTC (U) or Local (L) time

Fix Good

43°24.885N 010°11.887E

29/09/99 02:29:43 U

Used Satellite

Bars to indicate S/N Ratio

Speed Over Ground

Course Over Ground

Altitude

Course Over Ground

Tracked, but not used, Satellite

A = 0° azimuth
B = 120° azimuth

E = 0° elevation
C = 45° elevation
D = 90° elevation

SOG: 54.0 Kts   ALT:---.- Ft   HDOP: 12.5
COG: 210° M   VDOP: 33.2

Horizontal dilution of precision

Vertical dilution of precision

CHART   NAV   ROAD   STATUS
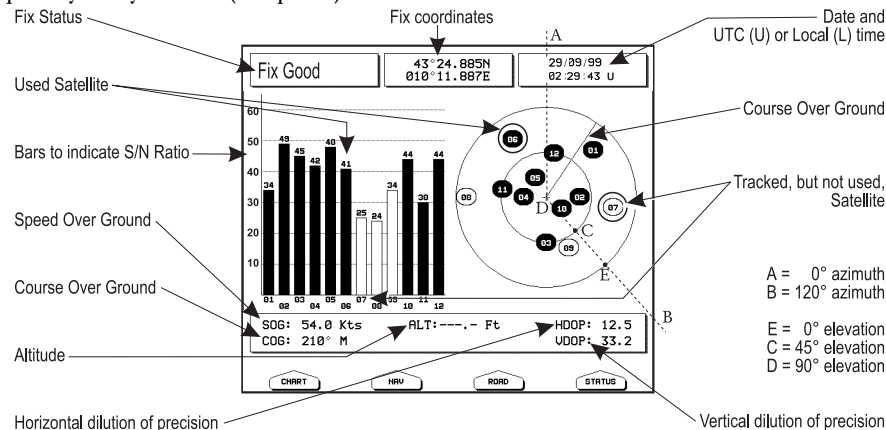
Fig. 5c - GPS Status page

On the right side of the screen (see Fig. 5c), there is a polar representation of the azimuth and elevation of each satellites. The circle contains a number indicating the PRN of the satellite and it is filled when it is used for the fix solution. On the left side there are histograms indicating the S/N ratio (SNR). The bar is filled when the satellite is used for solution. As example, the satellite with PRN=10 is used for solution with S/N=44, Azimuth=127degree and Elevation=70degree. When a valid fix is received, the Lat/Lon, Date, Time, HDOP, VDOP, ALT, COG, SOG are shown in the page.

➤ **Grounding Alarm**
The chartplotter is provided with a function that, by querying the map's data, verifies potential danger to navigation due to shallow water, land, rocks, obstructions and shoreline constructions. The maps are scanned periodically (every 10 seconds). When the Grounding Alarm is active, the chartplotter scans an area in front of the boat. This area is

identified by a triangle drawn in front of the boat icon whose direction is determined by the current boat <u>heading</u>. The length of the triangle is user selectable and its angle is 30 degrees. If any of the above objects are found, the chartplotter notifies the danger on a dedicated warning message box in the Grounding Alarm Report page. The Grounding Alarm is switched Off by <u>default</u> after a Master Reset. Once the Grounding Alarm has been activated, a warning message is shown.

'MENU' + "ALARMS" + 'ENTER' + "Grounding Alarm" + 'ENTER'

Note _____

The Grounding Alarm function only operates with the new NT⁺ C-CARDs. It also affects the speed of the redraw of the screen. If this function is not used it maybe disabled.

➤ **Grounding Alarm Range**

Allows setting the length of the sector to be detected among 0.25, 0.5, 1.0 Nm. The <u>default</u> setting is 0.25 Nm. When any of the searched objects is found in the scanned area, a tick marker is printed on the relative box in the <u>Grounding Alarm Report</u> page to identify which dangerous objects have been currently detected.

'MENU' + "ALARMS" + 'ENTER' + "Grounding Alarm Range" + 'ENTER'

➤ **Grounding Alarm Report**

Allows displaying the report of the dangerous objects currently detected.

'MENU' + "ALARMS" + 'ENTER' + "Grounding Alarm Report" + 'ENTER'

➤ **Grounding Depth Limit**

The user can enter the minimum depth.

'MENU' + "ALARMS" + 'ENTER' + "Grounding Depth Limit" + 'ENTER'

■ **HDG = Heading**

The horizontal direction in which a ship actually points or heads in any moment (see also <u>COG</u>).

■ **HDOP = Horizontal Dilution Of Precision**

It is the index for position-fixing accuracy. The smaller the HDOP value, the more accurately the position can be fixed.

➤ **Heading Simulation**

Sets the desired value for <u>heading</u> in <u>Simulation Mode</u> menu. The <u>default</u> setting is 000° M.

'MENU' + "ADVANCED" + 'ENTER' + "SIMULATION MODE" + 'ENTER' + "Heading" + 'ENTER'

➤ **Home**

From the chart display, if the <u>GPS</u> computing a valid fix position and the chartplotter is not in Home mode, pressing 'CLEAR' sets Home mode. When Home (called also <u>Navigate</u>) mode is set, the cursor is not shown anymore and all cartographic functions (zoom, scroll, etc.) are leaded by the fix position. The fix is centered in the map display and the map scrolls underneath as the fix position changes. As soon as the cursor is moved, Home mode is deactivated and the cursor symbol is shown. Note that altough the cursor symbol is not displayed when Home mode is active, its coordinates must be updated with the fix position coordinates.

If a valid fix position is not received and 'CLEAR' is pressed, the chartplotter emits a triple beep and shows a warning message to advice that Home mode cannot be set. Press 'ENTER' or 'CLEAR' (or 'Oκ') to close the warning window.

Activate Home mode (if not into a menu): 'CLEAR'
Exit from Home mode: move the cursor

➤ **Info page**

This page combines the Info Tree and the Expanded Info pages; this gives the advantage of showing the details of the object selected on the Info Tree while the cursor is moving through the Info Tree's items. The upper side of the page contains the Info Tree and the Lower side contains the expanded information. While moving the cursor through the Info Tree, all the relevant information of the selected object is shown on the lower part of the page.

'MENU' + "INFO" + 'ENTER'

➤ Input/Output (menu)

Selects the proper format for the <u>NMEA0183 I/O Port</u>, <u>NMEA0183 GPS Port</u>, <u>NMEA Output Format</u>, <u>DGPS</u> <u>Input</u>, <u>NMEA Output</u> and <u>Printer Output</u>.
'MENU' + "ADVANCED" + 'ENTER' + "INPUT/OUTPUT" + 'ENTER'

➤ Keypad Beep

Turns On/Off the sound after pressing a key ("beep"). The <u>default</u> setting is On.
'MENU' + "GENERAL" + 'ENTER' + "Keypad Beep" + 'ENTER'

➤ Land Settings (menu)

Turns On/Off the display of <u>Natural Features</u>, <u>Rivers & Lakes</u>, <u>Cultural Features</u> and <u>Landmarks</u>.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "LAND SETTINGS" + 'ENTER'

➤ Landmarks

Turns On/Off the displaying of the Landmarks (any prominent object such as monument, buiding, silo, tower, mast, ..., on land which can be used in determining a location or a direction). The <u>default</u> setting is On.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "LAND SETTINGS" + 'ENTER' + "Land-marks" + 'ENTER'

➤ Language

Selects the language in which you wish information to be displayed (for screen labels, menus and options, but it is not affect the map information). The <u>default</u> setting is English (see Par. 2.4).
'MENU' + "GENERAL" + 'ENTER' + "Language" + 'ENTER'

■ LAT/LON

<u>Coordinate system</u> using <u>Latitude</u> and <u>Longitude</u> coordinates to define a position on earth.

➤ Lat/Lon Grid

Turns On/Off the displaying of the <u>Latitude</u> and <u>Longitude</u> Grids. The <u>default</u> setting is On.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Lat/ Lon Grid" + 'ENTER'

■ Latitude

The angular distance North or South of the equator measured by lines encircling the earth parallel to the equator in degrees from 0° to 90°.

➤ Light Sectors

Turns On/Off the displaying of Light Sectors of all the Fixed Lights, Buoys and lighthouses. When Lights are on, lights are shown on lighthouses and other lights that rotate, a light sector is displayed to show the range of coverage for the light. The <u>default</u> setting is On.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Light Sectors" + 'ENTER'

■ LOG

<u>Speed</u> of the vessel relative to the water.

■ Longitude

The angular distance East or West of the prime meridian (Greenwich meridian) as measured by lines perpendicular to the parallels and coverging at the poles from 0° to 180°.

■ Loran

The Loran <u>Chains</u> are groups of transmitting stations that use timed radio pulse transmissions.

■ Magnetic Deviation

The angle between the Magnetic North and the Compass North.

➤ Magnetic Variation

It is possible to calculate the <u>Magnetic Variation</u> in an Automatic or manual mode, by inserting the step for calculation

of <u>Magnetic Variation</u>. The <u>default</u> setting is Automatic.
'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS + 'ENTER' + "Magnetic Variation" + 'ENTER'

■   **Magnetic Variation**

The angle between the magnetic and geographic meridians at any place, expressed in degrees West or East to indicate the direction of magnetic North from true North. It changes from point to point, and (at the same point) with time.

➤   **Map (menu)**

Selects the <u>Display Mode</u> item to choice the pre-programmed settings and the <u>Customize Map</u> menu.
'MENU' + "MAP" + 'ENTER'

➤   **Map Datum**

Selects the Map <u>Datum</u> among 130 items. <u>WGS 1984</u> is the <u>default</u> Map <u>Datum</u>.
'MENU' + "DISPLAY" + 'ENTER' + "Map Datum" + 'ENTER'

➤   **Map Orientation**

Selects the orientation of your chart according to: North Up: the map is shown with North upwards. Track Up: the map is shown with the ship's current <u>heading</u> upwards. The <u>default</u> setting is North Up.
'MENU' + "DISPLAY" + 'ENTER' + "Map Orientation" + 'ENTER'
If Track Up is selected, a window is opened to insert the <u>Map Orientation Resolution</u> angle.

■   **Map Orientation Resolution**

It is the resolution angle for the <u>Map Orientation</u>, range [5, 60] degrees. The <u>default</u> setting is 30°.

➤   **Marine Settings (menu)**

The Marine Settings menu controls the display on the map of the marine features. The available options are <u>Names</u>, <u>Nav-Aids</u>, <u>Light Sectors</u>, <u>Attention Areas</u>, <u>Tides + Currents</u>, <u>Seabed Type</u>, <u>Ports + Services</u>, <u>Tracks + Routes</u>, <u>Underwater Objects</u>.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER'

➤   **Mark**

Reference points related to cursor position (see Par. 4.2).
Inserting Mark: 'ENTER' + "MARK" + 'ENTER'
Deleting Mark: Place cursor on existing Mark + 'DELETE' + 'CONFIRM'
Editing Mark: Place cursor on existing Mark + 'EDIT'

➤   **Memory CARD**

The chartplotter uses the optional <u>User C-CARD</u> to save user data (see Par. 4.6).
'MENU' + "MEMORY CARD" + 'ENTER'

➤   **Mixing Levels**

Turns On/Off. When the map coverage at the current zoom level does not fill the entire screen, the chartplotter draws the rest of the map expanding the cartographic information read from, at most, two zoom levels above the current zoom level. For this reason the map is drawn three times: firstly it draws the two levels before the current level and then the current level. The area covered by the cartographic data read from the previous levels is identified by a dotted pattern. When the cursor is moved on an area not covered by data of the current level and the <u>Cartography</u> item is switched Off, the chartplotter zooms out to the first level covered by cartographic data. When the <u>Cartography</u> item is switched On, the cursor can be moved on the areas obtained from the previous levels but no information is provided on the objects found on that area since it is considered not suitable for navigation at that scale level. The <u>default</u> setting is Off.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "CHART SETTINGS" + 'ENTER' + "Mixing Levels" + 'ENTER'

Note _____

The Mixing Levels function works only with the new NT⁺ C-CARDs. It also affects the speed of the redraw of the screen. If this function is not used it maybe disabled.
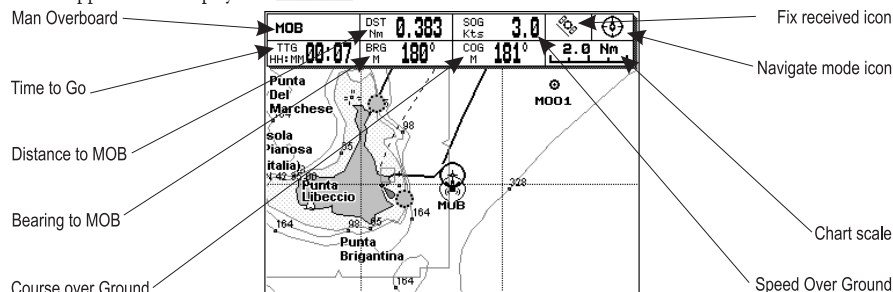
➤ **MOB = Man OverBoard**

It is an important function useful in the case someone or something falls overboard.

Inserting MOB

Press 'MOB' to place MOB symbol at ship's coordinates: the message "MOB Activate" is shown for a few second, then disappears. Data displayed in Text Area are related to MOB.

Man Overboard
Time to Go
Distance to MOB
Bearing to MOB
Course over Ground
Fix received icon
Navigate mode icon
Chart scale
Speed Over Ground

Fig. 5d - Man Overboard

Deleting MOB

Press 'MOB': a window to confirm the MOB deletion is shown, press 'CONFIRM' (or "CANCEL' to abort operation). The MOB symbol remains on the screen shaded until the next screen redraws.

➤ **Names**

Turns On/Off the displaying of the Names. The default setting is On.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Names" + 'ENTER'

➤ **Natural Features**

Turns On/Off the displaying of the Natural Features (any topographic feature formed by the action of natural processes: coastlines, relief, glaciers, ...). The default setting is On.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "LAND SETTINGS" + 'ENTER' + "Natural Features" + 'ENTER'

➤ **Nav-Aids**

Turns US/US Simple/INT/INT Simple/Off. When selected it affects Lights, Signals, Buoys & Beacons display. The default setting is US.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Nav-Aids" + 'ENTER'

➤ **Nav Display (menu)**

The Nav Display menu allows to select CDI Scale and Navigation Page. It is possible to display this menu only if the Navigation Data page or the 3D Road page has been selected; so firstly select one of this pages and then:

'MENU' + "NAV DISPLAY" + 'ENTER'

➤ **Navigate**

See Home mode.

Activate Navigate (if not into a menu): 'CLEAR'

Exit from Navigate: move the cursor

➤ **Navigation Data (page)**

Shows information about speed (SOG) and course (COG) of the ship, status of the received signal, ship's coordinate and other general information.

'MENU' + "PAGE" + 'ENTER' + "NAVIGATION DATA" + 'ENTER'

or

press any soft keys + 'NAV' (if it is present)

Fix Status ──────────→
Speed Over Ground ──→
Distance ────────────→
Cross Track Error ───→
CDI (Course Deviation Indicator) ───→

Date and UTC (U) or Local (L) time
Alphanumeric identifier of the Target if set
Course Over Ground
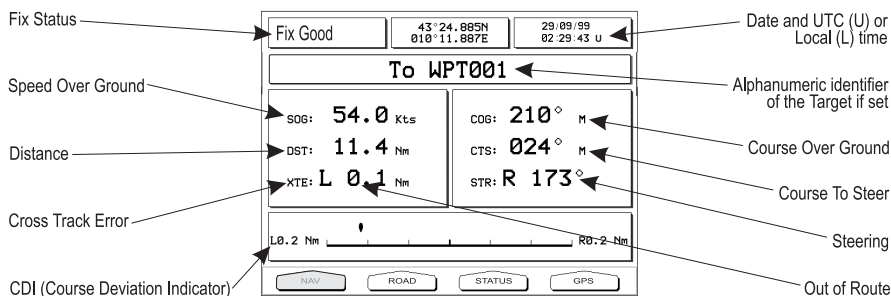Course To Steer
Steering
Out of Route

Fig. 5e - Navigation Data Page

➤ **Navigation Page (menu)**

After selected this menu a new window appears with six items. Using the joystick select the item you want to change and press 'ENTER': another window appears, use the joystick to select the preferred data to display in the Navigation Data page and in 3D Road page among BRG (Bearing), SOG (Speed Over Ground), COG (Course Over Ground), STR (Steering), CTS (Course To Steer), TRN (Turning), DTG (Distance To Go), VMG (Velocity May Good), SOA (Speed Of Advance), XTE (Cross Track Error), DRF (Drift), SET, DPT (Depth), TEMP (Water Temperature). When fished press 'ENTER'. The default setting is SOG, COG, DTG, CTS, XTE, STR.
'MENU' + "PAGE" + 'ENTER' + "NAVIGATION DATA" or "3D ROAD" + 'ENTER' then:
'MENU' + "NAV DISPLAY" + 'ENTER' + "Navigation Page" + 'ENTER'

➤ **NMEA Output**

The chartplotter can be connected to external equipment that accepts NMEA-0183 data input. Once attached, the output of NMEA formatted position information can be enabled. The Output NMEA-0183 messages are the following: APA, APB, BOD, BWC, GGA, GLL, HSC, RMA, RMB, RMC, VTG, WCV, XTE. The default setting is Off for all sentences expect for GLL, VTG and APA.
'MENU' + "ADVANCED" + 'ENTER' + "INPUT/OUTPUT" + 'ENTER' + "NMEA Output " + 'ENTER'

➤ **NMEA Output Format**

Disables (Off) or sets the interface among 0183, 0180, 0180/CDX. The default setting is 0183.
'MENU' + "ADVANCED" + 'ENTER' + "INPUT/OUTPUT" + 'ENTER' + "NMEA Output Format" + 'ENTER'

■ **NMEA-0183**

The NMEA-0183 Data Interface Standard was developed by the National Marine Electronics Association of America. It is an international standard that enables equipment from many different manufactures to be connected together and to share information.

➤ **NMEA0183 GPS Port**

Sets the format for the navigation data input Port (GPS). For example to set the Port as NMEA-0183 (4800 Baud Rate, Parity None, 8 Bits Number, 1 Stop Bit and Normal Polarity) you must select 4800-N81-N. The available choice is among (1200-N81-N), (1200-N81-I), (4800-N81-N), (4800-N81-I), (9600-O81-N), (9600-O81-I), (4800-N82-N), (4800-N82-I), (9600-N81-N), (9600-N81-I) or disable (OFF). The default setting is (4800-N81-N).
'MENU' + "ADVANCED" + 'ENTER' + "INPUT/OUTPUT" + 'ENTER' + "NMEA0183 GPS PORT" + 'ENTER'

➤ **NMEA0183 I/O Port**

Sets the format for the navigation data input Port (I/O). For example to set the Port as NMEA-0183 (4800 Baud Rate, Parity None, 8 Bits Number, 1 Stop Bit and Normal Polarity) you must select 4800-N81-N. The available choice is among (1200-N81-N), (1200-N81-I), (4800-N81-N), (4800-N81-I), (9600-O81-N), (9600-O81-I), (4800-N82-N),

(4800-N82-I), (9600-N81-N), (9600-N81-I) or disable (OFF). The <u>default</u> setting is (4800-N81-N).
'MENU' + "ADVANCED" + 'ENTER' + "INPUT/OUTPUT" + 'ENTER' + "NMEA0183 I/O PORT" + 'ENTER'

➤ **Obstructions**

Searches for Nearest Obstructions.
'ENTER' + "FIND" + 'ENTER' + "OBSTRUCTIONS" + 'ENTER'

➤ **OSGB = Ordnance Survey of Great Britain**

A <u>coordinate system</u> describing only Great Britain. Generally used with GBR36 datum, which also describes only Great Britain. This <u>coordinate system</u> cannot be used in any other part of the world.
'MENU' + "DISPLAY" + 'ENTER' + "Coordinate System" + 'ENTER' + "OSGB" + 'ENTER'

➤ **Page**

Selects the screen display configuration you wish: <u>Chart Display</u>, <u>Depth Graph</u>, <u>Depth Graph Full</u>, <u>Navigation Data</u>, <u>3D Road</u>, <u>GPS Status</u>, <u>GPS Data</u>, <u>Wind Data</u>, <u>Wind Speed</u>, <u>Wind Direction</u>.
'MENU' + "PAGE" + 'ENTER'

➤ **Pair**

Selects the pair of stations in the selected <u>chain</u>. The <u>default</u> setting is W X.
'MENU' + "DISPLAY" + 'ENTER' + "Coordinate System" + 'ENTER' + "TD" + 'ENTER' + "Pair"

➤ **Palette**

It is possible to set the palette used to enhance the visibility of the screen depending on the surrounding light condition. The possible choices are Normal, Classic, Night Vision and Sunlight. The <u>default</u> setting is Normal. **Normal** is recommended when the chartplotter is not exposed to the direct sunlight. When this mode is set the maps are displayed in order to use colors as similar as possible to the ones used in the original paper charts. **Classic** is also recommended when the chartplotter is not exposed to the direct sunlight. The colors used are the same colors used on NT cartography. **Night Vision** is recommended when the environment is dark in order to reduce the glare of the display. The chartplotter displays maps and screen in darker colors. **Sunlight** is designed to enhance the visibility of the screen when the chartplotter is exposed to the sunlight. The maps are much brighter than in the other modes and the depth areas are filled with white color so different depth areas are not easily distinguishable.
'MENU' + "DISPLAY" + 'ENTER' + "Palette" + 'ENTER'

➤ **Pan**

Allows you to shift area around the cursor or a remote position to the centre of the screen.
Pan to Cursor: 'MENU' + "FIND" + 'ENTER' + "CURSOR" + 'ENTER'
Pan to Coordinates: 'MENU' + "FIND" + 'ENTER' + "COORDINATES" + 'ENTER'

➤ **Port**

To locate and display the port inserting the name.
'MENU' +"FIND" + 'ENTER' + "PORT" + 'ENTER'

■ **Port Info**

The Port Info function is a combination of a new Port Info database containing all the relevant Safety and Navigational information normally found in good pilot books and a new presentation software which displays special Port Facility Symbols.

➤ **Port Services**

To locate and display the nearest available facilities of a particular type (i.e. the nearest Hospital, sailmaker, bank, etc.).
'MENU' +"FIND" + 'ENTER' + 'PORT SERVICES' + 'ENTER'

➤ **Ports & Services**

Turns On/Off the displaying of Ports and Services (areas along shore with facilities for mooring, downloading and uploading of ships, generally sheltered from waves and winds. Port installations are piers, wharves, pontoons, dry docks, cranes...). The <u>default</u> setting is On.

**'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Port & Services" + 'ENTER'**

➤ **Position Filter**

Turns On/Off the Position Filter. In case of a jittering fix this option makes the ship' position more stable and the track smoother. The <u>default</u> setting is Off.
'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS + 'ENTER' + "Position Filter" + 'ENTER'

➤ **Printer Output**

'MENU' + "ADVANCED" + 'ENTER' + "INPUT/OUTPUT" + 'ENTER' + "Printer Output" + 'ENTER'
Press and hold down the right hand <u>soft key</u> (see par. 2.7 and 7.5 for more information).

➤ **R/B**

Displays on the screen a dotted line and a circle (see Par. 4.3).
'ENTER' + "R/B" + 'ENTER' + 'Aᴄᴄᴇᴘᴛ'

➤ **Rivers & Lakes**

Turns On/Off the displaying of Rivers and Lakes. The <u>default</u> setting is On.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "LAND SETTINGS" + 'ENTER' + "Rivers & Lakes" + 'ENTER'

➤ **Road Data = 3D Road (page)**

The Road Data page shows in graphic mode navigation data.
'MENU' + "PAGE" + 'ENTER' + "3D ROAD" + 'ENTER'

or

press any soft keys + 'Rᴏᴀᴅ' (if it is present)
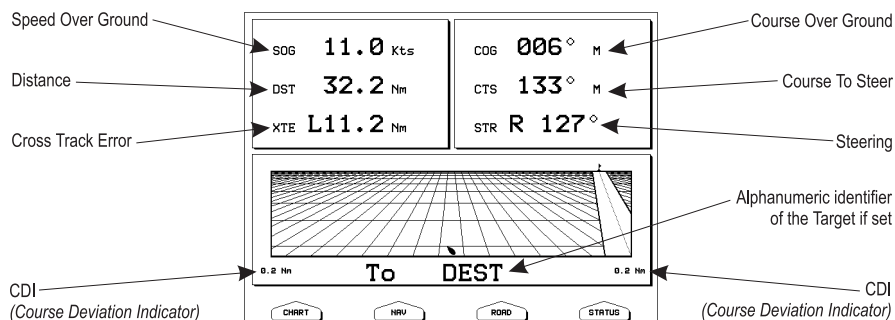
Fig. 5f - Road Data page

➤ **Route**

Sequence of <u>Waypoints</u> connected by segments. Among the available routes, only one is the active route, which is shown by a straight line and arrows to indicate the direction. The first <u>Waypoint</u> of the active route is surrounded by a circle (see Par. 4.1.1).
Select Route: 'MENU' + "ROUTE" + 'ENTER' + "SELECT" + 'ENTER' + select route number + 'Sᴇʟᴇᴄᴛ'
Delete Route: 'MENU' + "ROUTE" + 'ENTER' + "DELETE" + 'ENTER'
Route Report: 'MENU' + "ROUTE" + 'ENTER' + "REPORT" + 'ENTER'
Route Color: 'MENU' + "ROUTE" + 'ENTER' + "COLOR" + 'ENTER'

➤ **Screen Amplifier**

The Screen Amplifier function allows, when it is On and Home mode is set, to place map on the screen related to the fix position and direction, so the map shown is that before the ship. The <u>default</u> setting is On.
'MENU' + "DISPLAY" + 'ENTER' + "Screen Amplifier" + 'ENTER'

➤ **Seabed Type**

Turns On/Off the displaying of Seabed Type. The <u>default</u> setting is On.
'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Seabed Type" + 'ENTER'

■ **Simulation**

Used in order to use your chartplotter without input data. It generates a display with a moving vessel, so that you can practice using the controls in safety.

➤ **Simulation Mode**

The activation of Simulation Mode is possible only if required values have been inserted. The <u>default</u> setting is Off.
'MENU' + "ADVANCED" + 'ENTER' + "SIMULATION MODE" + 'ENTER' + "Simulation Mode" + 'ENTER'

➤ **Simulation Mode (menu)**

Enables/disables <u>Simulation Mode</u>; it is possible to insert desired values for <u>Speed</u>, <u>Heading</u>, <u>Date</u> and <u>Time</u> and selects the <u>Cursor Control</u> function.
'MENU' + "ADVANCED" + 'ENTER' + "SIMULATION MODE" + 'ENTER'

■ **SNR = Signal to Noise Ratio**

The ratio of the magnitude of a signal that of the noise (interference).

■ **Soft key**

The four soft keys are called "soft" because they can have different functions when you select different modes of operation. These keys do not have labels printed on them, but the labels for the currents functions are displayed on the screen above the keys.

■ **SOG = Speed Over Ground**

A calculation of the rate of movement of the ship over the ground.

■ **Speed**

The current velocity at which you are travelling, relative to a ground location.

➤ **Speed (Simulation)**

Sets the value for speed in the <u>Simulation</u> mode. The default setting is 01.0 Kts.
'MENU' + "ADVANCED" + 'ENTER' + "SIMULATION MODE" + 'ENTER' + "Speed" + 'ENTER'

➤ **Speed (Unit)**

Sets the <u>speed</u> unit among Kts = knots, Mph = miles per hour e Kmh = kilometers per hour. The <u>default</u> setting is Kts.
'MENU' + "GENERAL" + 'ENTER' + "Dist & Speed Units" + 'ENTER'

➤ **Speed Filter**

Turns On/Off the Speed Filter. When it is On, you can filter the <u>speed</u> of the ship, to optimize it. The <u>default</u> setting is Off.
'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS + 'ENTER' + "Speed Filter" + 'ENTER'

➤ **Static Navigation**

Sets up a threshold for the <u>speed</u>. When the <u>speed</u> received from the positioning device is under that threshold, the chartplotter displays zero. The <u>default</u> value is On.
'MENU' + "ADVANCED" + 'ENTER' + "FIX & COMPASS" + 'ENTER' + "Static Navigation" + 'ENTER'

■ **STR = Steering**

The difference between <u>COG</u> and <u>CTS</u>. If COG is 25° and CTS is 30°, then STR is 5° Right.

➤ **Target**

In order to tag on the chart the point, towards which the ship is Heading, you can use a special mark, called Target. When the Target is placed, all navigation data are referred to this Target (see Par. 3.2, 3.3).

Insert Target : 'ENTER' + "GOTO" + 'ENTER'
Delete Target : place cursor on Target + 'Stop' + 'Confirm'
Switch navigation to next/previous Waypoint : place cursor on Target + 'Next'/'Prev'

➤ TD = Time Difference

Loran-C positions are determined by precise timing of the intervals between reception of pulses transmitted by pairs of stations in the selected chain. Between any two stations a ship must be located somewhere along a line of possible positions where the measured Time Difference, TD, between arrival of pulses from those stations would be observed. The TD is measured from the time of reception of the master station signal to the time of reception of the slave station signal. To select the TD menu.
'MENU' + "DISPLAY" + 'ENTER' + "Coordinates System" + 'ENTER' + "TD" + 'ENTER'

■ Tide

The periodic rise and fall of the surface of oceans, bays, etc., due principally to the gravitational interactions between the Moon and Earth.

■ Tide Info

The Tide Info feature is the combination of a new tide heights database that will be included within new C-CARDs and new features which calculate the tide graph for all primary and secondary ports world-wide. This function can calculate the tide heights for any past or future date and as a by-product of this calculation will also display the Maximum and Minimum Tide height and time for the day selected plus the times of Sunrise and Sunset. At some chart levels, the chartplotter will display a new Tide Diamond Symbol for every Port or tide point in the database covered by that particular C-CARD.

➤ Tide Stations

To locate and display the nearest information on Tide variation on a specific geographical area.
'MENU' + "FIND" + 'ENTER' + "TIDE STATIONS" + 'ENTER'

➤ Tides & Currents

Turns On/Off the displaying of Tides and Currents. The default setting is On.
'MENU' +"MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Tides & Currentes" + 'ENTER'

➤ Time (Simulation)

Sets the time of the simulated fix.
'MENU' + "ADVANCED" + 'ENTER' + "SIMULATION MODE" + 'ENTER' + "Time" + 'ENTER'

➤ Time Format

Sets you preferred time between 12 hour and 24 hour. The default setting is 24 hour.
'MENU' + "GENERAL" + 'ENTER' + "Time Format" + 'ENTER'

■ Time Line

The location where the ship will be after the time set by the user.

➤ Time Reference

Sets UTC or Local Time. The default setting is UTC.
'MENU' + "GENERAL" + 'ENTER' + "Time Reference" + 'ENTER'

➤ Track

As long as the chartplotter is connected to a positioning instrument, it stores all points in its memory. The chartplotter can store a fix when the distance from its last stored position is greater than a defined distance or after a defined time. A line connects such points and represents the past course, called the track of the ship.
Track storing ON/OFF: 'MENU' + "TRACK" + 'ENTER' + 'Activate'
Delete Track : 'MENU' + "TRACK" + 'ENTER' + "DELETE" + 'ENTER' + 'Whole'/'Begin'/'End'
Select Track Settings menu: 'MENU' + "TRACK" + 'ENTER' + "CONFIG" + 'ENTER'

➤ **Tracks & Routes**

Turns On/Off the displaying of Tracks and Routes (recommended and established routes for ships at sea, including traffic separation schemes, deep water routes, ...). The default setting is On.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Tracks & Routes" + 'ENTER'

■ **TRN = Turning**

The difference between COG and BRG. If COG is 80° and BRG is 75°, TRN is 5° Left.

■ **TTG = Time To Go**

The estimated time needed to reach your destination, based on your current speed and the distance to destination.

➤ **Underwater Objects**

Turns On/Off the displaying of Underwater Objects. (Diffuser, Obstruction, Wreck, Cable - submarine, Cable area, Pipeline area, Pipeline - submarine/on land. The default setting is On.

'MENU' + "MAP" + 'ENTER' + "CUSTOMIZE MAP" + 'ENTER' + "MARINE SETTINGS" + 'ENTER' + "Underwater Objects" + 'ENTER'

➤ **User C-CARD**

The chartplotter uses the optional user C-CARD to save user data: it is a convenient medium to store and retrieve your information. Before a new user C-CARD can be used, you must format it. The formatting function initializes the user C-CARD and prepares it for storing information. Remember that if an user C-CARD is not blank, formatting it will destroy any data already present on the user C-CARD (the user C-CARDs must be formatted in order to be reused, this operation means all old data memorized on the user C-CARD will be lost). Data stored on user C-CARD are grouped in files.

'MENU' + "MEMORY CARD" + 'ENTER'

■ **User Point**

Place on the chart identified by its coordinates and displayed on the screen with a reference symbol (see Mark, Waypoint and Event).

➤ **User Points**

Turns On/Off/Icon the displaying of the User Point Name. The default setting is On.

'MENU' + "DISPLAY" + 'ENTER' + "User Points" + 'ENTER'

➤ **User Points (Find)**

Finds the User Point in the map.

'MENU' + "FIND" + 'ENTER' + "USER POINTS" + 'ENTER'

➤ **User Points (List)**

Displays the User Points List page on the screen (see Par. 4.1.2.8).

'MENU' + "USER POINTS" + 'ENTER'

■ **UTC = Universal Time Coordinated**

A time scale based on the rotation of the earth that is used by most broadcast time services.

➤ **UTM = Universal Transverse Mercator**

Metric Grid system used on most large and intermediate scale land topographic charts and maps.

'MENU' + "DISPLAY" + 'ENTER' + "COORDINATE SYSTEM" + 'ENTER' + "UTM" + 'ENTER'

➤ **Waypoint**

Any point to which one intends to navigate. A sequence of Waypoints makes up a route plan (see Par. 4.1.2).

Inserting Waypoint: 'ENTER' + "WAYPOINT" + 'ENTER'

Moving Waypoint: Place cursor on existing Waypoint + 'MOVE' + move cursor + 'ACCEPT'

Deleting Waypoint: Place cursor on existing Waypoint + 'DELETE' + 'CONFIRM'

Editing Waypoint: Place cursor on existing Waypoint + 'EDIT'

Inserting Waypoint: Place cursor on route leg + 'INSERT' + move cursor + 'ACCEPT'
Finding Waypoint: 'MENU' + "FIND" + 'ENTER' + "USER POINTS" + 'ENTER'

■ **WGS-84 = World Geodetic System 1984**

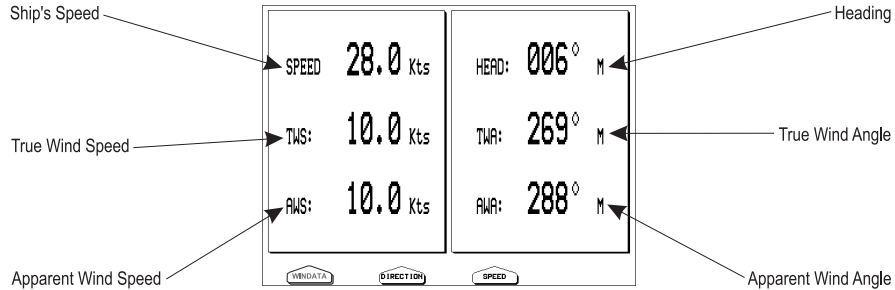<u>Coordinates System</u> or <u>Datum</u> developed by the Defense Mapping Agency (DMA).

➤ **Wind Data (page)**

Shows data and graphics referred to the true or apparent wind.
'MENU' + "PAGE" + 'ENTER' + "WIND DATA" + 'ENTER'
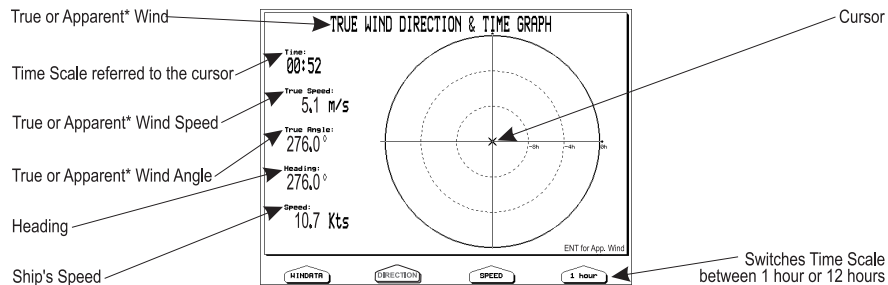or
press any soft keys + 'WINDDTA' (if it is present)

Fig. 5g - Wind Data page

'MENU' + "PAGE" + 'ENTER' + "WIND DIRECTION" + 'ENTER'
or
press any soft keys + 'WINDDIR' (if it is present)

Fig. 5h - Wind Direction page

*Press 'ENTER' to switch between True or Apparent Wind visualization.

'MENU' + "PAGE" + 'ENTER' + "WIND SPEED" + 'ENTER'
or
press any soft keys + 'WINDSPD' (if it is present)

True or Apparent* Wind

Time Scale referred to the cursor

True or Apparent* Wind Speed

True or Apparent* Wind Angle

Heading

Ship's Speed

Cursor

Switches Time Scale between 1 hour or 12 hours

TRUE WIND SPEED & TIME GRAPH

Time:
00:52

True Speed:
5.1 m/s

True Angle:
276.0°

Heading:
006°

Speed:
10,7 Kts

ENT for App. Wind

WINDATA   DIRECTION   SPEED   1 hour
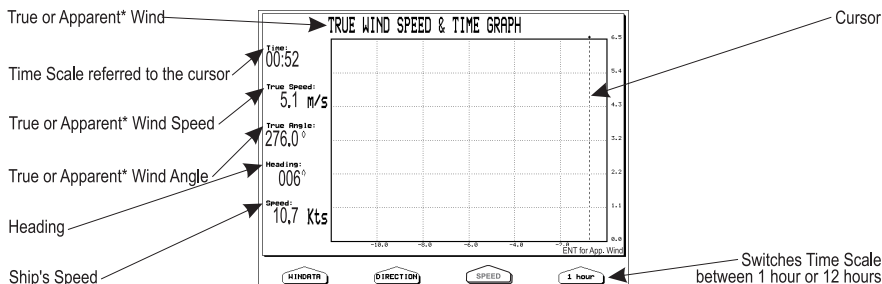
Fig. 5i - Wind Speed page

*Press 'ENTER' to switch between True or Apparent Wind visualization.

➤ Wrecks

Searches for Nearest Wrecks.

'ENTER' + "FIND" + 'ENTER' + "WRECKS" + 'ENTER'

➤ XTE Alarm

Disables the XTE Alarm (Off) or selects the desired value. The default setting is Off.

'MENU' + "ALARMS" + 'ENTER' + "XTE ALARM" + 'ENTER'

■ Zoom-In

Shows more detail in a smaller area. Expands map scale; scale value is refreshed. When Plotter Mode option is set On from the map configuration setup, it allows zooming into map scales not covered by cartographic details. Pressing and holding 'ZOOM IN' allows fast zoom function.

■ Zoom-Out

Operates similarly to zoom -in, but in the reverse, showing a wider but less detailed view. Compresses map scale; scale value is refreshed. When Plotter Mode option is set On from the map configuration setup, it allows zooming into map scales not covered by cartographic details. Pressing and holding 'ZOOM OUT' allows fast zoom function.

6

For the Technician

6.1   TECHNICAL SPECIFICATIONS

- **Power consumption**   : 15 Watt max, 10 - 35 Volt dc
- **Interface**   : NMEA0183
- **Autopilot Interface**   : NMEA-0180,   NMEA-0180/CDX,
                                      NMEA-0183
- **Display Resolution**   : 640 x 480 pixels
- **Cartography**   : **C-MAP NT$^+$ C-CARD**
- **Operating temperature range** : 0/+55 degrees Celsius
- **Memory**   : Non volatile with battery back-up
- **Keyboard**   : Silicon rubber, backlight
- **Weight**   : 950 gr.
- **Accessories**   : External Bracket
                                      Power I/O cable CBC0FS0709
                                      I/O cable CBC0FS0603
                                      Display adapter cable CBCHMS0700
                                      Fuse 1A (2 pcs) + cable fuse holder (2 pcs)
                                      User Manual
                                      Quick Guide

• **Dimensions:** (mm[inch]):

33.3 (1.3")   51.1 (2")

172.5 (6.8")

140 (5.5")

95 (3.7")

106.5 (4.2")

11.5 (0.5")

143.5 (5.6")
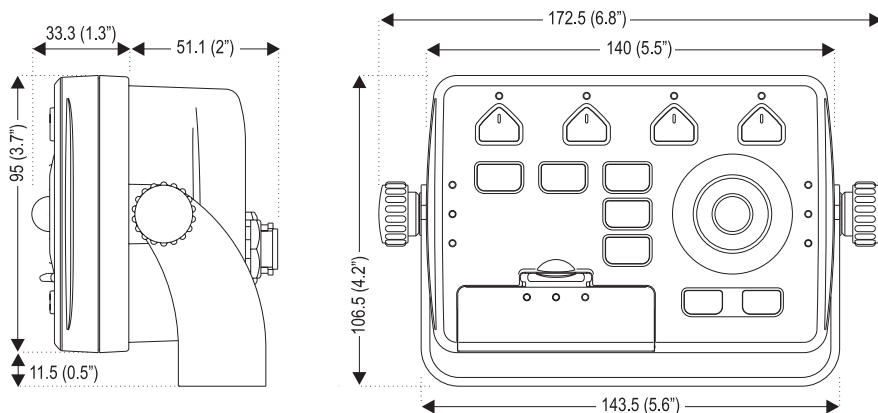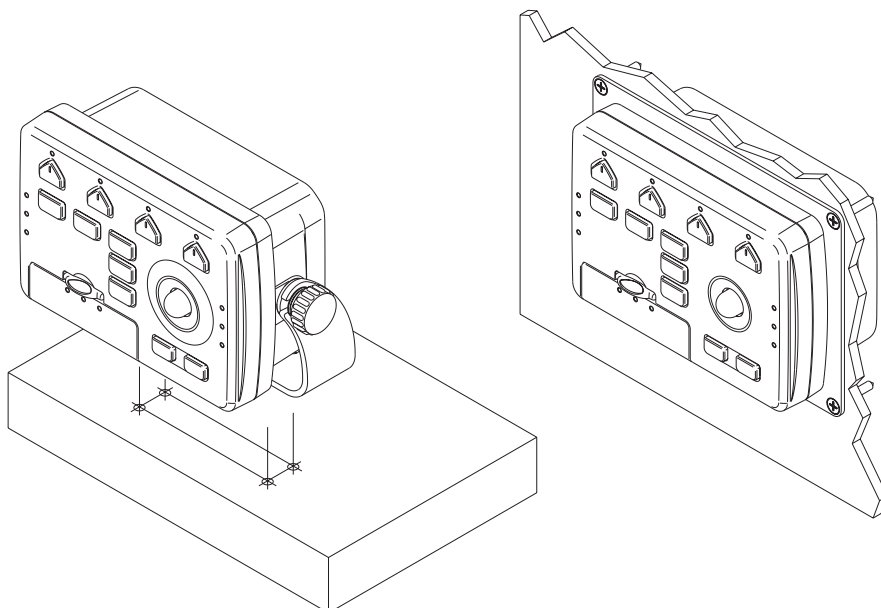
6.2 INSTALLATION

Fig. 6.2 - Chartplotter installation

After having chosen the installation type, connect the chartplotter to the power supply.

6.3 EXTERNAL WIRING

VIDEO
PIN OUT
1) GND
2) VCC
3) R
4) G
5) B
6) HSYNC
7) VSYNC
8) N.C.
9) BRIGHTNESS

VIDEO OUT

GPS

POWER & I/O

1) GPS+ (10-35 V) RED
2) GPS RX GREEN
3) GPS TX BROWN
4) N. C. GRAY
5) N. C. WHITE
6) GND BLACK /YELLOW/SHIELD

GPS
PIN OUT
1) GPS+ (10-35 V)
2) GPS RX
3) GPS TX
4) N. C.
5) N. C.
6) GND
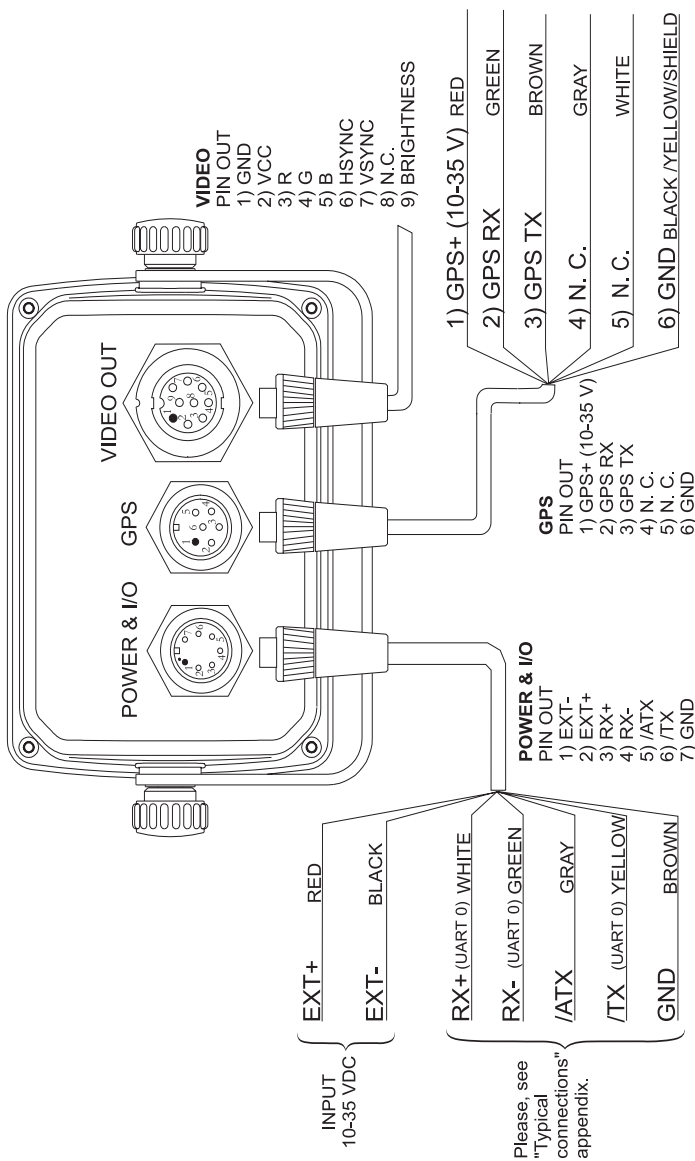
Note: Black, Yellow and Shield wire are connected together on Pin No. 6.

POWER & I/O
PIN OUT
1) EXT-
2) EXT+
3) RX+
4) RX-
5) /ATX
6) /TX
7) GND

EXT+ RED
EXT- BLACK
RX+ (UART 0) WHITE
RX- (UART 0) GREEN
/ATX GRAY
/TX (UART 0) YELLOW
GND BROWN

INPUT
10-35 VDC

Please, see
"Typical
connections"
appendix.

6.4 TYPICAL CONNECTION-"POWER&I/O"CONNECTOR

INPUT (POSITIONING DEVICE)

I/O

7 PIN
CONNECTOR

CHART PLOTTER
EXTERNAL VIEW

RX SIGNAL   WHITE

RX RETURN   GREEN

NOTE: POSITIONING DEVICE = GPS, LORAN, ECC.

OUTPUT (AUTOPILOT)

I/O

7 PIN
CONNECTOR

CHART PLOTTER
EXTERNAL VIEW

TX RETURN   BROWN

TX SIGNAL   GRAY
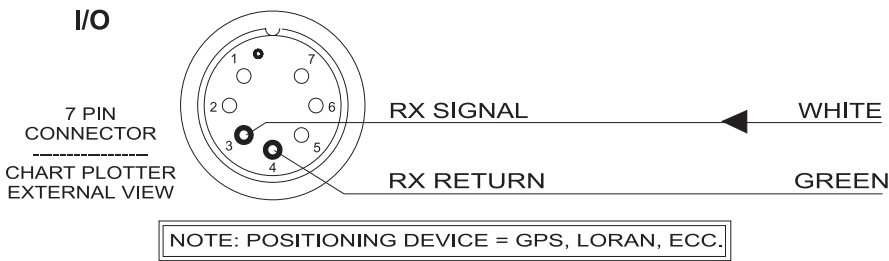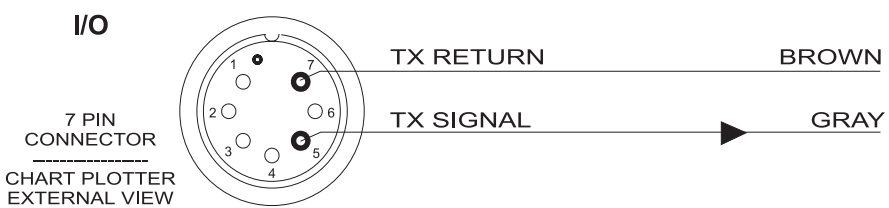
INPUT/OUTPUT (BIDIRECTIONAL COMMUNICATION)

I/O

7 PIN
CONNECTOR

CHART PLOTTER
EXTERNAL VIEW

TX RETURN   BROWN

TX SIGNAL   YELLOW

RX SIGNAL   WHITE

RX RETURN   GREEN
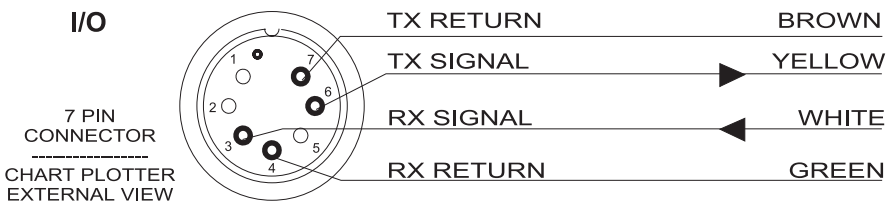
NOTE:
Wire colors are referred to the supplied 7-wires cable.

GPS SENSOR (10-35)

GPS PORT

I/O	GPS POWER +	RED
	GPS POWER -	BLACK
6 PIN CONNECTOR	RX SIGNAL	BROWN
---------------	TX SIGNAL	GREEN
CHART PLOTTER EXTERNAL VIEW	RX/TX RETURN	YELLOW
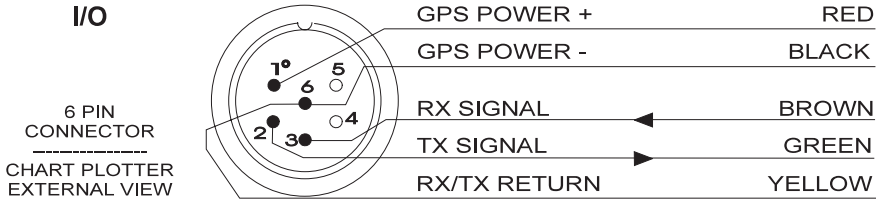
NOTE:

Wire colors are referred to the supplied 6-wires cable.

WARNING ! ! !

The "GPS Port" on this unit supplies a 10-35Vdc voltage (on pin 1) to power a GPS Sensor.

Caution
Do not attempt to connect a 5Vdc GPS Sensor to this port as the over voltage will cause serious damage to the GPS Sensor.
If you have any doubts as to the GPS Sensor operating voltage, please contact your local agent before you complete this installation.

GPS

1) GPS+ (10-35 V)

6 PIN CONNECTOR

CHART PLOTTER
EXTERNAL VIEW
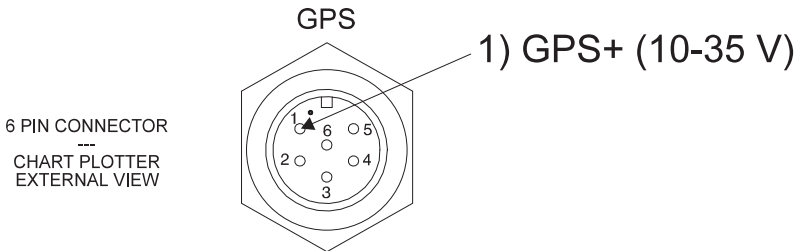
6.5   PRINTER SETTINGS

6.5.1 PRINTING ON SERIAL PRINTER

The printer must be connected to the chartplotter via a serial cable with 2 wires from the 7 Pin Conxall Connector as shown in the following figure:

POWER & I/O PORT

PRINTER RX (YELLOW)

RS232C - DB 25 female

13 12 11 10 9 8 **7** 6 5 4 **3** 2 1
25 24 23 22 21 20 19 18 17 16 15 14

7 PIN MALE CONNECTOR
CHART PLOTTER EXTERNAL VIEW

PRINTER GND (BLACK)

SERIAL PRINTER CONNECTOR
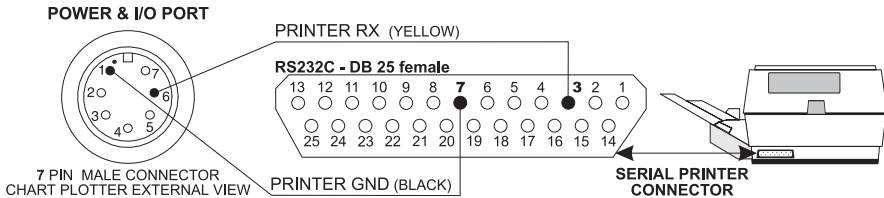
The printer serial interface RS232 must be set as follows:

- 8 bit data
- 1 stop bit
- no parity
- 9600 Baud Rate (see Note)
- Data protocol: Ready/Busy
- Carrier detect   :   Disabled
- Clear to send   :   Disabled
- Data set ready: Disabled
- CR definition   :   CR only
- LF Definition: LF only
- Page Length: 11"

6.5.2 PRINTING ON PARALLEL PRINTER

The printer must be connected by using a serial to parallel converter.

POWER & I/O PORT

PRINTER RX (YELLOW)

RS232C - DB 25 female

13 12 11 10 9 8 **7** 6 5 4 3 **2** 1
25 24 23 22 21 20 19 18 17 16 15 14

7 PIN MALE CONNECTOR
CHART PLOTTER
EXTERNAL VIEW

PRINTER GND (BLACK)

CENTRONICS CONNECTOR

SERIAL to PARALLEL CONVERTER CONNECTOR
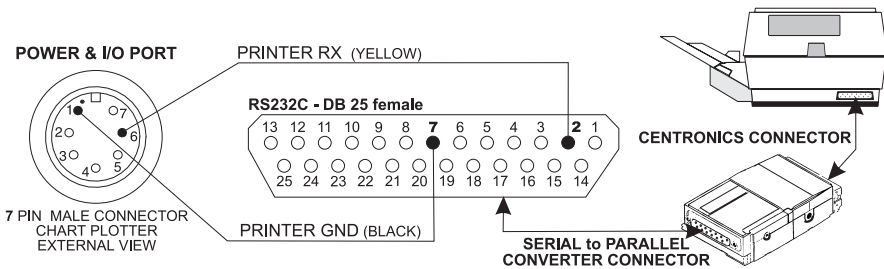
The serial to parallel converter must be set as follows:

- 9600 Baud Rate (see Note (*) at the end of the paragraph)
- Handshake :   XON/XOFF
- Data Lengt :   8"
- Parity   :   none
- Direction   :   S-P

This setting depends on the selection of printer output Baud Rate done in the chartplotter. It is recommended to use the maximum Baud Rate (9600) to reduce the time necessary for printing.

The printer should be compatible with the following formats:
- EPSON LQ 2500
- IBM PROPRINTER XL24 in AGM mode.

6.6 SYSTEM TEST

If you have connected your position-finding device according to the instructions, and chosen the proper menu selection for your device, and are still having problems with your chartplotter, the extended auto-test should help determine the problem. Make sure the chartplotter is turned Off. While pressing and holding any other key, turn the chartplotter On. A new menu will appear on the display:
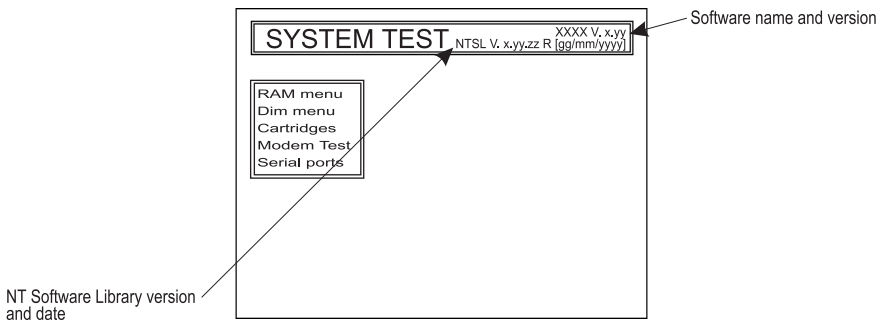
Fig. 6.6 - System Test

Select the desired test: this will display in reverse video and with the relative menu window. To choice the test press 'ENTER'. To exit from any submenu press 'CLEAR'. To exit from the System Test turn Off the chartplotter.

6.6.1 RAM MENU

This test verifies the integrity of the memories and if desired during this test all the internal memory can be erased and the <u>default</u> setting restored.

■ **RAM Test**
To verify the integrity of the RAM. If on the screen the message "ERROR" appears, the RAM is physically damaged.

- **RAM Clear**
  To clear internal memory. If the chartplotter exhibits unusual behaviour, or appears to be malfunctioning, it may be possible to correct the problem by clearing RAM.
  This operation will erase all <u>Marks</u>, <u>Events</u>, <u>Routes</u>, stored <u>track</u> plots and destinations. It will also return all selections (Input Data Format, Autopilot selection, etc.) to original <u>default</u> values. To confirm to clear RAM press 'ENTER' again (but if at this time you do not wish to clear RAM press 'CLEAR').

6.6.2 DIM MENU

To select the desired value for brightness and keypad light.

- **Brightness**
  Each time you pressed the joystick to right, the screen will decrease brightness, instead of to left it will increase brightness.

- **Keys Light**
  To set the keypad light. Operates in similar mode as Brightness.

6.6.3 CARTRIDGES

To check the C-CARD and its connector.

- **Background ROM**
  To test the WorldWideBackground. If there is not a malfunction, the code of the Background and the message "OK" are shown, but if the Background is defective the message "Faulty" is shown.

- **C-CARD Test**
  To test the C-CARD. There are the following possible situations:
  1. if there is a C-CARD inserted in the slot and there is not a malfunction, the name of the C-CARD zone and the message "OK" are shown.
  2. if there is a C-CARD inserted in the slot, but it is a damaged C-CARD, the name of the C-CARD zone and the message "Faulty" are shown.
  3. if there is not any C-CARD inserted in the slot, the message "not present" is shown.
  4. if there is an <u>User C-CARD</u> inserted in the slot, the message "USER C-CARD" is shown.

- **C-CARD Connector**
  Indicates if there is a malfunction in the connector. It is used only in production.

6.6.4 MODEM TEST

To check the Modem connections.

6.6.5 SERIAL PORTS

If you are having problems receiving data from the position-finding instrument, this test should help determine the problem.

■ **Change Parameters**
To change the parameters of the serial interface. This menu allows to select the **Port** (Signal Source) between UART0 or UART1, the **Baud Rate** between 4800 or 9600, the **Data Bits** (Word Length) between 7 or 8, the **Parity** between even, odd or none, the **Stop Bits** between 1 or 2, the **Polarity** between "+" or "-". <u>Default</u> settings are: Port = UART1, Baud Rate = 4800, Data Bits = 8, Parity = none, Stop Bits = 1, Polarity = +.

■ **Input Data Display**
To allow the chartplotter to act as a computer terminal and display the incoming data exactly as it received. If the data displayed on the screen is unrecognizable, you may have selected the wrong input parameters for your particular receiver. Check your receiver manual to be sure that you have selected the proper interface format. If the screen is blank, you may have a broken connection, and no data is being received.
Use 'ZOOM IN' to stop (or continue after pause) data displaying, 'ENTER' to show data in hex or ASCII mode (normal or small) and 'CLEAR' to exit.

A

C-Forecast

C-Forecast is a innovative meteorological forecasting system with the ability to visualise the weather forecast, for a given area, directly on to the area related cartography on a chart plotter. The weather data is transferred very quickly to the plotter thanks to C-COM, a device for data-transfer via GSM developed by C-MAP. In order to access the C-Forecast, it is necessary to set up a subscription, the only other cost is the GSM-call to the remote weather report server, lasting normally less than a minute.

It's possible to receive forecast regarding the wind, speed and direction, as well as the height of the waves in the area. The weather data will be visualised directly onto the plotter screen superimposed on to the C-MAP NT⁺ cartography for the area.

In order to access the C-Forecast, it is necessary that the plotter has got the software needed to make the connection through the GSM-modem (C-COM) with the weather data server.

The area covered by the weather information is determined by the either the actual position and heading, given by the onboard GPS or entered manually by the user. The user variable features can be pre-set through the C-Forecast menu on the plotter (see Fig. A) as well as the level of details (to see the area covered by the C-Forecast, please refer to the c-forecast.c-map.com web site).

The weather forecast is covering a period of 48-hours, within which the user can collect the information for any period of 6 hours (example: at 2pm on the 21st of March 2002 a user's request a weather forecast, the forecast will cover the period for the following 6 hours based on the predicted weather situation at the time of collection, ending at 8pm on the 21st of March 2002). The weather information on the C-Forecast server is reviced every hour, covering the following 48 hours.
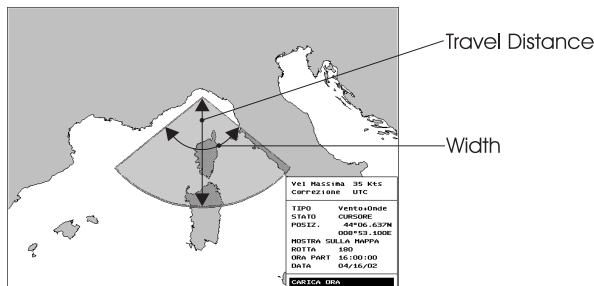
Fig. A - Preview of the area covered by the requested weather forecast

The coverage of the weather forecast in each instant is determined by the maximum speed of the boat given at the time of subscription (see Fig. A and table Aa below).

Coverage of the forecasting area		
Maximum Speed (Knt)	Width in Degree	Travel Distance (Nm)
5	160	30
10	150	60
15	140	90
20	130	120
25	120	150
30	110	180
35	100	210
40	90	240

Fig. Aa - table of the area covered by the forecast

A.1   PRESENTATION OF DATA

The information received from the weather data server consists of two type of information which will be shown on the plotter screen, represented by two different icons, one relating to wind and the other to waves.

The icon for wind is a circle with an arrow pointing towards the center where the arrow represents the direction of the wind, you will also see a number this represents speed (shown in units according to measurements preset by the user) (see the left column in Fig. A.1). It is possible to preset an upper limit for the wind speed and connect this limited to an alarm which will alert and request navigator action (see the right column in

Fig. A.1). The colour of the wind icon will change to red when the wind speed limited has been reached (preset by the user in the menu).

Fig. A.1 - Wind icon in condition Normal (left) and condition alarm (right)

The icon for the waves is a circle with a number representing the height of the waves (shown in units according to measurements preset by the user), see the left column of Fig. A.1a. It is possible to preset an upper limit for the height of the waves, and connect this limited to an alarm which will alert and request navigator action (see the right column in Fig. A.1a). The colour of the wave height icon will change to red when the height limited has been reached (preset by the user in the menu).

Fig. A.1a - Waves icon in condition normal (left) and condition alarm (right)

The weather information received from the C-Forecast server is saved in the chart plotter's memory. The information can be accessed and used in two ways. By using the chart plotter in "navigation" mode or in "browse" mode (see Fig. A.1.1).

For every point for which forecast data have been collected, the information saved to memory contains the data for the subsequent 6 hours from collection time. The area coverage by the weather forecast in each instants is determent by the maximum speed of the boat given at the time of subscription.

For every point to which weather data have been received, the predictions will cover the maximum travel distance if departure happens at the same time as receipt of the weather data, and the travel speed is at the maximum speed given for the full 6 hours. The significance of this is that there is no need for collecting further information from the C-Forecast server, until the last of the 6 hours covered by every circle. As you can see from Fig. A.1b, by every point of collection the travel time covered is reduced by an hour until the last hour where you will obtain a new prediction covering the following 6 hours.

Hours of Navigation	Hours covered by the forecast
1[a]	6
2[a]	5
3[a]	4
4[a]	3
5[a]	2
6[a]	1

Fig. A.1b - Table Hours of coverage by the weather forecast

A.1.1 PRESENTATION OF WEATHER INFORMATION

A.1.1.1 Viewing the information in Navigation mode

The Navigation mode allows the user to view on screen, the weather information superimposed directly onto the cartography (the wind or the waves – not simultaneously); the area shown is relative to the position of the boat (plotted by the onboard GPS or in simulation mode given by the simulator). The data is relative to the time of day and information received or simulated. The type of information shown on the screen depends on option chosen by the user in menu: Video settings - the 3 options are: no information, wind and waves. The information shown is presented as a series of icons - wind or waves.

The amount of icons shown on the screen depends on the position at which the information was collected from the C-Forecast server and the maximum travel speed.

- Example 1: If the boat is traveling at max speed all the icons will show up on the screen.
- Example 2: If the boat is laying still without moving position, no icons will show.

If the boat travels at maximum speed to reach the area covered by the information of the 6th hour, the related information will show on screen. However if the boat arrived at the area covered by the "6th hour information", after the 6th hour, no information would show, - the information saved in memory is regarded not up-to-date by the plotter after the 6th hour, and new weather information will have to be collected from the C-Forecast server.
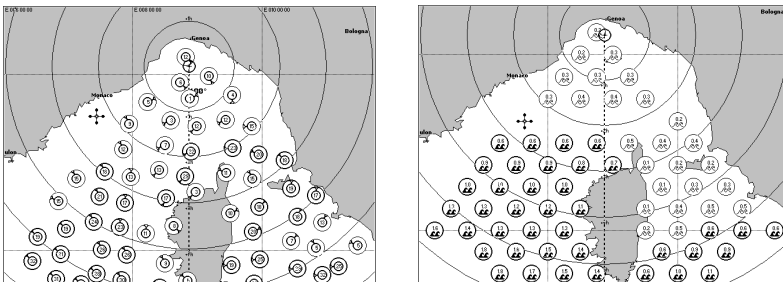
Fig. A.1.1.1 - Mode Navigation: icons showing wind (left) and the icons for waves (right)

A.1.1.2 Viewing the weather information in Browse mode

Using the Browse mode allows the user to view on screen (superimposed onto the cartography) the information related to wind or waves, by directly choose the time and area covered by the information to evaluate the information.

To activate the Browse mode, simply choose in the menu - preview. As soon as the user has activated Browse mode, the cartography center around the point to which weather information have been collected and saved. It is possible to use the cursor to move the "view" around the area covered by the 6 hour weather forecast and change the view between wind and waves.
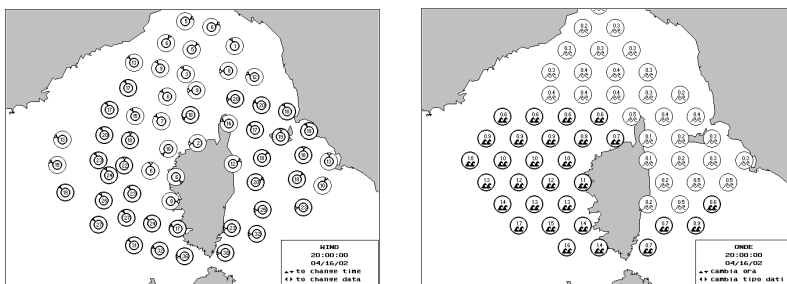
Fig. A.1.1.2 - Mode Browse, icons for wind (left) and icons for waves (right)

A.2   SYSTEM SET-UP C-FORECAST

To set-up and access the C-Forecast weather forecasting system a series of steps must be completed. Please read the following carefully:

- Sign up for subscription with C-Forecast to be able to access the service. Contact the local reseller or contact directly your local office of C-MAP.

- Connect the chart plotter with the C-COM module.

- Insert the GSM SIM cart into the C-COM module (SIM-card not included).

- The chart plotter has two serial connections ports for exchange of data. Choose one of these to make the connection to the C-COM module.

- Open set-up in the menu of the chartplotter and insert the identification code of the subscription (included in the subscription documentation received from C-MAP).

- Insert also the telephone number for the C-Forecast server (also included in the subscription documentation received from C-MAP).

- Remember also to insert the SIM PIN number (received together with the SIM-card).

When the above steps have been completed, it will immediately be possible to receive weather information from the C-Forecast server in the following way:

- Insert the position from where the boat will depart (manually or by use of the GPS).

- Insert the direction in which the boat will travel.

 - Insert the date and time of departure (ETA).

 - Start the transfer of weather information.

A.2.1 INSTALLATION OF HARDWARE COMPONENTS

A.2.1.1 Electrical connection

The data connection between the C-COM module and the chartplotter is done by

---

using a serial port (it is possible on some chartplotter to a port of your choice).
To make the electrical connection refer to following Fig. A.2.1.1.

POWER I/O CABLE

WIRE COLOR	FUNCTION
RED	EXT+
BLACK	EXT-
WHITE	RX+ (UART 0)
GREEN	RX- (UART 0)
GRAY	ATX+
YELLOW	TX+ (UART 0)
BROWN	GND

C-COM CABLE

WIRE COLOR	FUNCTION
RED	+10-35 Vdc
BLACK	PWR-
YELLOW	OUTPUT+
BROWN	SIGNAL GND
GREEN	NOT USED
WHITE	INPUT+
GRAY	NOT USED

GPS CABLE

WIRE COLOR	FUNCTION
RED	GPS+ (10-35v)
GREEN	GPS RX
BROWN	GPS TX
GRAY	N. C.
WHITE	N. C.
BLACK/YELLOW/SHIELD	GND/COMMON

C-COM CABLE

WIRE COLOR	FUNCTION
RED	+10-35v
WHITE	INPUT+
YELLOW	OUTPUT+
GREEN	NOT USED
GRAY	NOT USED
BLACK	PWR-
BROWN	SIGNAL GND

POWER & I/O   GPS   VIDEO OUT

Fig. A.2.1.1 - Electrical connection to chart plotters with two ports access

———————————————————————— User Manual

A.2.1.2 Verification of C-COM module: the modem test

The menu Modem Test (can also read SYSTEM TEST*), the test makes it possible to test the verify a connection between the C-COM and the chartplotter.

Note (*) _____

To start the SYSTEM TEST switch on the chartplotter using 'POWER' and any other key.

The Modem Test controls that there is a communication between the chartplotter and the C-COM by for a short time transmitting a serie of diagnostic commands to the C-COM and verify the result.

If the chart plotter is build with two serial ports, it is possible to choose which port to use for connection with the C-COM module.

The diagnostic screen for Modem Test, will show the following information:

a. MODEM OK: #
b. MODEM ERROR: #
c. MODEM TIMEOUT ERROR: #

a. If the number (#) by the MODEM OK shows 0, this show that the connection between the chartplotter and the C-COM module is established and the C-COM is responding correctly. No problems have been found.

b. If the number (#) by the MODEM OK is different to 0, it shows that the connection to the C-COM module has not been made - the C-COM module may be defect.

c. If the number (#) by the MODEM TIMEOUT ERROR is different to 0, it shows that the C-COM module is responding but the link to the chart plotter has not been made. The error may be for one of the following reasons:
- The C-COM is not connected or not connected correctly to the chartplotter.
- The C-COM module has not got a power supply.
- The serial port to which the link between the C-COM and the chartplotter is made, is not the correct port, to which the C-COM should be connected.

A.2.1.3 The GSM SIM-card

The GSM SIM-card must be of a type which will allow data transfer. The SIM-card must be inserted into the SIM-slot in the C-COM module. If the GSM SIM-card need a PIN-code inserted, for the SIM-card to be activated, then this can be done in the C-Forecast operation menu. The chartplotter does not accept deactivation of the PIN-code.

A.2.2 INSTALLATION OF SOFTWARE

A.2.2.1 Registrations of user ID

The user identification number is a string of 16 characters and numbers "####-####-####-####". The character "-" is not a part of the code and is only used to make the code more legible and is not to be inserted.

The code is supplied together with the subscription documents from C-MAP. The registration code can only be used in one (1) chartplotter. The C-Forecast server will associate the code and the chartplotter in which the code was first used. During the connection start-up, the C-Forecast server will compare the registration information and the code identifying the chartplotter and will only connect to a known chartplotter.

Nota

The Registration Code is contained in the chartplotter and can after insertion not be changed by the user. However if the user whish to change the subscription, for the reason of change to an other chart plotter (for example change to and other model or change because of faulty chart) it is nessesary to contact C-MAP directly in order to transfer the subscription to the new char plotter.

A.2.2.2 Inserting the telephone number of the C-Forecast server

The telephone number through which the C-COM will make the connection with the C-Forecast server must be inserted in the menu part, C-Forecast set-up.

A.2.2.3 Activation of the serial port

Some chart plotters are build with more than one serial port it is therefor necessary to choose which port is to be used. The user can do this in the menu part C-Forecast set-up.

A.2.3 TRANSFER OF WEATHER DATA

Before the data transfer can start, it is necessary to insert: Time of departure (ETD), current position (PO) manually or obtained from the GPS and the heading. All the data transfer function are available in the menu C-Forecast, Preview download.

A.2.3.1 Insert current date and time

Normally the chartplotter will receive date and time through the build in or attached GPS or in simulation mode - manually. In case it is necessary to insert the date and time manually, before collection of data from C-Forecast, it is done in the menu C-Forecast, preview, date and time(ETD).

If the date and time are not inserted the server can not provide any information or the transferred information may be of no value for navigation.

A.2.3.2 Selection of an area from which to get weather data

The area covered by the weather data is variable according to the subscription, the point of departure and the heading.

Inserting of point of departure

The point of departure can be set by the user either directly from the GPS position - actual or simulated position, cursor position or insert the graphical coordinates manually.

Inserting heading

The heading represents the central line of the area covered by the weather information. The heading normally received from the GPS, can manually be modified by the user.

A.2.3.3 Selecting type of weather information to be collected

It is possible to select the type of data to be collected between the options below:
- Wind: only the direction and pressure/speed
- Waves: only height
- Wind + Waves: both the above

A.2.3.4 Download of data

If the previous options/settings have been carried out, it is now possible to download the weather information in the menu C-Forecast, download preview.

When the download function is activated, the preview window will close and a window containing the current subscription detail will appear, you can have two types of subscription - Download or Period:

If the subscription is "Period" the C-Forecast server will show the expiry data. Instead if the subscription is "Download" the C-Forecast server will show the remaining number of downloads available and the expiry date. This information can be saved to the chart plotter's memory and the updated information will be shown before each download.

The first time the chartplotter is connected or after a Master Reset the above information is not available: in this case the window will not show any information. At the following collection of weather information, the subscription information will be restored to the system.

Note
The date-format setting can be change by the user, in the chartplotter menu.

Error massages

A window will appear on screen in case of error, with a description of the error.

SIM-card PIN Error

- If the GSM SIM-card in use has PIN-code activation and the PIN-code has not been inserted in the set-up menu of C-Forecast, a message will appear "PIN SIM not entered".

- if the PIN-code inserted is not correct, a message will appear "incorrect PIN SIM".

- if the "incorrect PIN SIM" message appears more than 3 times, a message will appear "incorrect PIN SIM - SIM locked".

Other Errors

Subscription not found (user not registered)
Incorrect Password (for future use)
Incorrect Registration Code
Licence not found
Licence not active
Licence expired
Licence data not yet started
No Download available (only subscription Download)
Subscription not authorised (C-Forecast server not available)
Insufficient number of download available

A.3 MENU SETTINGS

All menu settings are reached from the C-Forecast menu selected from the main Menu. The C-Forecast menu contains the following items: C-Forecast Set-Up, Download Preview and Browse.

A.3.1 C-FORECAST SETUP MENU

From the C-Forecast Set-Up menu it is allowed entering the information specified in the subscription and the other settings relative to the display of the weather information on the map. Once the main Menu is shown on the screen, to select the C-Forecast SetUp menu follow the procedure:

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER'**

The C-Forecast Setup menu is shown on the screen.

A.3.1.1 Display

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER' + "DISPLAY" + 'ENTER'**

Display is the type of weather information to be shown on the map: Wind,

Waves and Off. Wind and waves cannot be displayed simultaneously. The <u>default</u> setting is Off.

A.3.1.2 Wind Speed Alert

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER' + "WIND SPEED ALERT" + 'ENTER'**

Wind Speed Alert is the wind speed above which all icons are drawn in a different color/shape (the color icon becames red when the wind speed excedes the speed limit set by menu). The value can be in the range from 0 to 250 k/h or it can be set Off. The <u>default</u> setting is Off.

A.3.1.3 Waves Height Alert

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER' + "WAVES HEIGHT ALERT" + 'ENTER'**

Waves Height Alert is the wave height above which all icons are drawn in a different color/shape (the color icon becames red when the wave speed excedes the speed limit set by menu). The value can be in the range from 0.1 to 25.0 Mt or it can be set Off. The <u>default</u> setting is Off.

A.3.1.4 Modem Port

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER' + "MODEM PORT" + 'ENTER'**

The possible choices are GPS and Power I/O. The <u>default</u> setting is GPS.

A.3.1.5 Wind Speed Unit

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER' + "WIND SPEED UNIT" + 'ENTER'**

Wind Speed Unit is the unit of measure used for the wind speed display: Kts; m/s; Kph; Bft; Mph. The <u>default</u> setting is Kph.

A.3.1.6 Wave Height Unit

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER' + "WAVE HEIGHT UNIT" + 'ENTER'**

Wave Height Unit is the unit of measure used for the waves height display: Mt, Ft. The <u>default</u> setting is Mt.

A.3.1.7 User Identifier

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER' + "USER ID" + 'ENTER'**

User Id is needed for the data transferring authorization and must match the data provided in the subscription.

A.3.1.8 Telephone Number

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER'+ "TELEPHONE NUMBER" + 'ENTER'**

Telephone Number is the telephone number of the service provider. The maximum length of telephone number is 20 characters.

A.3.1.9 Sim Pin

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER'+ "SIM PIN" + 'ENTER'**

Sim Pin is the PIN of the GSM SIM Card used in the GSM module. The Sim Pin is always shown. The maximum length is 8 digits. The <u>default</u> PIN is an empty string.

A.3.1.10 Max Speed

➤ **"C-FORECAST" + 'ENTER' + "C-FORECAST SETUP" + 'ENTER'+ "MAX SPEED" + 'ENTER'**

Max <u>Speed</u> is the maximum vessel's <u>speed</u> declared in the subscription. The value can be in the range from 5.0 to 40.0 Kts. If a value lower than 5.0 Kts is entered, the chartplotter emits three beeps and sets the value to 5.0 Kts; if the entered value is greater than 40.0 Kts the chartplotter emits three beeps and sets the value to 40.0 Kts. The <u>default</u> setting is 15 Kts.

Note _____
The Max Speed is used to define the area covered by the weather information in the Preview display mode (see Par. A.3.2).
_____

A.3.2 DOWNLOAD PREVIEW

The Preview allows seeing the map area that will be covered by the weather information. Once the main Menu is shown on the screen:

➤ **"C-FORECAST" + 'ENTER' + "DOWNLOAD PREVIEW" + 'ENTER'**

Once the Preview is activated the Main Menu is closed and the map is centered on the vessel's position if received from <u>GPS</u> or simulated. The map scale changes automatically to the zoom level that contains the whole area covered by weather information.

On the screen a sector is shown: the width of the area covered is proportional to the vessel's <u>speed</u> and depends on the maximum vessel's <u>speed</u> declared in the subscription (see Fig. Aa).

Once the Preview function is active a prompt is shown on the map display inside a dedicated window. The user can change the values in the prompt manually. Moving about the selections it's possible to set the starting position coordinates between Fix and Cursor. Max <u>Speed</u> and Local Time Offset are shown and cannot be changed.

A.3.2.1 Type

➤ **"C-FORECAST" + 'ENTER' + "DOWNLOAD PREVIEW" + 'ENTER'+ "TYPE" + 'ENTER'**

Type determines the type of data downloaded from the server. Type can be set to Wind (downloads only Wind information); Waves (download only waves information); Wind + Waves (download both types simultaneously). The <u>default</u> setting is Wind + Waves.

A.3.2.2 Mode and Position

➤ **"C-FORECAST" + 'ENTER' + "DOWNLOAD PREVIEW" + 'ENTER'+ "CURSOR/FIX" + 'ENTER'**

Available options are Fix and Cursor. If the active mode is Fix the coordinates field (Position) cannot be modified manually. If the <u>GPS</u> is not providing a valid fix position or the Simulation mode is not active, the active mode is Cursor, the starting position is at the cursor coordinates and it is not possible to switch to Fix mode. The <u>default</u> <u>Lat/Lon</u> is the current vessel's position (received from the <u>GPS</u> or simulated).

A.3.2.3 Show on Chart

➤ **'"C-FORECAST" + 'ENTER' + "DOWNLOAD PREVIEW" + 'ENTER'+ "SHOW ON CHART" + 'ENTER'**

Show On Chart enables to display chart at full screen. By pressing 'CLEAR' from chart return to this menu.

A.3.2.4 Course

➤ **"C-FORECAST" + 'ENTER' + "DOWNLOAD PREVIEW" + 'ENTER'+ "COURSE" + 'ENTER'**

The <u>default</u> Course value is the one received from the <u>GPS</u>. If the <u>GPS</u> is not providing a valid data, the <u>default</u> Course is to be set to 000.

A.3.2.5 ETD and Date

➤ **"C-FORECAST" + 'ENTER' + "DOWNLOAD PREVIEW" + 'ENTER'+ "ETD" + 'ENTER'**
➤ **"C-FORECAST" + 'ENTER' + "DOWNLOAD PREVIEW" + 'ENTER'+ "DATE" + 'ENTER'**

ETD (Estimated Time of Departure) and Date: the <u>default</u> Date and ETD are received from the <u>GPS</u>. If they are not received the <u>default</u> Date and ETD are to be the last most recently received values; a Warning message is shown. In case Date and ETD have never been received the <u>default</u> Date is the software release date and the <u>default</u> ETD is 12:00. The value inserted is Local Time: The user is to make sure that the correct Local Time Offset was set. The software will check that the entered ETD is not after 18 hours from current time (because the system provides a valid forecast for 24 hours from current time). The test is valid only when the <u>GPS</u> is providing valid Date and ETD.

A.3.2.6 Download Now

➤ **"C-FORECAST" + 'ENTER' + "DOWNLOAD PREVIEW" + 'ENTER'+ "DOWNLOAD NOW" + 'ENTER'**

When the Download function is activated the Preview window is closed and replaced by another window. Information contained in this window is related to the current contract status, that can be Download or Period.

A.3.3 BROWSE

Browse allows seeing the wind or waves figures referring to a specific hour only, amongst the 6 hours preview provided by the server.

Browse mode can only be selected if at least one of the two data types has been downloaded from the server. If neither wind nor waves information is present, the chartplotter emits three beeps and shows a warning message saying that the Browse cannot be activated. Browse mode allows showing only one data type at time; this means that wind icons and wave icons cannot be shown simultaneously. If both types are loaded the <u>default</u> type will be Wind. If only one data type is loaded, it will be the active selection of the browse and it will not be possible to switch to the other type. Once the main Menu is shown on the screen:

➤ **"C-FORECAST" + 'ENTER' + "BROWSE" + 'ENTER'**

When Browse is selected from the C-Forecast menu the chartplotter goes on chart display (full mode – all data windows must be removed) and selects the map scale that allows seeing the whole area covered by the weather icons.

On the side of the starting position (depending on its rotation) there will be shown a prompt where the user can select the preferred time and the type of information to be displayed. The <u>default</u> time is the time of the first data received. Supposing to have data from 10:00 AM to 3:00 PM the first time will be 10:00 AM and the icons shown on the map will be only the ones referring to 10:00 AM.

The user is allowed to change the time of the preview (among the 6 hours) and the type of data between Wind and Waves by acting on the joystick. Jpystick up and down change the time. Joystick left and right change the data type.

The time step is one hour. When the last or first hour is set and the user tries to increase or decrease the time the chartplotter sounds three beeps and does not change the selected time. Changing the time, all the icons referring to the selected time are displayed on the map. If the time is increased the number of icons shown will cover a wider area. If the time is decreased, the icons shown on the map display will decrease. In this case, in order to avoid the map redraw, the icons without information will be represented by empty spots (no value and arrow shown).

Changing the data type between Wind and Waves the map display will be re-

drawn. If the current type is Wind and there is no Waves information, the chartplotter does not allow to set Waves. Sounds 3 beeps and shows the message: "Warning Waves information not present". On the other hand, changing from Waves to Wind when wind icons are not loaded, the warning will be "Warning Wind information not present".

Pressing 'CLEAR' the Browse mode is quitted and the map is restored to the normal display.

B

C-Staff

The C-Staff functions are based on STAFF Concept ® (Satellite Tracking Aided Fleet Fishing). The STAFF Concept ® is designed for professional fishing purpose to allow monitoring the position of the vessels of a fleet from each vessel (the fleet may have until 20 vessels max). Any fleet's member sends information on his position, speed and heading, so the C-Staff Server contains information on all fleet's members and it is enable to comunicate information to each others.

STAFF Concept ® is a network that allows information exchange between a fleet amongst a wide range of services:
- Exchange geographical position between fleet members
- Fax, SMS and e-mail
- Communicate with other network users
- Internet access

The fleet's members position is shown on the display of the connected chartplotters. The position of the vessel is represented on the chartplotter screen by icon, vessel index (univocal value for each vessel in the range from 1 to 20) and vessel name represented by an 8 characters string (optional).

Each position is shown on the chartplotter display for max 24 hours since the last valid position received. The chartplotter calculates the supposed (or estimated) position of the vessel on the basis of the received position, speed and heading.

The C-Staff functions are available only is the OBC - On Board Computer device is opportunely connected to the chartplotter . For more information contact the C-MAP Italia.

B.1   C-STAFF MENU

All menu settings are reached from the C-Staff menu when the Main Menu is opened on the screen:

➤ **"C-STAFF" + 'ENTER'**

The C-Staff menu contains the following items: Send Position and Position Request.

B.1.1 SEND POSITION

Sends to OBC the trasmission command of the vessel current position to the others fleet's members. When the main Menu is opened on the screen:

➤ **"C-STAFF" + 'ENTER' + "SEND POSITION" + 'ENTER'**

When the command is executed, the message "…OK" is shown next to the relative menu item.

B.1.2 POSITION REQUEST

Sends to OBC the request command to update the positions of all fleet's members. When the main Menu is opened on the screen:

➤ **"C-STAFF" + 'ENTER' + "POSITION REQUEST" + 'ENTER'**

When the command is executed, the message "…OK" is shown next to the relative menu item.

C

Trouble shooting

THE CHARTPLOTTER DOES NOT TURN ON

Make sure that the correct voltage (10-35 volt dc) is present. Check also that the polarity is correct. Refer to the Par. 2.2.

THE CHARTPLOTTER DOES NOT GET A VALID FIX

Make sure that no metal obstacle is placed around the chartplotter acting as a shield for the antenna. If, after 15 minutes, the chartplotter does not get the fix, turn it Off and On again.

THE CHARTPLOTTER DOES NOT TURN OFF

If, after a 'POWER' pressure (for at least 3 seconds) the chartplotter does not turn Off, then turn Off the voltage.

THE CHARTPLOTTER SCREEN BECOMES VERY DARK AFTER A LONG EXPOSURE TO DIRECT SUNLIGHT

Control the contrast (see Par. 2.3).

THE CHARTPLOTTER DOES NOT RESPOND TO ANY COMMAND

Try to turn Off, and then turn On. If the problem persists, erase the memory (see Par. 6.6.1).

Analytical Index

CERTIFICATE OF LIMITED WARRANTY

Providing you present valid proof of purchase, SI-TEX Marine Electronics Inc. warrants all parts of each new product against defects in material and workmanship under normal use and will repair or exchange any parts proven to be defective at no charge for a period of two years and one year for labor from the date of purchase, except as provided below under Limited Warranty Exceptions.

Defects will be corrected during normal working hours by an authorized SI-TEX Marine Electronics Inc. dealer, service center, or at the SI-TEX office in St. Petersburg, Florida. There will be no charge for labor for a period of one year from the date of purchase, except as provided below under Limited Warranty Exceptions. This Warranty and Proof of Purchase must be made available to the authorized SI-TEX Marine Electronics Inc. service location or dealer at the time of service.

LIMITED WARRANTY EXCEPTIONS

SI-TEX Marine Electronics Inc. will not be responsible for equipment which has been subjected to water or lightning damage, accident, abuse, or misuse nor any equipment on which the serial number has been removed, altered, or mutilated. SI-TEX Marine Electronics Inc. assumes no responsibility for damage incurred during installation. This Limited Warranty is effective only with respect to the original purchaser. Any cost associated with transducer replacement, other than the cost of the transducer itself, is specifically excluded from the Limited Warranty.

Travel cost incurred will not be accepted by SI-TEX Marine Electronics Inc.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF.

SPECIFIC EXCLUSIONS

Charges for overtime, stand-by, holiday, and per them are specifically excluded from the Limited Warranty. Chart paper, stylus, stylus belt, lamps, and fuses are consumable items and are not covered by this Limited Warranty.

Installation workmanship or materials except as provided directly by SI-TEX Marine Electronics Inc. are not covered by this Limited Warranty.

SI-TEX Marine Electronics Inc. equipment or parts thereof which have been repaired or altered except by an authorized SI-TEX Marine Electronics Inc. dealer or service center are not warranted in any respect.

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HOW TO OBTAIN SERVICE UNDER THIS WARRANTY

To provide greater flexibility, SI-TEX Marine Electronics Inc. gives you the option to obtain service under the warranty by either:

(a) Contacting an authorized SI-TEX Marine Electronics Inc. service station (The closest service station may be found by contacting your dealer of purchase).

OR

(b) Shipping your equipment prepaid via UPS, FED-EX or truck with insurance prepaid to SI-TEX Marine Electronics Inc. at the address provided below. SI-TEX Marine Electronics Inc. will whenever possible, make all repairs covered by Limited Warranty within two weeks of receiving the equipment in Florida and return the same to you, freight prepaid.
Please do not use the Mail Service due to delays in tracing lost packages.

(c) You must present a copy of your Purchase Sales Slip at the time you request warranty service.

Shipping Address:
SI-TEX Marine Electronics Inc.
11001 Roosvelt Blvd
Suite 800
St. Petersburg, Fl 33716

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