

GEONAV 11 **SUNSHINE
FLASH
SUN**

GEONAV 8 **SUNSHINE**



User and Installation Guide

READ THIS WARNING BEFORE USING THE GEONAV

WARNING

THE ELECTRONIC CHART IS AN AID TO NAVIGATION DESIGNED TO FACILITATE THE USE OF AUTHORIZED GOVERNMENT CHARTS, NOT TO REPLACE THEM.

ONLY OFFICIAL GOVERNMENT CHARTS AND NOTICES TO MARINERS CONTAIN ALL INFORMATION NEEDED FOR THE SAFETY OF NAVIGATION AND, AS ALWAYS, THE CAPTAIN IS RESPONSIBLE FOR THEIR PROPER USE.

The use of the GEONAV implies knowledge and acceptance of this warning by the user.

NOTE: This guide applies to the GEONAV 11 Flash, GEONAV 11 Sun, GEONAV 11 Sunshine and GEONAV 8 Sunshine models. The functions peculiar to each model are highlighted in the text. Unless otherwise specified, functions are intended as common to all models. Unless otherwise specified, although figures refer to the 11" model, they also apply to the 8" model. Technical characteristics and functions described in this manual are subject to change as a result of improvements or changes to the product.

INTRODUCTION

The GEONAV is a chart plotter that can be interfaced with a GPS receiver, autopilot and other onboard instruments, and allows displaying the boat's geographical position with respect to an electronic chart.

Thanks to the GEONAV and a NAVIONICS electronic chart, you will never get lost even in case of fog, rain or dark.

The GEONAV, available with either sunlight-readable color display or sunlight-readable monochrome display, has been designed to allow flush mounting. Equipped with an easy-to-use keyboard, the GEONAV allows controlling the autopilot directly from the plotter (Easy Pilot function) and, thanks to the unlimited capacity of the new CompactFlash™ cartridges - that can also be used on PCs as personal hard disks - can store a large amount of route, track and marker data.

The GEONAV is equipped with three software versions (standard, advanced and sailing), automatically selected according to the instrument connected. The connecting supports both the NMEA 0183 standard protocol and the new NMEA 2000 network, suitable for the network connection of multiple stations or several instruments of different brands.

The Route functions will allow you to plan a trip, while, thanks to NAVIONICS electronic charts, you will always know exactly the boat's position. NAVIONICS charts are available for all the most popular boating areas and can be used in addition to official paper charts to obtain additional information, such as the availability of port services as well as tides and currents data. NAVIONICS electronic charts are available worldwide from authorized NAVIONICS dealers.

Should new functions be available in the future, it will be possible to update the GEONAV internal software at any NAVIONICS dealer.

CHARACTERISTICS

General characteristics

- Configurable internal software versions (standard/advanced)
- Easy Pilot function for easy and direct control of autopilot
- Possibility to transfer routes, tracks and markers from one plotter station to another through network connection
- EBL and VRM functions
- Multiple display of tracks
- Storage of track data including significant additional information such as date, time, latitude/longitude, depth, temperature, wind data, etc.
- GOTO function (Waypoint, Port, Nearest Service, Marker, Track, Lat/Lon, R/B)
- Screen Amplifier™ function
- Autozoom™ function
- Overzoom™ function
- 8 marker shapes, 8-character name
- Reverse route function
- Selectable depth units (meters, feet and fathoms)
- Cartography with port services and Tides and Currents data
- 16 zoom levels
- Heading vector
- Speed and heading filters
- CompactFlash™ cartridge
- Storage of routes, tracks and markers in separate files on CompactFlash™ cartridges
- NMEA 0183 interface (ver. 2.03)
- NMEA 2000-ready interface
- Display of depth and water temperature data (if interfaced with an echosounder)
- Display of wind data and automatic activation of the sailing software version (if interfaced with wind instruments)
- Backlit keypad

- Flash* | • Color LCD, TFT 10.4"
 - Sun* | • Monochrome LCD, STN 9.4"
 - Sunshine 11* | • Color LCD, transfective TFT 10.4", high brightness, sunlight visible
 - Sunshine 8* | • Color LCD, TFT 6.4", sunlight visible
- Electrical characteristics
- Power supply: 10 to 36 Vd.c.
- Flash*
Sun | • Power consumption: Max. 13 W
 - Sunshine 8* | • Power consumption: Max. 16 W
 - Sunshine 11* | • Power consumption: Max. 20 W
- NMEA 2000 network load: 2
 - Auxiliary voltage output: 10 to 36 Vd.c. (same as input voltage) - Max. 250 mA
 - Protection against: Reverse polarity
Input overvoltage (up to 40 Vd.c.)
Overcurrent at auxiliary voltage output (over 250 mA)
- Flash*
Sun | • Operating temperature: 0°C to +50°C
 - Sunshine* | • Operating temperature: 0°C to +55°C
- Flash*
Sun | • Storage temperature: -20°C to +60°C
 - Sunshine* | • Storage temperature: -20°C to +70°C
- Memory characteristics
- Up to 100 waypoints per route
 - Up to 5000 trackpoints (multiple tracks)
 - Up to 3000 markers per group

- Number of routes, tracks and markers: unlimited, depending on the size of the CompactFlash™ used

Interface characteristics

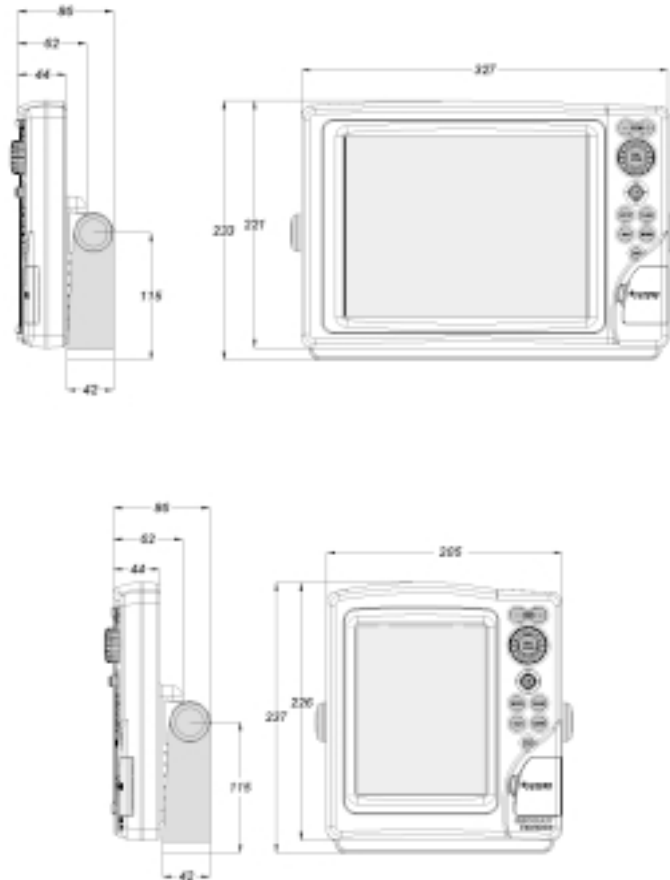
- Standard NMEA 0183 sentences
 - from position sensor: GLL, VTG, GGA, RMC, GSV, ZDA, RMA, GSA
 - from depth sounder: DBT, MTW
 - to autopilot: APA, APB, XTE, RMB, BWC, GLL, VTG
- CAN protocol, compatible with NMEA 2000

If received from the GPS, the following sentences are transmitted:
GGA, RMC, ZDA.

Accessories

- Bracket for detachable installation
- Gasket and drilling template for panel mounting
- Plastic frame and drilling template for flush mounting (optional on the Sunshine 8 model)
- Power supply cable
- Auxiliary power supply cable
- User and Installation Guide
- Protection cap
- Carrying case

NOTE: The plotter can be interfaced with instruments featuring the new NMEA 2000 protocol. However, as of the plotter is put on sale, the final issue of the NMEA 2000 standard is not available yet. For this reason, to obtain full efficiency from network connection, the plotter software may need updating. For further information, consult your local GEONAV dealer.



INSTALLATION AND PRECAUTIONS

Precautions

To avoid electromagnetic interference, the GEONAV must be positioned at least 0.72 m (Flash, Sun), 0.50 m (Sunshine 11) or 0.45 m (Sunshine 8) away from the magnetic compass. Wherever possible, the power supply cable shield should be connected to the boat's ground plate.

The GEONAV is water resistant but not waterproof, and should not be immersed totally in water.

The cartridge slot cover, located on the plotter's right-hand side, should always be kept closed and opened only when replacing cartridges. Make sure that the cartridge replacement is carried out as the unit is perfectly dry and that no water enters the unit.

Rear connectors, when not in use, should always be protected by the appropriate rubber covers.

Cleaning

It is recommended the use of a non-alcoholic product to clean the glass, since alcoholic products may damage the glass surface or make it opaque.

Panel mounting

Locate the area where the GEONAV is to be installed, then use the drilling template supplied with the plotter to properly cut holes and sockets out of the instrument's panel.

The neoprene adhesive gasket supplied must be applied to the GEONAV rear side to avoid moisture penetration and to reduce vibrations.

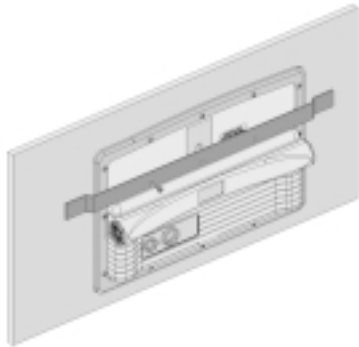
Mounting screws must be 4 mm in diameter and maximum 5 mm in length, plus the thickness of the panel. Do not exceed tightening the screws, in order to avoid damaging the screw seats.

Flush mounting

Locate the area where the GEONAV is to be installed, then use the cutting template supplied with the plotter to cut the panel.

Apply a layer of silicone glue (the use of black colored glue is recommended, in order to prevent the area from going yellow when exposed to sunlight) to the plastic frame rear part; place the frame into the socket cut out of the panel, so that the frame edge leans against the panel.

Make sure that the frame and the panel are correctly fixed; if necessary, apply additional metal brackets (not supplied in the package) as shown in the figure below.

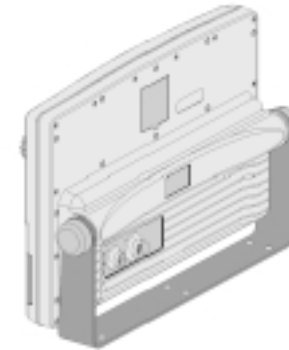


Let the silicone glue dry, then apply the neoprene gasket to the plotter rear side, insert the instrument into the frame and lock it by the screws supplied.

Do not exceed tightening the screws, in order to avoid damaging the screw seats.

Bracket mounting

Fix the bracket to the boat's dashboard by screws 6mm in diameter.



CONNECTIONS

Power supply and data connector (9 pins)

1. Power supply

red wire	+ VDC	pin 1
black wire	GND	pin 2

2. NMEA 0183 data input

brown wire	GPS IN +	pin 3
yellow wire	GPS IN -	pin 4

3. NMEA 0183 data output

violet wire	DATA OUT +	pin 5
white wire	DATA OUT -	pin 6

4. Auxiliary output voltage (Vaux)

blue wire	Vaux+, 250mA *	pin 7
green wire	GND	pin 8
SHIELD		pin 9

* Vaux voltage is the same as the plotter's input voltage.

If sent by the position sensor, the following NMEA messages are transmitted to external devices (e.g., autopilot):

APB - XTE - RMB - BWC - GLL - VTG

The GEONAV will add the following messages (if received from the position sensor):

GGA - RMC - ZDA

Auxiliary connector (7 pins)

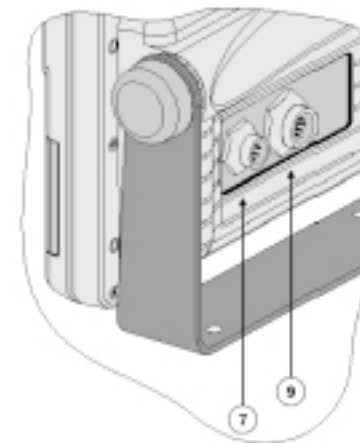
Allows connecting the GEONAV to an auxiliary instrument equipped with an NMEA 0183 interface (e.g., echosounder and mast head transducer), as well as to the NMEA 2000 network.

1. NMEA 0183 auxiliary data input

brown wire	DATA IN +	pin 1
yellow wire	DATA IN -	pin 2

2. NMEA 2000 network connection

- | | | |
|------------|-------|-------|
| white wire | NET H | pin 3 |
| blue wire | NET L | pin 4 |
| black wire | NET C | pin 6 |
| red wire | NET S | pin 7 |
| SHIELD | | pin 5 |



WARNING: To ensure a safe installation, the shields of connecting cables should be grounded, i.e., connected to the boat's ground.

NOTE: Network connection requires the use of suitable connectors and an auxiliary power supply, as established by the NMEA 2000 standard. Technical features and connection modes are reported in the technical document issued by the National Marine Electronic Association (for further information, go to the <http://www.nmea.org> web site). Only skilled personnel should be charged with making the connection.

CARTRIDGE INSTALLATION**Installing the CompactFlash™**

Open the cartridge slot cover located on the plotter's front side.

Insert the cartridge into the appropriate slot, with the label side (side with a small arrow) towards the right, and push it down.

Close the cover exercising light pressure and check that it is perfectly closed, in order to avoid any water infiltration.



NOTE: Make sure of inserting the cartridge correctly. Should you try to insert the wrong side of the cartridge, full insertion into the slot is hampered. Any further attempt to force the cartridge into the slot may damage the cartridge or the plotter. This kind of damage is not covered by the warranty.

Removing the CompactFlash™

Make sure that the plotter is perfectly dry.

Open the cartridge slot cover located on the plotter's front side, then extract the cartridge.

WARNING: Always use CompactFlash™ cartridges certified by Navionics. The use of non-certified cartridges may result in improper operation of the unit.

The CompactFlash™ cartridges can be used as a mass-storage with any PC computer, so can be the cartridge used by the plotter. However, the plotter needs to find some free space in the cartridge in order to work properly. Prior to use a new cartridge, always make sure that there are at least 2.5MB of free space.

WARNING: Be careful when handling the cartridge files by using the PC. Windows allows deleting and moving files easily, therefore pay attention when using Windows Explorer not to erase the content of the \NAVIONIC and \GEONAV folders. Damaging the files stored in such directories may result in loss of data or improper operation of the unit.

KEYBOARD**ZOOM-/ZOOM+**

- Increases/decreases the chart range
- Enables/disables the Autozoom function

JOYSTICK (right/left - up/down)

- Moves the cursor across the screen
- Switches from Navigation mode to Cursor mode
- Selects the options from menus and submenus

If pressed (ENTER):

Cursor mode:

- Inserts a waypoint at the cursor's position

Navigation mode:

- Changes the target waypoint (Motor boating)
- Sets the wind speed (Sailing)

Menu:

- Confirms a selection

GOTO

Plots a route to:

- A new target waypoint
- A marker



- A port
- The nearest port service

Positions the cursor on the coordinates selected (Lat/ Lon or Trk).

CLR

- Cancels the setting of data in the windows
- Cancels the option selection from the menu

Cursor mode:

- Deletes all waypoints, starting from the last entered
- Deletes the waypoint pointed by the cursor
- Deletes the marker pointed by the cursor

Navigation mode:

- Deletes the whole current route

KNOB

- Adjusts EBL/VRM parameters
- Selects the several options from the menu windows
- Scrolls letters and numbers when entering data in the windows

If pressed:

Navigation mode:

- Switches from EBL to VRM

Menu:

- Switches from vertical to horizontal scrolling and confirms the selection

NOTE: Both the joystick and the knob (press the knob to switch from horizontal to vertical movement) can be used to select items from the menu, as well as to set data (e.g., marker's name, local time, etc.). In the remainder of the document, reference is made to the joystick only.

PAGE

- Cancels a selection

Cursor mode:

- Switches from Cursor mode to Navigation mode

Navigation mode:

- Turns the pages of navigation data

MARK

- Inserts a marker at the boat's position (in Navigation mode), or at the cursor's position (in Cursor mode)

PWR

- Switches the GEONAV on
- Opens the contrast/brightness window
- Switches the GEONAV off (if held pressed for more than 3 seconds)

DIAGNOSTIC

The GEONAV features a diagnostic program to verify its correct performance, once installed, and to detect problems that may occur during the use of the unit.

To access the diagnostic program, keep pressed any key but CLR, while pressing the PWR key.

The GEONAV will switch on and carry out automatically a test of the whole system; as soon as the memory test is completed, the program will test the LCD, the CompactFlash™ card and the keyboard. Press ENTER to run one test, CLR to skip to the next one. To exit from the keyboard test, press CLR twice.

Once the keyboard test is completed, the diagnostic program allows checking the messages received from the GPS through the NMEA 0183 port. Hold the knob pressed to freeze the messages on the screen, then release it to keep on displaying the new messages sent by the GPS. To test channel 1 (depth sounder or wind instrument), press GOTO. Press CLR to quit.

After the keyboard, the diagnostic program will test the internal non-volatile memory and the backlight. Press ENTER to run one test, CLR to skip to the next one.

Once terminated all tests, press ENTER to re-boot the unit.

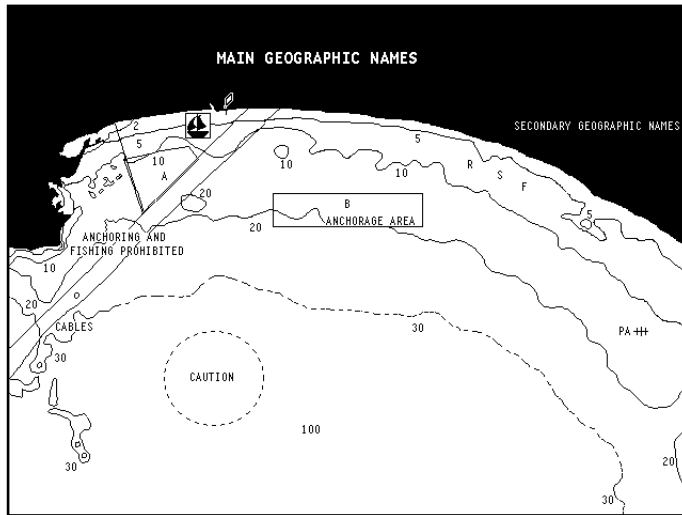
WARNING: The internal memory can be cleared by pressing simultaneously the PWR and CLR keys. This operation will delete all the settings stored in the GEONAV and restore factory settings.

NOTE: In case of damaged cartridge or abnormal power spikes, the unit might lock, requiring a power shutdown to restart. In that case, the unit can be turned off without the need of detaching the power, by simply pressing the GOTO, PAGE and CLEAR keys at the same time. This function is useful if the unit is panel mounted or flush mounted and the power switch cannot be easily accessed.

NAVIONICS ELECTRONIC CHARTS

The GEONAV includes a built-in world map. Additional cartography details relative to a specific area of navigation are available from the CompactFlash™ cartridges storing NAVIONICS Seamless™ electronic charts.

NAVIONICS electronic charts contain the following data:



To display chart boundaries, press the PAGE key to display the menu, select SETUP, then the CHART BOUNDARY option and, by the joystick, select ON/OFF to enable/disable the boundaries of the charts stored in the cartridge.

A small square will locate the area covered by the cartridge installed; position the cursor within the square and then de-

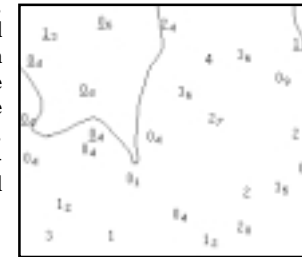
crease the chart range by the ZOOM+ key to display the details of the area covered by the cartridge.


The maximum detail level is obtained within port plans and can reach 1/8 nautical mile (the smallest point on screen is equivalent to approximately 1 meter), depending on the cartridge type and coverage.

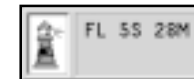
Increasing/decreasing the chart range
Press the -ZOOM+ key.

Displaying depth contours, geographical names and ports
Press the PAGE key to display the menu, select SETUP and enable the options desired (DEPTH CONT. or NAMES) by the joystick.

Converting depth values into the units set
Press PAGE to display the menu, select SETUP, DEPTH UNITS and then set the unit desired in meters, feet or fathoms. The GEONAV will convert all the depth values in the unit selected, making them appear like those reported in the official nautical charts (see the figure).



Displaying navaid characteristics
Position the cursor on the navaid symbol . A window will show the characteristics of the navaid selected.




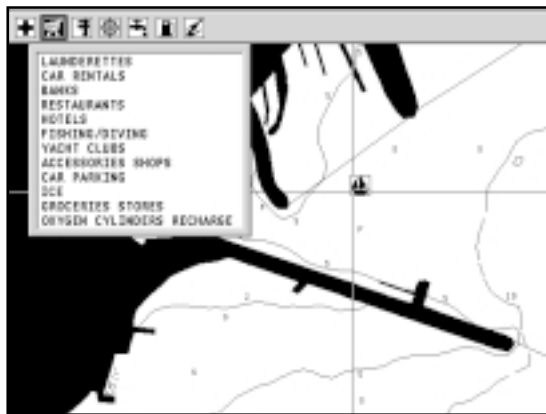
Description of navaid characteristics:

ABBREVIATIONS FOR LIGHT		ABBREVIATIONS FOR COLOUR	
AL	alternating	AM	amber
F	fixed	B	black
FLL	fixed and flashing	BL	blue
FL (...)	group flashing	G	green
FL	single flashing	OR	orange
IQ	interrupted quick	R	red
OC	single-occulting	VL	violet
OC (...)	composite group occulting	W	white
Q	continuous group	Y	yellow
ABBREVIATION FOR PERIOD		ABBREVIATION FOR RANGE	
..S	xx seconds	..M	xx nautical miles

Displaying port services

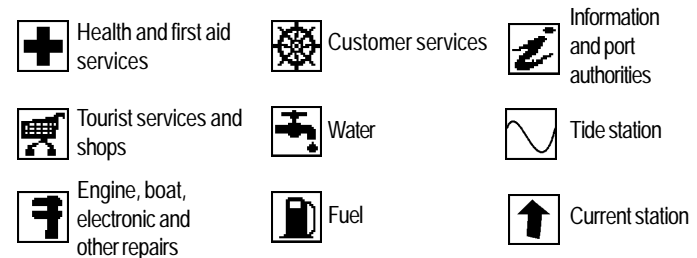
NOTE: This function is available only with the NAVIONICS cartridges containing the Port Services feature.

Position the cursor on the port icon  and press ENTER.



A window will show the list of the port services available in the port selected. Choose the service desired by the joystick. The number and the type of icon differ from one port to another.




Port services are identified by the following icons:



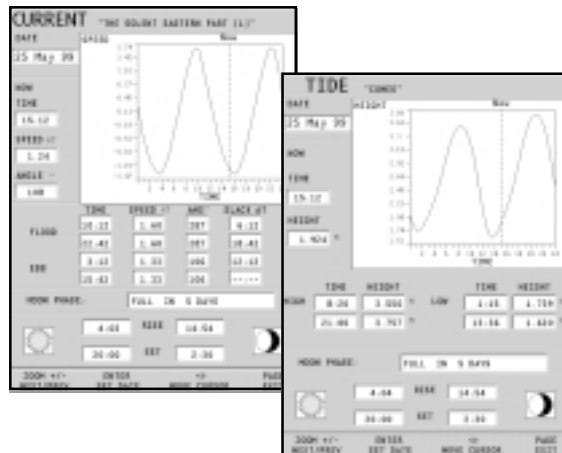
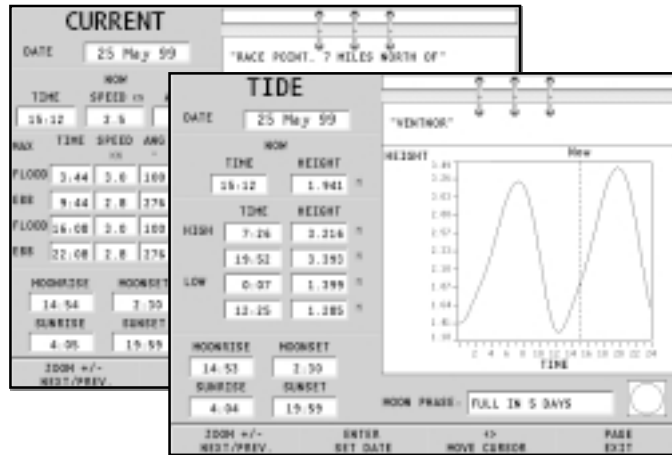
The number and the type of service available will depend on the cartridge installed.

Displaying Tides and Currents data

NOTE: This function is available only with the NAVIONICS cartridges containing Tides and Currents data.

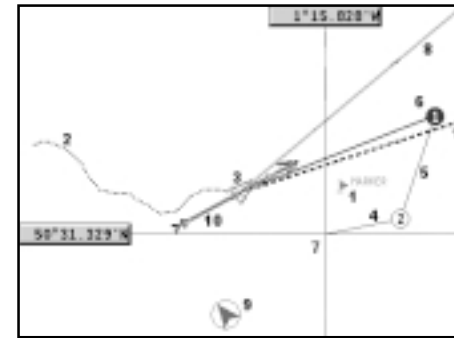
Position the cursor on the icon of a Tide or Current station, then press ENTER.   

A graph will show the tide rate or the tidal stream relevant to the station selected, as measured during the current day.



GRAPHIC ITEMS

Besides chart data, the GEONAV displays some graphic items useful during navigation. The figure below shows some of these items.



- 1 - Marker
Indicates a point of interest associated with a symbol, a name and a color.
- 2 - Track segment
Recording of the track actually followed by the boat; the track is displayed as a colored dashed line.
- 3 - Boat's position
Boat's position according to the data received from the GPS receiver.
- 4 - Rubber band
Line joining the last waypoint entered to the manual cursor, or the boat's position to the manual cursor when no waypoint has been entered.
To delete this band, press the PAGE key and switch to Naviga-

tion mode.

5 - Route leg

Part of route between two waypoints.

6 - Waypoint

Waypoints are identified by a circle and a number. The route starting point is marked by the "X" symbol. The target waypoint is identified by a filled circle, whereas the route leg currently followed is identified by a thicker line.

7 - Cursor

Indicates the position expressed in geographical coordinates (latitude and longitude).
It is displayed when the plotter is in Cursor mode.

8 - Heading vector

Indicates graphically the boat's current route.

9 - North indicator

Indicates the north direction when the Chart rotation function is enabled.

10 - True wind vector

Indicates the direction of true wind detected by onboard instruments.

11 - Layline

Indicates the direction after the next tack or gybe. In order to achieve the best performance, the tack or gybe should be carried out as soon as the layline crosses the target waypoint.

Sailing

FUNCTIONAL CHARACTERISTICS

This chapter describes some of the most important functions of the GEONAV, as well as the terms most commonly used in this document.

Switching on/Switching off the unit

To switch the GEONAV on, press the PWR key. To switch it off, keep the PWR key pressed for more than 3 seconds.

Welcome page

At start-up, the GEONAV displays a welcome page whose text (e.g., the boat's name) can be edited by the Setup menu (see the *Setup* Section). To freeze the page displayed, press PAGE. To unfreeze the page and continue with the instrument's operation, press PAGE again.

Standard/Advanced modes

The GEONAV can operate in Standard mode or in Advanced mode. In Advanced mode, even the less frequently used functions, such as data saving to cartridges and heading/speed filters, are available. In Standard mode, some menus feature less options, thus making it easier to use the plotter. To choose the operating mode desired, press the PAGE key to display the menu, select SETUP and then SELECT MODE.

Depth sounder

If connected to a depth sounder via NMEA, the GEONAV will enable the depth sounder mode, showing a graph of the sea bed or the relevant data in numerical form.
The depth value can be expressed in meters (default value), feet or fathoms; to select the unit, press PAGE to display the menu, select SETUP and DEPTH UNITS (M/FT/FA).

Sailing

Sailing functions

If connected to a mast head transducer (anemometer), the GEONAV will automatically enable the Sailing mode, once wind speed and direction data has been received.

NOTE: In this document, the functions enabled in Advanced and Sailing modes are outlined in the text. Unless otherwise specified, functions are intended as common to all the available modes.

Navigation mode (automatic)

At start-up, the GEONAV automatically enables the Navigation mode, as soon as the GPS transmits a valid fix; when in Navigation mode:

- The manual cursor is not displayed
- The depth sounder window can be accessed

This mode is also called automatic because the unit automatically updates the boat's position on the screen.

Cursor mode (manual)

When in Cursor mode, the manual cursor is displayed. It is possible to insert, delete and move waypoints, insert and delete markers, display navaid information, etc., but it is not possible to gain access to the depth sounder window.

To switch from Navigation mode to Cursor mode, use the joystick. To go back to Navigation mode, press the PAGE key.

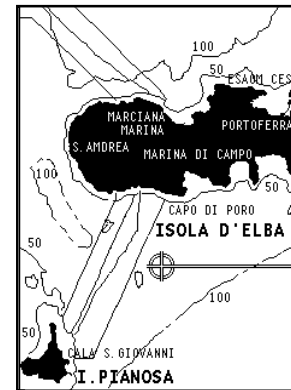
Chart rotation

Charts are traditionally displayed in north-up mode. This, however, does not correspond to reality. For example, when traveling southwards, the chart shows, on the right side of the boat, what is actually located on the left side, and vice versa.

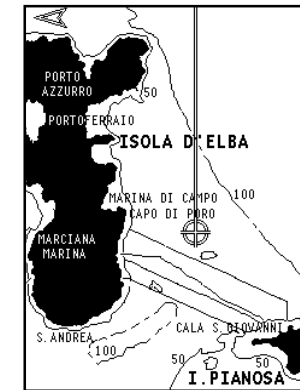
The Chart Rotation function allows rotating the electronic chart displayed according to the plotted route (COG - Course Over Ground), as detected by the GPS receiver. Since the COG value varies continuously, a filter has been inserted to prevent the chart from bouncing.

The Chart Rotation function is enabled at a speed greater than 1 knot. To enable the Chart Rotation function, press PAGE to display the menu, select SETUP, then CHART ROTATION and ON. A message will prompt the user to select the chart


range before activating the chart rotation. Confirm by pressing ENTER.



Without Chart Rotation

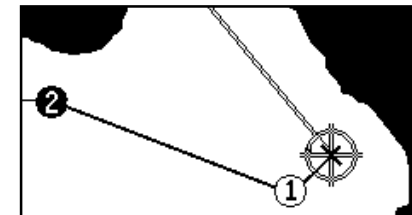


With Chart Rotation

The northern direction will be indicated by the symbol 

Autozoom

With the Autozoom function the GEONAV will always display automatically the boat's position and the target waypoint at the best available chart range. This function is enabled provided that at least one waypoint has been previously entered.

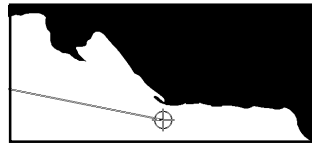


To enable the Autozoom function, press ZOOM+ until the "AUTOZOOM ? ENTER = YES" message is displayed, then confirm by pressing ENTER. To disable the Autozoom function, press ZOOM.

When the GEONAV is turned on, and if at least one waypoint has been previously entered, the Autozoom function will be automatically enabled.

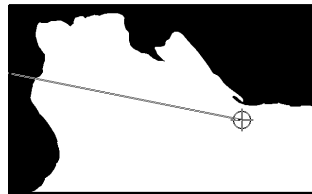
Screen Amplifier

This function automatically redraws the chart according to the boat's course, so as to maintain 2/3rds of the screen ahead of the boat, provided that the boat's speed is greater than 3 knots.



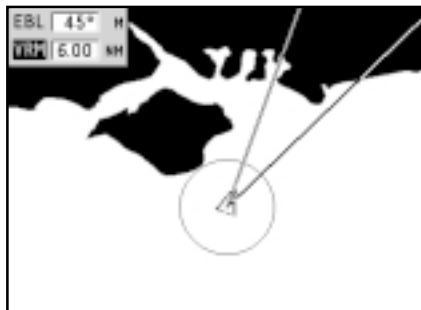
Advanced

To enable/disable the Screen Amplifier function, press the PAGE key to display the menu, select SETUP, the SCREEN AMPLIFIER option, then ON or OFF. This function will be enabled provided that no waypoint has been previously entered.



EBL/VRM functions

The EBL (Electronic Bearing Line) and VRM (Variable Range Marker) functions allow entering markers and waypoints as range and bearing coordinates with respect to the current position.



To enable these functions, rotate the knob to display the EBL, position the line on the bearing desired, then press the knob to enable the VRM ring and adjust its size by rotating the knob so as to reach the range desired. To edit the values set, press the knob to switch from the VRM function to the EBL function. Press MARK to insert a marker where the EBL and VRM intersect, and ENTER to insert a waypoint.

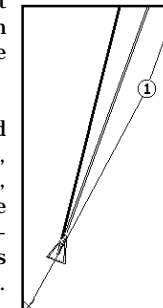
Range and bearing values are displayed in the top left-hand corner of the screen, together with the indication of the function currently enabled.

Press CLR to disable the two functions in sequence.

The VRM ring can also be used to set the range for navigation from the coast, for example to avoid navigating out of the limit allowed. In this case, set the EBL to any value, adjust the VRM ring size as desired, then navigate making sure that at least one point in the ring is always touching the coast.

Easy Pilot function

The Easy Pilot function allows editing temporarily a route set and followed by the autopilot, but keeping the route unchanged. This function is useful to make corrections at once (e.g., because of other boats or to approach points of interests), without having to edit the route planned or disable the autopilot.

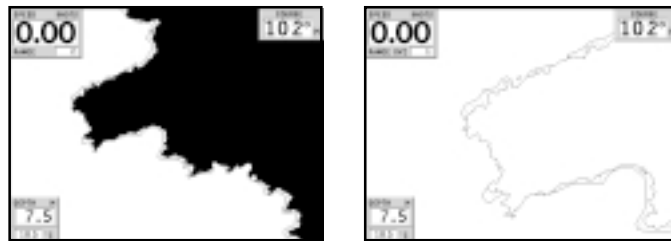


To enable this function, rotate the knob and position the EBL on the new route to follow, then press ENTER. The EBL will change color, as the boat starts following the new route; the planned route will be abandoned, although displayed. To go back to the planned route, thus canceling the temporary correction, press CLR.

NOTE: The Easy Pilot function can be enabled only if a route is present.

Overzoom

The Overzoom function allows expanding the chart range. The Overzoom does not provide any additional chart detail, only improves the readability of the available information, acting as a magnifying glass.



When the Overzoom is enabled, the unit will warn the user by:

- Disabling the land filling function
- Adding OVZ after RANGE within the navigation window

To enable/disable the Overzoom function, press PAGE to display the menu bar, then select SETUP, OVERZOOM and ON/OFF.

Position calibration

All position sensors are affected by intrinsic errors that make the boat's position incorrect (from few meters to several hundred meters).

The position calibration function allows correcting manually the position error present in all GPS, provided that this error is not greater than 2 nautical miles.

Press PAGE to display the menu bar, select SETUP, CALIBRATION and then ON. A message will prompt the user to move the cursor to the boat's true position, appropriately enlarged by the ZOOM+ key.

Press ENTER to move the GPS boat's position to the point indicated by the cursor. This operation will save the calibration for use in future calculations.

NOTE: When the calibration is enabled, the coordinates (latitude/longitude) in the Info window will be marked by (*).

To cancel calibration, press PAGE to display the menu bar, select SETUP, CALIBRATION and then OFF.

Local time

This function allows entering local time instead of the Greenwich time (GMT) supplied by the GPS receiver.

To enter local time, press PAGE to display the menu bar; by the joystick, select SETUP, TIME REFERENCE and then LOCAL.

The joystick will allow entering local time as well as confirming the operation. To cancel local time, press PAGE to display the menu bar, select SETUP, TIME REFERENCE and then GMT.

Contrast/Brightness

Press the PWR key to display the CONTRAST/LIGHT window. To switch from one option to the other and to adjust the contrast/brightness level, use the joystick. Press the PAGE key to exit.

Color

Besides displaying color nautical charts, the GEONAV allows selecting the track and marker colors.

Press the PAGE key to display the menu bar, select TRACK or MARKER, then COLORS and confirm by pressing ENTER; choose the color desired and confirm.

The color of markers can also be selected when entered or edited, whereas the track segment color can be selected by

Flash
Sunshine

Flash
Sunshine

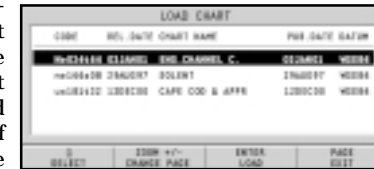
positioning the manual cursor on the segment itself.

The color of chart items can be chosen from DAY, NIGHT or BRIGHT. Press the PAGE key to display the menu bar, select SETUP, DISPLAY MODE and then DAY, NIGHT or BRIGHT.

QUICK TOUR

We recommend that you use the GEONAV intuitively, since no damage will be caused by pressing an incorrect button.

Make sure that the GPS receiver is connected, insert a Compact Flash™ cartridge and press the PWR key. At start-up, the last chart used will be loaded by default. If the chart is not found, the list of NAVIONICS charts stored into the Compact Flash™ cartridge will be displayed. Select the desired chart by the joystick, then confirm by pressing ENTER.



A message will warn the user that electronic nautical charts do not replace official government charts.

Press the PWR key to turn the display backlight on and adjust brightness by the joystick; press PAGE to continue.

The Satellite window will show the configuration of the satellites in use.

As soon as the GPS receiver has obtained a valid fix (it can take a few minutes), the boat's position and the relevant area will be displayed at the best scale available.

The default language is English. To change the language, press PAGE to display the menu bar, then select SETUP, LANGUAGE and the desired language by the joystick.

The line, or vector, starting from the boat indicates the boat's direction, to be ignored if the boat is stationary.

Two windows will display the boat's speed, route and chart scale.

The GEONAV is in Navigation mode; by the joystick, it is possible to switch to Cursor mode (editing mode). The cursor position is shown by two windows. The joystick allows moving in all directions.



To plot a route starting from the boat's position, move the cursor to the position desired, and press ENTER to insert a waypoint, that will be indicated by a circle containing the number 1.

The windows will also show the time to reach the target waypoint, distance, bearing and estimated time to arrive.

Press the PAGE key to go back to Navigation mode. To add more waypoints, enter the Cursor mode by using the joystick and repeat the operations described above.

As new waypoints are added, the numbering will increase



progressively. In case of error, waypoints can be deleted by pressing the CLR key (Cursor mode), starting from the last entered.

To go back to Navigation mode, press PAGE.

If an autopilot is connected to the GEONAV, the plotted route is automatically followed as soon as the Navigation mode is enabled.

NOTE: The cursor can be moved to the desired position by using the GOTO function as well. See the *GOTO* Section for more details.

OPERATING MODES

The GEONAV will display different kinds of data, according to the operating mode currently enabled.

CURSOR MODE



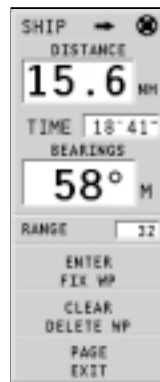
To plan a new route, or to append waypoints to the existing route, move the cursor by using the joystick and press ENTER. The GEONAV will display the following data:

- Route total length
- Time to the end of the route (estimated on the speed value manually entered in the ROUTE INFO menu; see the *Route* Section)
- Distance from the last waypoint to the cursor
- Chart range

To edit the existing route, move the cursor by using the joystick. The GEONAV will display the following data:

- Distance from the boat's position to the cursor
- Time to arrive to the cursor
- Bearing from the boat's position to the cursor
- Chart range

Now it will be possible to move the cursor on a route item to edit it, or press ENTER to lengthen the route by appending new waypoints.



NAVIGATION MODE

To access these windows, press the PAGE key repeatedly. As the fix is valid, the sequence is the following:

SATELLITE > MOTOR BOATING > MENU > DEPTH SOUNDER > TRIP > INFO

Sailing If data is received from the mast head transducer, the Sailing mode is automatically enabled and the window sequence changes as follows:

SATELLITE > SAILING > MENU > MOTOR BOATING > DEPTH SOUNDER > TRIP > INFO

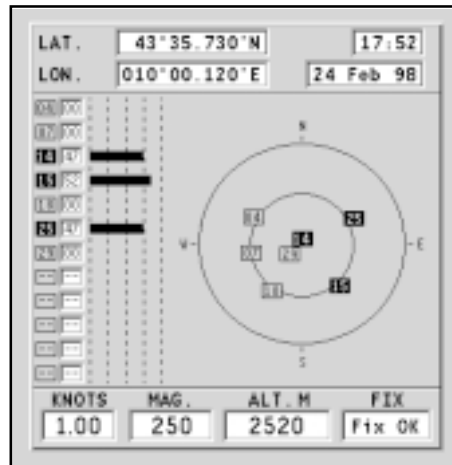
The Depth Sounder window is displayed provided that data from a depth sounder is received.

The Info window is displayed provided that a NAVIONICS cartridge featuring Tides and Currents data is active (see the *Info Window* Section).

SATELLITE WINDOW

NOTE: If a NAVIONICS cartridge with the Tides and Currents feature has been inserted, the Satellite window will disappear as soon as a valid fix is obtained and be replaced by the Info window.

At start-up the satellite window displays how many and which satellites are tracked by the GPS receiver.



The outer circle represents the horizon, the inner one identifies a 45° elevation with respect to the horizon, and the central circle points to the zenith.

The small squares with numbers show the satellites available.

As soon as a satellite is tracked by the GPS receiver, the number inside the square is displayed in reverse. The bars dis-

played on the left identify the signal quality; the longer the bar, the higher the signal quality.

On the left of each bar, two digits indicate numerically the signal/noise ratio.

Additional information:

- Day, month, year, local or Greenwich time (at the first start-up the GEONAV is initialized to Greenwich Time).
- Boat's position (lat/lon) (or the latest valid fix if the GPS receiver is still searching for satellites).
- Data on the current satellite situation (number and fix).
- SOG, COG and altitude.

The latitude and longitude values relevant to the boat's position are displayed as soon as three satellites are tracked and a 2D fix (two dimensions) is available.

The altitude value is available only if four satellites are tracked and a 3D fix is obtained.

As soon as a valid fix is available, the GEONAV will automatically switch to Navigation mode and display the boat's position at the best chart range available; the window at the bottom of the screen will indicate the boat's course and speed.

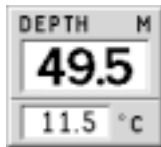
MOTOR BOATING WINDOWS

These windows are automatically enabled as soon as the GPS receiver has obtained a valid fix (FIX OK).



If no route has been entered, the following data will be shown:

- Boat's speed
- Chart range
- Course
- Sea depth
- Water temperature (if available)



To change the chart range, press the -ZOOM+ key.

If a route has been entered, the following data will be shown:

- Boat's speed
- Chart range
- Target waypoint
- Time to arrive to the target waypoint
- Distance to the target waypoint
- Bearing
- Estimated time to the end of the route
- Sea depth
- Water temperature (if available)



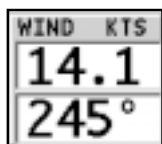
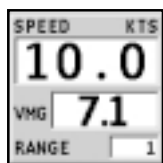
When navigating in waters deeper than sounder operating range or if the boat's speed is too high for depth sounding, data acquisition will be interrupted and the number replaced by "—".

NOTE: To display sea depth and temperature values, the GEONAV must be interfaced with a depth sounder.

SAILING WINDOWS

Sailing

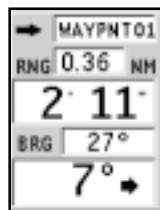
These windows, automatically enabled as soon as the GPS receiver has obtained a valid fix (FIX OK) and data is received from wind instruments, display the following information:



- Boat's speed
- VMG
- Chart range
- True wind speed
- True wind direction (magnetic)

If a route is present, the following data will be displayed:

- Target waypoint name
- Distance from the boat's position to the target waypoint
- Time to arrive to the target waypoint
- Bearing between the boat's position and the target waypoint
- Angle to steer



If more waypoints are present, besides the target waypoint, a window will show the apparent wind data on the next leg.



The apparent wind speed is given by the digits in the center of the window. The bearing to the next waypoint is shown at the bottom of the window.

If a close hauled or a run are planned on the

Sailing

next leg, the arrow will indicate the direction of apparent wind on the first beat of the next leg, whilst the direction of apparent wind on the waypoint will be represented by a single line.

The wind graph on the right-hand side of the screen shows the true wind variation diagram with respect to the reference direction, as recorded in the last hour.

Sailing
Advanced

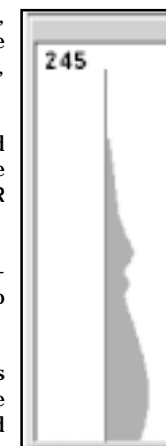
The reference direction, set in the Setup menu, can be dynamic or fixed; to fix it, press the PAGE key to display the menu bar, select SETUP, SET WIND and ON.

The default reference value will be the wind current direction. If necessary, change the value by using the joystick, then press ENTER to confirm.

The graph scale will show the wind variations within the range of $\pm 45^\circ$ with respect to the reference direction.

When the value of the true wind direction is greater, the user is prompted to update the reference value, and the latest value recorded is suggested. Press ENTER to confirm the value suggested, or CLR to cancel the updating and keep the previous value.

If the SET WIND option in the Setup menu is set to OFF, the reference direction becomes dynamic, thus varying automatically to keep the variation graph within the range of $\pm 45^\circ$. The reference direction value is shown in the top left-hand corner of the graph.



Sailing

The graph at the bottom of the screen shows the instantaneous shift of the true wind direction with respect to the reference direction.

**MENU**

The menu bar, displayed at the top of the screen, allows selecting from the following options:

ROUTE TRACK MARKER SETUP

ROUTE TRK MRK SETUP

ROUTE: To display route information, reverse and delete the route.

TRACK: To enable/disable the track function, delete a track, choose the track color and show the used percentage of track memory.

MARKER: To delete markers, choose the marker color and show the number of markers used and available.

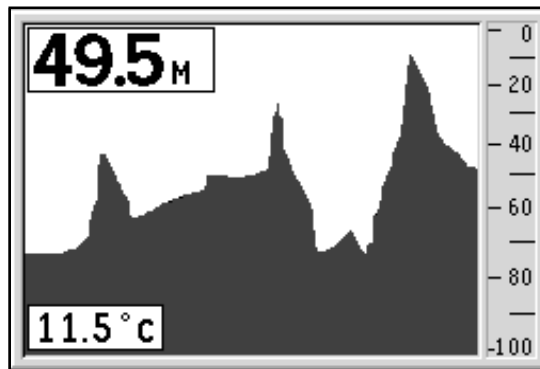
SETUP: To enable/disable and change the plotter's setup.

Advanced

In Advanced mode, the **ROUTE**, **TRACK** and **MARKER** menus allow saving and reading data from the CompactFlash™ cartridge.

DEPTH SOUNDER WINDOW

This window, displayed if the GEONAV is interfaced with a depth sounder, replaces the number indicating the sea depth in the Motor Boating windows with a graph showing the sea bed. If received, the graph shows the water temperature as well.

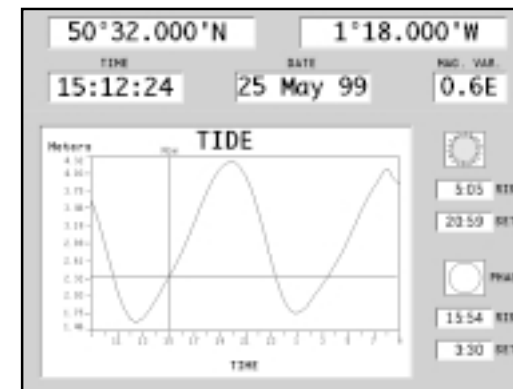


When navigating in waters deeper than sounder operating range or if the boat's speed is too high for depth sounding, data acquisition will be interrupted and the number replaced by “—”.

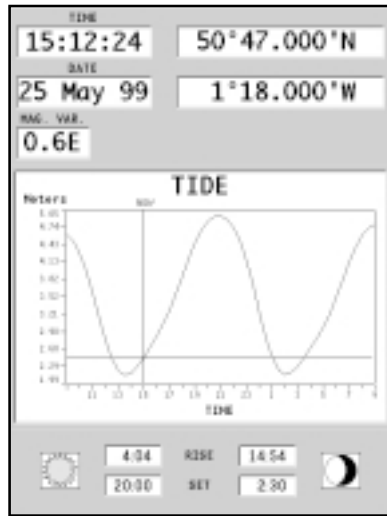
INFO WINDOW

When a NAVIONICS cartridge featuring Tides and Currents data is present, this window displays further information, besides the forecast data supplied by selecting the Tides and Currents station.

The following data is displayed:



- Latitude and longitude at the current boat's position
- Current time and date
- Value of magnetic variation received by the GPS
- Dawn and sunset time
- Moonrise and moonset time
- Moon phase
- Graph of estimated tide level with respect to the current position



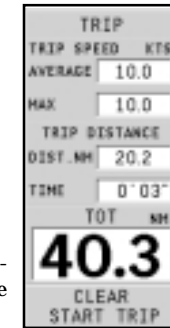
WARNING: Unlike the graph displayed at a T&C station position (accessible through the GOTO function, or by positioning the cursor on the Tides and Currents station symbol) which is as accurate as supplied by hydrographic offices, this graph shows estimated data, being the result of interpolation between the two Tides and Currents stations nearest to the point of interest. The accuracy of the estimate may vary, depending on the coast type, the distance to the nearest stations, and other geographical features.

TRIP WINDOW

The Trip window shows general data relating to the route followed.

- Average speed from departure
- Maximum speed from departure
- Time elapsed from departure
- Partial distance covered from departure
- Overall distance covered

To reset all counters (except for the overall distance) before starting a new journey, press the CLR key.



ROUTE**EDITING A ROUTE (CURSOR MODE)****Creating a waypoint**

Using the joystick, move the cursor on the position desired and press ENTER to insert a waypoint.

To enter further waypoints, move the cursor and press ENTER. The new waypoint will be appended to the existing route.

Up to 99 waypoints per route can be entered, also by using the GOTO function (see the *GOTO* Section) and EBL/VRM functions (see the *EBL/VRM Functions* Section).

Deleting the last waypoint

Press CLR. If the last waypoint is out of screen, the "DELETE WP? ENTER = YES" message will be displayed.

Press ENTER to confirm the deletion.

Deleting a waypoint

Use the joystick to position the cursor on the waypoint to delete and press the CLR key.

Deleting all waypoints in a route

Press the CLR key repeatedly until the "NO WP PRESENT" message is displayed.

Moving a waypoint

Position the cursor exactly on the waypoint to move; press ENTER to capture the waypoint, then move the waypoint to the position desired and confirm the operation by pressing ENTER.

Inserting a new waypoint in a route

Position the cursor exactly on the route leg to edit and press ENTER to capture the leg.

Once captured, the leg will show a thicker line to distinguish it more easily from the other route legs. A window will also show the leg captured and its length.

Move the manual cursor to the position desired, insert the new waypoint and confirm by pressing ENTER.

EDITING A ROUTE (NAVIGATION MODE)

If the manual cursor is displayed, press the PAGE key to enter Navigation mode.

Changing the target waypoint

Use the "Route to a waypoint" function (see the *GOTO* Section).

WARNING: The route will be modified and the new target waypoint selected will be the first waypoint in the route.

Deleting all waypoints

Press the CLR key to show the "DELETE ROUTE? ENTER = YES" message. Press the ENTER key to confirm the deletion or another key to exit.

FUNCTIONS IN THE ROUTE MENU**Route Info**

Route information is displayed in two pages; the first shows general route information, whereas the second contains the geographical coordinates of all waypoints.

Press the PAGE key repeatedly to display the menu bar, select ROUTE, INFO and then press ENTER.

A window will show the following information:

WP NO.: Number of waypoints

WP NAME: Waypoint name

DISTANCE: Distance from START to current waypoint

BRG: Bearing from previous waypoint to current waypoint

TIME: Estimated time from START to current waypoint

FUEL LITERS: Estimated fuel consumption (liters or gallons)

The time to arrive to the waypoint and fuel consumption are displayed provided that estimated speed and fuel consumption values have been entered (see the *Entering speed and fuel consumption data* Section).

WP NO.	WP NAME	DIST. SM	DIR	TIME	FUEL LITERS
START	-----	----	----	----	----
03	MILPITSI	3.69	98°	37'22"	8
04	STARDESI	19.9	90°	1h30'	18
05	ST TROPE	30.9	257°	2h25'	26.4
06	RAPALLO	99.9	60°	4h25'	46.4
07	BONIFACE	68.9	181°	7h42'	73.7
08	BOCCA D'	119.8	20°	8h13'	86.2
09	CALNE	133.3	225°	9h59'	100.7
10	ROGLIO -	148.9	91°	8h49'	129.4
11	PORT VEE	156.7	237°	9h59'	136.5
END	CAPRIA	183.6	16°	8h49'	132.9

To switch to the next page showing the geographical coordinates of each waypoint, use the joystick. Go back to the previous page by the joystick or press the PAGE key to exit.

WP NO.: Number of waypoints

WP NAME: Waypoint name

LATITUDE: Waypoint latitude

LONGITUDE: Waypoint longitude

WP NO.	WP NAME	LATITUDE	LONGITUDE
START	-----	-----	-----
03	MILPITSI	43°50.400 N	9°38.500 E
04	STARDESI	43°51.874 N	10°14.175 E
05	ST TROPE	43°16.321 N	6°28.041 E
06	RAPALLO	44°20.716 N	9°13.999 E
07	BONIFACE	41°23.333 N	9° 8.938 E
08	BOCCA D'	43°40.777 N	10°18.438 E
09	CALNE	42°33.903 N	8°45.499 E
10	ROGLIO -	43°22.886 N	10°52.778 E
11	PORT VEE	41°35.414 N	9°17.069 E
END	CAPRIA	43° 3.809 N	9°38.128 E

Entering speed and fuel consumption data

This piece of information is used to calculate the values displayed in the ROUTE INFO window.



Advanced

Press the PAGE key to display the menu, select ROUTE, INFO and press ENTER. Enter the data required and confirm by pressing ENTER.

Storing a route in the CompactFlash™

Press the PAGE key to display the menu, select ROUTE, STORE and press ENTER. To change the default name and to confirm the operation, use the joystick.

The "ROUTE STORED" message will confirm that the route has been stored correctly. Once stored, the route will disappear from the screen.



Recalling a route from the CompactFlash™

Press the PAGE key to display the menu, select ROUTE, RECALL and press ENTER to open the route catalog; select the route by the joystick and then press ENTER to confirm, or PAGE to exit.

The route recalled will be displayed, the Autozoom function automatically enabled and a window will allow selecting the target waypoint.



Deleting a route

Press the PAGE key to display the menu, select ROUTE, DELETE and press ENTER to confirm.

Advanced

The catalog that lists the routes stored in the CompactFlash™ will show the CURRENT item indicating the route currently displayed. Select the route to delete by the joystick, then press ENTER to confirm.

Advanced | By selecting **CURRENT**, the route currently displayed will be deleted; the route can also be deleted by keeping the CLR key pressed for 3 seconds in Navigation mode.

Reversing a route

Press the **PAGE** key to display the menu, select **ROUTE** and then **REVERSE** (if no route is currently displayed, the "NO ROUTE PRESENT" message is displayed).

The waypoint order will be automatically reversed allowing navigation in the opposite direction. To display information on the new route, select the **ROUTE/INFO** option.

TRACK

The Track function allows recording the track actually followed by the boat. The Track function can be enabled and disabled several times during navigation; in this case, separate track segments will be drawn.

Starting a track

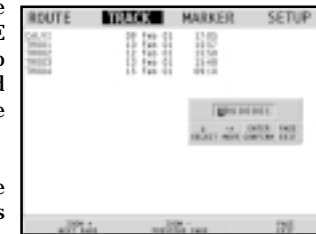
To enable the Track function, press the **PAGE** key to display the menu bar, select **TRACK**, **START** and press **ENTER** to confirm. A small circle on the boat's position will indicate the track starting point.

Stopping a track

To disable the Track function, press the **PAGE** key to display the menu bar, select **TRACK**, **STOP** and press **ENTER** to confirm.

Advanced | Storing a track in the CompactFlash™

Press the **PAGE** key to display the menu bar, select **TRACK**, **STORE** and press **ENTER** to confirm. To change the default file name and confirm the operation, use the joystick.



The "TRACK STORED" message will confirm that the track has been stored correctly. Once stored, the track will disappear from the screen.

Each time a track is stored in the CompactFlash™, the plotter's memory is cleared and the indicator of memory used in the **TRACK** menu is reset to 0%.

Recalling a track from the CompactFlash™

Press the **PAGE** key to display the menu bar, select **TRACK** and

Advanced then RECALL to open the track catalog.

Select the track desired, then press ENTER to confirm the operation or PAGE to exit.

Deleting a track

Press the PAGE key to display the menu, select TRACK, DELETE and press ENTER to confirm.



Advanced The catalog that lists the tracks stored in the CompactFlash™ will show the CURRENT item indicating the track currently displayed.

Select the track to delete by the joystick, then press ENTER to confirm. By selecting CURRENT, the track currently displayed will be deleted.

*Flash
Sunshine*

Setting the track color

The track color can be selected from the menu; press the PAGE key to display the menu bar, select TRACK, COLORS, choose a color by the joystick and confirm. The selected color will be stored together with the track.

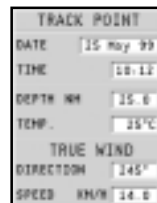
NOTE: The track color cannot be changed while the recording is active.

Displaying and changing track segment data

Position the manual cursor on a point in the track segment.

A window will show the navigation data recorded in that position.

- Recording date
- Recording time
- Sea depth



- Water temperature
- True wind direction
- True wind speed

Wind and depth values are displayed only if available.

By positioning the manual cursor on the starting point of a track segment, a menu will allow changing the segment name, displaying average/maximum speed data, trip length/time, deleting the single segment as well as changing the single segment color.



*Flash
Sunshine*



When the menu pops up, press ENTER to access the options, then move the joystick to select the desired option and press ENTER to confirm.

The data entered is also displayed in the window enabled by the GOTO TRK menu.

Route to a track segment
See the GOTO functions.

MARKERS

Markers are used to identify points of interest to which names and symbols can be assigned.

When a marker is entered, the plotter records also date, time and sea depth and temperature (if available). This data is stored together with the marker name, symbol and color and can be displayed in the window shown by the GOTO MRK menu.

NOTE: Marker names are displayed starting from the 32 NM chart range.

CURSOR MODE

Inserting a marker

Move the cursor to the position desired and press the MARK key. A window will display the symbol and a name automatically assigned to the marker.



Use the joystick and the -ZOOM+ key to change the marker symbol (8 symbols available), name (max. 8 characters) and color according to the type of marker to store (e.g., fishing spots, wrecks, rocks, etc.).

Flash
Sunshine

Press ENTER to confirm the insertion.

NOTE: The cursor can be moved to the desired position also by using most of the GOTO functions. See the GOTO Section for further details.

Changing a marker name/symbol/color

Position the cursor on the marker desired and press ENTER; a window will display the symbol, the name and the color previously assigned to the marker selected. Use the joystick and the -ZOOM+ key to change the marker name, symbol and color. Press ENTER to confirm the operation.

Flash
Sunshine

Deleting a marker

Position the cursor on the marker to delete and press CLR.

NAVIGATION MODE

Inserting a marker

Press the MARK key to insert a marker at the boat's position. A window will display the symbol and the name automatically assigned to the marker; to change the marker symbol, name and color according to the type of marker to store (e.g., fishing spots, submerged wrecks, rocks, etc.), use the joystick and the -ZOOM+ key.

Press ENTER to confirm the insertion.

Route to a marker

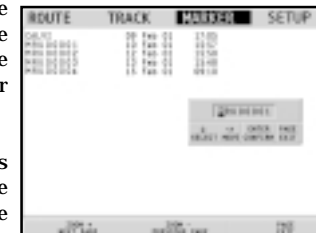
See the GOTO functions.

MAIN MENU

Storing a set of markers in the CompactFlash™

Press the PAGE key to display the menu, select MARKER, then STORE and press ENTER. Use the joystick to change the default name and confirm.

The "MRK. STORED" message will confirm that markers have been stored correctly. Once stored, markers will disappear from the screen.



Each time a set of markers is stored in the CompactFlash™, the plotter memory is cleared and the indicator of the markers available is reset to the maximum value.

Recalling a set of markers from the CompactFlash™

Press the PAGE key to display the menu, select MARKER and then RECALL to open the marker catalog.

Advanced

Advanced | Use the joystick to select the set desired and confirm, or press PAGE to exit.

Deleting a set of markers

Press the PAGE key to display the menu, select MARKER, DELETE and press ENTER to confirm.

Advanced | The catalog that lists the sets of markers stored in the CompactFlash™ will show the CURRENT item indicating the set currently displayed.

Use the joystick to select the set of markers to delete and to confirm. When selecting CURRENT, the set of markers currently displayed will be deleted.

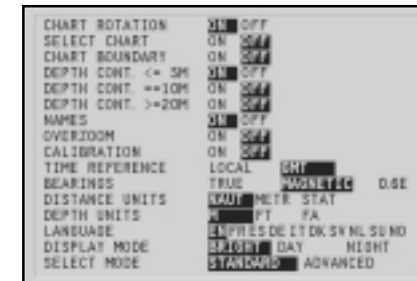
SETUP

The SETUP menu allows setting the available options. Depending on the mode selected, the number of options will change.

To access the SETUP menu, press PAGE repeatedly until the main menu shows up, select the SETUP item, then use the joystick to browse through the options and change the settings.

STANDARD MODE

- Chart Rotation (ON/OFF)
Enables/disables the chart rotation.
- Select Chart (ON/OFF)
Allows selecting the chart to load from the CompactFlash™.
- Chart Boundary (ON/OFF)
Enables/disables the drawing of the boundary of the chart.
- Depth Contours (ON/OFF equal to/below 5 meters; equal to 10 meters; equal to/above 20 meters)
Enables/disables the display of depth contours.
- Names (ON/OFF)
Enables/disables the display of geographical names.



- Overzoom (ON/OFF)
Enables/disables the Overzoom function.
- Calibration (ON/OFF)
Allows entering the position calibration offset.
- Time Reference (LOCAL/GMT)
Allows entering local time.
- Bearings (TRUE/MAGNETIC)
(the number on the right indicates the magnetic variation)
Allows setting the magnetic mode for all bearings.
- Distance Units (NAUT/METR/STAT)
Allows selecting distance units.
- Depth Units (M/FT/FA)
Allows selecting depth units.
- Language (EN/FR/ES/DE/IT/DK/SV/NL/SU/NO)
Allows selecting the language.
- Display Mode (BRIGHT/DAY/NIGHT)
Allows selecting colors suitable for the environment.
- Select Mode (STANDARD/ADVANCED)
Allows switching between standard and advanced mode.

ADVANCED MODE

- Chart Rotation (ON/OFF)
Enables/disables the chart rotation.
- Select Chart (ON/OFF)
Allows selecting the chart to load from the CompactFlash™.
- Chart Boundary (ON/OFF)
Enables/disables the drawing of the boundary of the chart.



- Depth Contours (ON/OFF equal to/below 5 meters; equal to 10 meters; equal to/above 20 meters)
Enables/disables the display of depth contours.
- Overzoom (ON/OFF)
Enables/disables the Overzoom function.
- Set Wind (ON/OFF)
Allows setting the reference direction in wind graphs.
- Bearings (TRUE/MAGNETIC)
(the number on the right indicates the magnetic variation)
Allows setting the magnetic mode for all bearings.
- Display Mode (DAY/NIGHT/BRIGHT)
Allows selecting colors suitable for the environment.
- Tracking Density (DIST/AUTO/TIME)
Allows selecting the tracking interval between fixed distance, fixed time or automatic (in such case, the track is automatically smoothed to save memory).
- Calibration (ON/OFF)
Allows entering the position calibration offset.



- Screen Amplifier (ON/OFF)
Enables/disables the display of geographical names.
- Names (ON/OFF)
Enables/disables the Screen amplifier function.
- Heading Filter (ON/OFF)
Enables/disables the heading value filtering.
- Speed Filter (ON/OFF)
Enables/disables the speed value filtering.

- **Time Reference (LOCAL/GMT)**
Allows entering local time.
- **Select Mode (STANDARD/ADVANCED)**
Allows switching between standard and advanced mode.
- **Distance Units (NAUT/METR/STAT)**
Allows selecting distance units.
- **Depth Units (M/FT/FA)**
Allows selecting depth units.
- **Language (EN/FR/ES/DE/IT/DK/SV/NL/SU/NO)**
Allows selecting the language.
- **Welcome Message (ON/OFF)**
Enables/disables the display of a message in the welcome page, appearing as the instrument is turned on. By selecting ON, a window will allow writing or editing the message.

GOTO

The GOTO function allows creating a route or changing the target waypoint in the current route.

NOTE: As the GOTO menu appears, only the very first menu items are displayed in the Sunshine 8 model. To access the subsequent items, it is necessary to scroll the menu by using the joystick.

Route to a waypoint

Press the GOTO key, select WPT and press ENTER to open the GOTO Waypoint window. Choose a waypoint, press ENTER to confirm or PAGE to exit.



As the GEONAV will plot a new route, the waypoint selected will become the first waypoint in the route, whereas previous waypoints will be deleted.

Route to a port

Press the GOTO key and select PORT by the joystick. Choose the desired port (the latest 8 ports used will be highlighted) from the catalog displayed, then press ENTER to confirm. To scroll the list of ports quickly, press the -ZOOM+ key.



It is also possible to choose directly the first letter in the port name by using the joystick to select it from the bar displayed above the list. To confirm the selection, press ENTER.

If a port features secondary landing places, its name will show a small arrow at the end. To select the secondary landing place from the relevant window, press ENTER and then use the joystick.

Once the desired port has been selected, the GEONAV will insert a waypoint in the port position and append the new leg to the existing route (if no route is available, the new waypoint will be connected to the boat's position).

Press the PAGE key to go back to Navigation mode and enable automatically the Autozoom function.

Route to a marker

Press the GOTO key and select MRK by the joystick. The catalog displayed will list, with respect to each marker, the symbol, the name, the insertion date/time, as well as, if available, the sea depth and temperature values as detected when entered.

NAME	DATE	TIME	DIST	L/D
MARCOLO	29	Apr 00	12.18	11.00
MARCOLO	29	Apr 00	12.18	11.00
MARCOLO	29	Apr 00	12.18	11.00
MARCOLO	29	Apr 00	12.18	11.00
MARCOLO	29	Apr 00	12.18	11.00
MARCOLO	29	Apr 00	12.18	11.00
MARCOLO	29	Apr 00	12.18	11.00
MARCOLO	29	Apr 00	12.18	11.00

Moreover, the catalog shows the number of markers entered in the current page and the number of markers still available. The list can be sorted by using the joystick to select the sort field and confirm.

By using the joystick, choose the desired marker (the latest 8 markers used will be highlighted) from the catalog displayed, then press ENTER to confirm.

Once the desired marker has been selected, the GEONAV will insert a waypoint at the marker position and append the new leg to the existing route (if no route is available, the new waypoint will be connected to the boat's position).

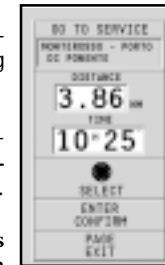
Press the PAGE key to go back to Navigation mode and enable automatically the Autozoom function.

NOTE: To delete a single marker, select it from the GOTO Marker list and press the CLR key.

Route to the nearest service

NOTE: This option is available only with the NAVIONICS cartridges containing the Port Services features. It allows finding and heading for the nearest port featuring the service desired.

Press the GOTO key, select NEAR by the joystick, choose the desired service and press ENTER to confirm, or CLR to cancel the operation.



The GEONAV will show the three destinations closest to the boat's position (if in Navigation mode), or to the cursor's position (if in Cursor mode), and position automatically on the closest destination (flashing).

Select one port at a time by using the joystick; a window will show the distance and time to arrive (estimated on the boat's current speed). Press ENTER to confirm the selection.

The GEONAV will insert a waypoint in the port selected, delete automatically the existing route (if in Navigation mode), or append the waypoint to the existing route (if in Cursor mode), then go back to Navigation mode and enable automatically the Autozoom function.

Route to a track segment

Press the GOTO key and select TRACK by the joystick. A window will show, for each track segment, the line color, the name, the recording start date and time as well as the recording duration and length.

NAME	DATE	TIME	DIST	L/D
TRACK001	29	Apr 00	12.18	11.00
TRACK002	29	Apr 00	12.18	11.00
TRACK003	29	Apr 00	12.18	11.00
TRACK004	29	Apr 00	12.18	11.00
TRACK005	29	Apr 00	12.18	11.00
TRACK006	29	Apr 00	12.18	11.00
TRACK007	29	Apr 00	12.18	11.00
TRACK008	29	Apr 00	12.18	11.00

The list can be sorted by using the joystick to select the sort field and to confirm. Use the joystick to select the target segment (the latest 8 segments used will be highlighted) from the catalog and to confirm.

The GEONAV will position the manual cursor at the beginning of the track segment selected; insert a waypoint by pressing ENTER or a marker by pressing MARK.

Route to a point (Lat/Lon)

Press the GOTO key and select L/L by the joystick. Enter the geographical coordinates desired and confirm by pressing ENTER.

The GEONAV will move the manual cursor to the position selected; insert a waypoint by pressing ENTER or a marker by pressing MARK.

Route to a point (Range/Bearing)

Use the EBL/VRM to set the bearing and the range desired (see the *EBL/VRM functions* Section). Insert a waypoint by pressing ENTER or a marker by pressing MARK.

Tide or current forecast at the nearest survey station

NOTE: This function is available only with the NAVIONICS cartridges containing Tides and Currents data.

This function allows displaying, within the space of twenty-four hours with respect to the selected date, the tide level and tidal current speed and direction at a survey station in the vicinity.

Unlike the estimated data shown in the Info window, this forecast is much more accurate, being supplied directly by tidal surveying stations.

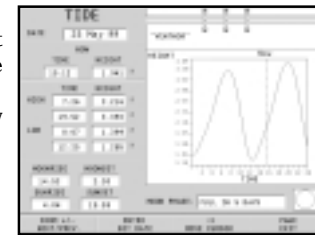
Press the GOTO key, select NEAR by the joystick, choose the Tides or Currents service, then press ENTER to confirm. The GEONAV will allow selecting one of the three nearest Tides

and Currents stations. Use the joystick to choose the station desired and to confirm.

A window will show the information reported below.

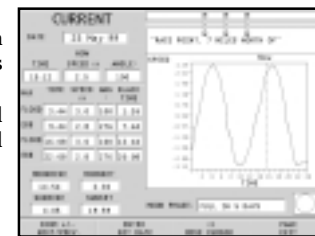
Tide station

- Name of the station
- Forecast reference date
- Time and height with respect to the cursor's position in the graph
- Time and height of high/low water
- Dawn and sunset time
- Moonrise and moonset time
- Moon phase
- Tide level graph (24 hours)



Tidal current station

- Name of the station
- Forecast reference date
- Time, speed and direction with respect to the cursor's position in the graph
- Time, speed, direction and slack time of daily flood and ebb streams
- Dawn and sunset time
- Moonrise and moonset time
- Moon phase
- Tide level graph (24 hours)



In the both cases above, the default date is today. A different date can be set by pressing **ENTER** or **-ZOOM+**.

NOTE: The same information can be accessed by positioning the manual cursor on the icon of a Tides or Currents station, and pressing **ENTER** to confirm.

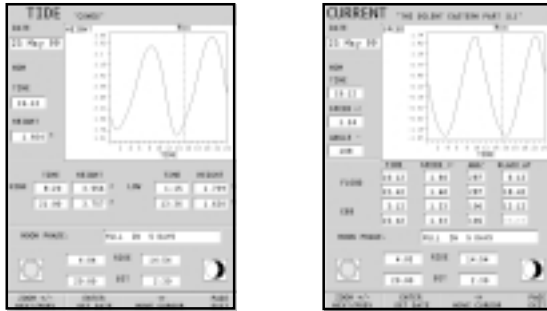


TABLE OF CONTENTS

INTRODUCTION	4
CHARACTERISTICS	5
INSTALLATION AND PRECAUTIONS	9
CONNECTIONS	12
CARTRIDGE INSTALLATION	14
KEYBOARD	16
DIAGNOSTIC	19
NAVIONICS ELECTRONIC CHARTS	20
GRAPHIC ITEMS	25
FUNCTIONAL CHARACTERISTICS	27
QUICK TOUR	35
OPERATING MODES	38
SATELLITE WINDOW	40
MOTOR BOATING WINDOWS	42
SAILING WINDOWS	44
MENU	47
DEPTH SOUNDER WINDOW	48
INFO WINDOW	49
TRIP WINDOW	51
ROUTE	52
TRACK	57
MARKERS	60
SETUP	63
GOTO	67
AUTOPILOT	73