GEONAV Multy

USER AND INSTALLATION MANUAL

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READ THIS WARNING BEFORE USING
GEONAV-Multy

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: Technical characteristics and functions described in this manual are subject to change as a result of improvements or changes to the product.
This unit runs Linux, developed under GNU General Public License. Linux is registered trademark by Linus Torvalds.

INTRODUCTION

Thanks for chosen **GEONAV-Multy**.

The **GEONAV-Multy** is a <u>control unit</u> that can be interfaced with <u>any kind of external SVGA displays</u>, 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-Multy and a NAVIONICS Gold™ electronic chart, you will never get lost even in case of fog, bad weather or dark.

The **GEONAV-Multy** allows controlling the autopilot directly (Easy Pilot function) and, thanks to the unlimited capacity of the CompactFlash™ cartridges, a large amount of route, track and marker data can be stored on your PC.

The **GEONAV-Multy**, if connected with the wind station and echo sounder, displays the relevant data.

The connection supports both the NMEA 0183 standard protocol and Ethernet, suitable for the network connection of multiple GEONAV stations.

The Route functions will allow you to plan a trip, while, thanks to NAVIONICS Gold™ electronic charts, you will always know exactly the boat's position. NAVIONICS Gold™ charts are available for all the most popular boating areas, provide a large amount of data - thanks to the object-oriented technology - 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 Gold™ 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-Multy** internal software.

Part 1:

CHARACTERISTICS

General Characteristics
• Heading vector
• GOTO function (Waypoint, Port, Nearest, Marker, Track, Lat/Lon, R/B)
• CompactFlash™ cartridge
• Port Service, Tide and current information
• EasyView™ function
• X-plain™ function
• Screen Amplifier™ function
• Autozoom™ function
• Overzoom™ function
• 8 marker shapes, 8-character name
• Storage of track data as date, time, latitude/longitude, depth, water temperature, wind data, etc.
• Storage of routes, tracks and markers in separate files on CompactFlash™
• Transfer of routes, tracks and markers from one unit station to another through Ethernet connection
• EBL and VRM functions
• Reverse route function
• Selectable depth units (meters, feet and fathoms)
• Speed and heading filters
• Display of depth and water temperature data (if interfaced with an echo sounder)
• Display of wind data (if interfaced with wind instruments)
• ARPA display function
• Easy Pilot function for easy and direct control of autopilot

Electrical Characteristics
• Power supply: 9 to 36 Vd.c.
• Power consumption: Max. 7W
• Auxiliary voltage output: 10 to 36 Vd.c.
(same as input voltage) - Max. 250 mA
• Protection against: Reverse polarity
Input over-voltage (up to 40 Vd.c.)
Over-current at auxiliary voltage output
(over 250 mA)
• Operating temperature: 0°C to +55°C

• Storage temperature: -20°C to +70°C

Memory
• Up to 100 waypoints per route
• Up to 5000 track-points (multiple tracks)
• Up to 3000 markers per group
• Number of routes, tracks and markers: unlimited, depending
on the size of the CompactFlash™ used

Interface
• VGA output, 800 x 600 resolution, MULTYSINC screen connection
• 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
• from ARPA: TLL,TTM
• 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
• Power supply cable
• Auxiliary power supply cable
• VGA cable
• VGA cable adapter
• User and Installation Guide

Water resistance
The **GEONAV-Multy** is water resistant but not waterproof; therefore it should not be immersed totally in water.
The cartridge slot cover, located on the unit'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 since alcoholic products may damage the case.

INSTALLATION
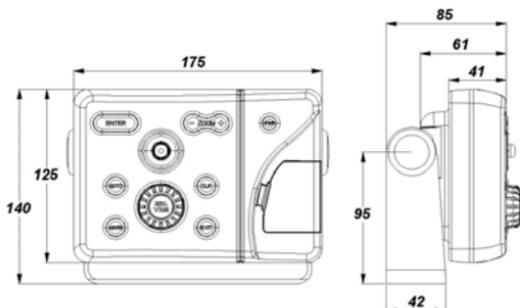
Precaution

GEONAV-Multy has to be located at a minimum distance of 50 cm of the compass. Make sure that the cable insulated covering is connected to the general ground of the boat.

Panel mounting

Use the drilling template supplied with the unit 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

Use the cutting template supplied with the unit to cut the panel.

Apply a layer of silicone glue 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 is correctly fixed; if necessary, apply
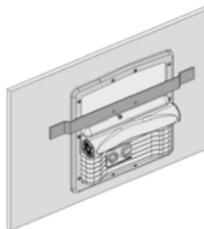
additional metal brackets (not supplied in the package) as shown in the relevant figure.

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

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

CONNECTIONS

Power supply and data connector (9 pins)
Power supply
      1   + VDC
      2   GND (ground)

NMEA 0183 data input
      3   GPS IN +
      3   GPS IN –

NMEA 0183 data output
      5   DATA OUT +
      4   DATA OUT –

Auxiliary output voltage (Vaux)
      7   Vaux+, 250mA *
      8   GND
      9   SHIELD
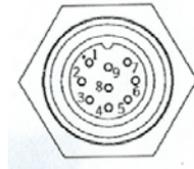
* Vaux voltage is the same as the unit's input voltage.

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-Multy** will add the following messages (if received from the position sensor): GGA - RMC – ZDA

Auxiliary connector (7 pins)
Allows connecting the GEONAV-Multy to an auxiliary instrument equipped with NMEA 0183 interface (e.g., echo-sounder and mast head transducer).
NMEA 0183 auxiliary data input
    1   DATA IN +
    2   DATA IN -
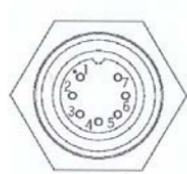
Network connector (6 pins)
GEONAV Ethernet connections
    1   I AN GND 1
    2   RX+
    3   RX-
    4   I AN GND 2
    5   TX+
    6   TX

VGA connector
    1   Video Green
    2   GND RGB
    3   V sync
    4   H sync
    5   GND
    6   Video Blu
    7   Video Red
    8   SHIELD

CARTRIDGE INSTALLATION

Installing the Compact Flash ™
Open the cartridge slot cover located on the **GEONAV-Multy'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 GEONAV-Multy's. This kind of damage is not covered by the warranty.

Removing the Compact Flash™
Make sure that the unit is perfectly dry.
Open the cartridge slot cover, 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 unit. However, the unit 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. 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

Part 2

THE CONTROL UNIT

GLOSSARY AND ABBREVIATIONS

ARPA = Automatic Radar Plotting Aids
CLR = clear
CPA = Closest Point of Approach
COG = Course Over Ground
EBL = Electronic Bearing Line
FA = Fathoms
FIX = Global Positioning System
FT = Feet
Heading vector= Direction line
MN = Nautical mille
MOB = Man Over Board
ON/OFF = Switches OFF/ON
PWR = Power
R&B = Range and Bearing
XTD = Cross track distance
SOG =Speed Over Ground
STD = standard
TCPA = Time to Closest Point of Approach
VRM = Variable Range Marker
WP =Waypoint

KEYBOARD

PWR
• Switches the GEONAV-Multy ON
• Switches the GEONAV-Multy OFF if held pressed for more than 3 seconds)
• Restores the functions if held pressed for more than 10 seconds)

ZOOM - / ZOOM +
• Increases/decreases the chart scale

ENTER
Cursor mode:
• Inserts a waypoint at the cursor's position
• Inserts a marker at the cursor's position (if held pressed)
In the main menu.
Confirm a selection

GOTO
•Accesses the main menu and allows to 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 Range/Bearing).

Warning: activates M.O.B if held pressed for few seconds.

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

EXIT
• Cancels a selection
Cursor Mode:
• Switches from Cursor mode to Navigation mode
Navigation Mode:
• Turns the information pages.

MARK
Inserts markers

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
. Selects characters
. If pressed, displays the chart object attributes

KNOB
• Adjusts EBL/VRM parameters, if pressed, switches from EBL to VRM
• Selects the several options from the menu windows
• Scrolls letters and numbers when entering data in the windows
Menu:
• Switches from vertical to horizontal scrolling and confirms the selection
• Scrolls characters and numbers in the Marker, lat/Long and R&B windows.

DIAGNOSTIC

The **GEONAV-Multy** 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 **PWR**, while pressing the **ENT** key.

The **GEONAV-Multy** 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: pressing simultaneously the PWR and CLR keys can clear the internal memory. This operation will delete all the settings stored in the GEONAV-Multy 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 holding the PWR key pressed for more than 10 seconds. This function is useful if the unit is panel mounted or flush mounted and the power switch cannot be easily accessed.

Part 3

SETUP

The Setup menu allows setting the available options.

To access the Setup menu, press **GOTO** to display the main menu (the NEAREST option will be displayed by default), then select SETUP by using the joystick.

The menu items are grouped in five sets. When selecting a set by the joystick, the list of the available options will be displayed.

Press **ENTER** to select one set, then use the joystick to switch from one option to another and edit the setting. To go back to the set list, press **EXIT**.

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Display

• <u>Mode</u> (BRIGHT/DAY/NIGHT)

Selects the colours suitable for the environment.

• <u>Safety Depth</u>**.** (OFF/2m/5m/10m/20m)

Enables the display of the areas corresponding to the depth safety contour.

• Depth Contours (ALL/5m/10m/20m/OFF)

Selects the display of depth contours.

• <u>Easy View</u> (ON/OFF)

Enables/disables the Chart Magnification function.

• <u>Markers</u> (ON/OFF)

Enables/disables the display of markers (present in ECS mode only).

• <u>Chart Rotation</u> (ON/OFF)

Enables/disables the Chart Rotation function. (OFF by default)

• <u>Set chart Details</u> (ON/OFF)

• By selecting ON and then moving the joystick, it is possible to select, one of the three settings available: STD - equivalent to the standard display setting, as defined by ECS regulations - ALL, that enables the display of all the items on the chart, or, by choosing USER that enable/disable the display

of the single items. Only USER can be modified using the joystick up/down to select the option and then left/right to confirm or cancel.
• <u>Overzoom™</u> (ON/OFF)
Enables/disable the Overzoom function.
• <u>Presentation</u> (INTER./U.S.)
Selects the symbols and colours of chart presentation.
• <u>Screen Amplifier™</u> (ON/OFF)
Enables/disables the Screen Amplifier function.
• <u>Light Sectors</u> (AUTO/ON/OFF)
Enables/disables the display of light sectors. If set to AUTO, the light sectors are shown provided that the display mode is set to NIGHT.
• <u>Chart Boundaries</u> (ON/OFF)
Enables/disables the display of chart boundaries. (OFF by default).
• <u>Own Ship Icon</u>
Selects the icon that will identify the ship's position on the screen.

Navigation
• <u>Anchor alarm:</u> (OFF/15m/30m/50m) enables/disables the alarm and sets the distance.
Wind: sets degrees and constant direction.
• <u>Bearings</u> (TRUE/MAG)
Sets the magnetic mode for all bearings.
• <u>Speed Filter</u> (ON/OFF)
Enables/disables the speed value filter
• <u>Track Density</u> (DIST/AUTO/TIME)
Selects and sets the tracking interval between fixed distance, fixed time or automatic (in this case, in order to save memory,

the track is automatically smoothed).
• <u>Heading Filter</u> (ON/OFF)
Enables/disables the heading value filter.
• <u>Set XTD Limit</u> (ON/OFF)
Sets the maximum deviation allowed from the route set. (OFF by default).
• <u>Calibration</u> (ON/OFF)
Calibrates the ship's position received by the GPS.
• <u>Route Plan</u> (GREAT C./RHUMB L.)
Selects the Route Planning mode between Great Circle or Rhomb line.

By selecting "Great Circle" (by default), the system will place automatically several WP on the route.

Units &Languages
• <u>Sets Time</u> (LOCAL/GMT), Enters local time
.• <u>Language</u> (EN/FR/ES/DE/DK/IT/SV/NL/SU/NO/GR)
Select the language.
• <u>Distance Units</u> (NAUT/METR/STAT)
Selects distance units.
• <u>Depth Units</u> **(**M/FT/FA)
Selects depth units.
• <u>Network</u> (ON/OFF)
Enables/disables the network connection
• <u>Network IP address</u> (ON/OFF)
Changes the network settings
• <u>Welcome Message</u> **(**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.

Windows
• Selects the auxiliary windows to display. For every window, a preview image - whose display can be enabled/disabled (ON/OFF) - is available. See navigation mode paragraph.

ARPA
• <u>Activate ARPA</u> (ON/OFF)
Enables/disables the display of ARPA targets.
• Set CPA/TCPA Limits (ON/OFF)
Sets the limits for CPA (Closest Point of Approach) and TCPA
(Time to Closest Point of Approach) alarms.

Select Chart
With available fix, the actual chart is automatically displayed. Without fix, the

chart can be selected by cursor. By pressing **ENTER** a window will show the catalogue of the charts stored in the cartridge. An asterisk marks the chart currently loaded.

. Select the new chart by the joystick and press **ENTER** to confirm the selection or **EXIT** to exit. Press **GOTO** to display the information associated with the chart.

Part 4

NAVIONICS ELECTRONIC CHARTS

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

NAVIONICS electronic charts contain a detailed set of symbols, similar to those used on official nautical charts.

To display chart boundaries, press the **GOTO** key to display the menu, select SETUP, then CHART BOUNDARIES 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 decrease the chart scale by the **ZOOM+** key to display the details of the area covered by the cartridge.

The maximum detail level is obtained within port plans where the smallest point on screen can be equivalent to approximately 1 meter, depending on the cartridge type and coverage.

Increasing/decreasing the chart scale

Press the **-ZOOM+** key. A small segment shows the current chart scale in the upper left-hand corner of the screen. Chart scales can range from 512 NM down to 40 ft in Overzoom mode.

Abbreviated NAVAID characteristics: X-PLAIN function
Position the manual cursor on the navaid symbol. By pressing the joystick, a window will show the abbreviated characteristics relative to the navaid selected. Then, by pressing again the joystick a second window will display the detailed information.

Converting depth values into the units set.
Press **GOTO** 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).

Light characteristics

FL	5S	28M

Abbreviations:

FOR LIGHT	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

FOR PERIOD	FOR RANGE
..S xx seconds ..	M xx nautical miles.

The display of the light sector can be enable/disable from the SETUP menu.

Chart presentation mode
The symbols used to represent the objects on the chart (buoys, lights, landmarks, etc.), as well as chart colours, can be selected between paper-

chart International or US styles details can be selectively enabled or disabled from the SETUP/CHART DETAILS menu.

Depth contours

This function allows the user to select the display of depth contours; the options available are:

OFF: no depth contour displayed

5m: display of contours with depths up to 5 meters

10m: display of contours with depths up to 10 meters

20m: display of contours with depths up to 20 meters

ALL: all depth contours displayed.

Safety contours

This function allows the user to display the depth areas corresponding to the safety contour desired. The options available are:

OFF: no depth area displayed

2m: areas with depths up to 2 meters in dark blue

5m: areas with depths up to 2 meters in dark blue, up to 5 meters in blue

10m: areas with depths up to 5 meters in dark blue, up to 10 meters in blue

20m: areas with depths up to 10 meters in dark blue, up to 20 meters in blue

The areas whose depths are over the limit set, and therefore navigable under safety conditions, will be displayed in white. Dry line areas are always displayed in green.

NOTE: The mentioned colours are those used in the DAY mode. In NIGHT mode, the areas with depths over the limit set, and therefore navigable under safety conditions, are in black, whereas the colours below the limit are dark blue for higher depths and blue for lower depths (e.g. 5m: areas with depths up to 2m displayed in blue, up to 5m in dark blue).

Displaying port services

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. Press **ENTER** to confirm.

First Aid services   Information's

Engine, boat, electronic, repairs   Other services

 Drinking water Fuel

 Tourist services and shops Tide Station.

 Current Station

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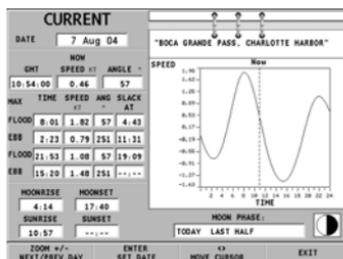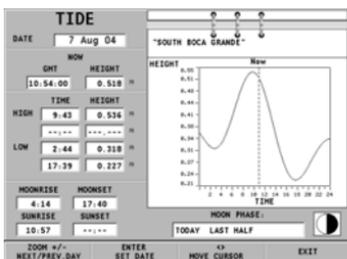
NOTE: This function is available only with the NAVIONICS cartridges containing Tides and Currents data.

GRAPHIC ITEMS

Besides chart data, the GEONAV-Multy
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 colour.

2 – Track
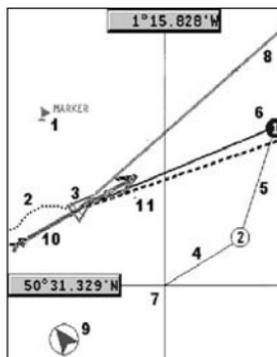
Recording of the track actually followed by the boat; the track is displayed as a coloured dashed line.

3 – Boat 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 **EXIT** key and switch to Navigation mode.

5 – Route leg

Part of route between two waypoints.

6 – WayPoint = WP

A circle and a number identify waypoints. The route starting point is marked by the "X" symbol. The target waypoint is identified by a filled square.

7 - Cursor

Indicates the position expressed in geographical coordinates (latitude and longitude). It is displayed when the GEONAV-Multy 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 – Lay line

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 lay line crosses the target waypoint.

Part 5

QUICK START

GEONAV-Multy is easy to use. We recommend that you use it intuitively since pressing an incorrect button will cause no damage.

Make sure that the GPS receiver is connected, insert a Compact Flash™ cartridge and press the **PWR** key. A message will warn the user that electronic nautical charts do not replace official government charts.

Press ENTER to enable the GEONAV mode and to display the satellite window. This 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.

LAT.	33°05.920'N	14·10·49
LON.	11°49.890'E	7 Aug 04

KNOTS	TRUE	ALTITUDE H	FIX
6.0	273°	- - - -	Fix OK

The default language is English. To change the language, press **GOTO** to display the menu, 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. Windows will display the boat's speed, route, chart scale and local time.

The GEONAV is in Navigation mode; by the joystick, it is possible to switch to Cursor mode (editing mode). Two windows show the cursor position. A biggest window displays bearing, distance and time to go.

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. (With FIX, the target WP will be squared).

The windows will also show the time to reach the target waypoint, distance, bearing and estimated time to arrive. Press the **EXIT** 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
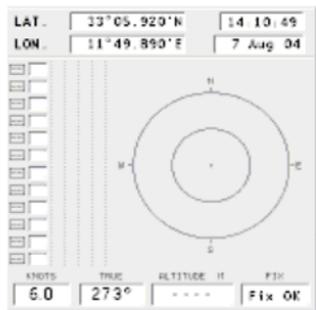
deleted by pressing the **CLR** key (Cursor mode), starting from the last entered.

To go back to Navigation mode, press **EXIT**.

If an autopilot is connected to the **GEONAV-Multy**, 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 functions as well. See the GOTO Section for more details.

The NAVIONICS Gold™ charts provide detailed information that can be displayed at any time. By using the joystick, positions the cursor on the chart item desired (symbol for light, buoy, depth area, etc.) and then press the joystick; the information relative to the items situated in that given position will be shown. Use the joystick to scroll the information list, and then press **EXIT** to exit and select another item. Press **EXIT** again to go back to Navigation mode.

OPERATING MODES

When switching on the **GEONAV-Multy**, it is possible to select one of the three main operating modes:

Press the **PWR** key and wait for the message on official nautical charts to show (if required, select one chart among those contained in the cartridge), and then press **EXIT** to enable the STD mode, or **ENTER** to enable the GEONAV mode. It is also possible to press **GOTO** to enter the DEMO mode, in which the unit automatically shows, in sequence, different views relative to the chart currently loaded.

STD Mode (ECS)

This mode allows displaying the chart data according to the RTCM standard. During navigation, only the ship's position, the heading vector and a set of chart items - defined by the applicable regulations (and known as standard display) – are displayed at full screen. Markers are not displayed and navigation data are made accessible only by quitting the standard display. By enabling the manual cursor by the joystick, the markers will show again, on condition that the relevant option on the Setup menu (MARKERS ON/OFF) has been selected.

GEONAV Mode

This is the unit standard mode. During navigation, the windows showing position and route (if present) data, as well as the waypoints and markers, are enabled. It is not possible to disable the marker display, whose relevant option does not appear in the Setup menu. In Geonav mode, the unit displays different types of data, according to the operating mode enabled (Cursor mode or Navigation mode).
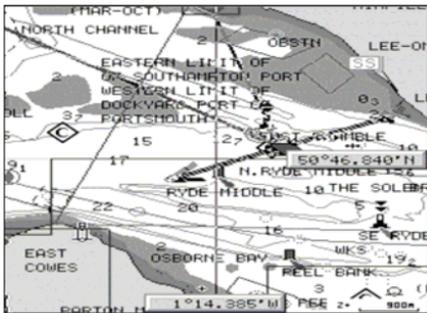
CURSOR Mode

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-Multy** will display the following data:

• Route overall length

• Time to the end of the route (estimated on the speed value manually entered in the ROUTE menu; see the *Route* Section)

• Distance from the last waypoint to the cursor

• Chart scale

To edit the existing route, move the cursor by using the joystick.

The GEONAV-Multy 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 scale

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.

When 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 **EXIT** key.

NAVIGATION Mode

By pressing the **EXIT** key repeatedly, it will be possible to access the several windows available, provided that they have been previously enabled by the appropriate option of the Setup menu.

When the fix is valid and **no route is present**, the window sequence is the following:
NAVIGATION > DEPTH SOUNDER > TRIP > SATELLITE > GENERAL INFO > TIDE INFO > RUNWAY

When a route is present, the window sequence changes as follows:
SAILING   >
NAVIGATION   >
DEPTH SOUNDER >
TRIP > SATELLITE >GENERAL INFO >
TIDE   INFO   >
RUNWAY
The Depth Sounder window is displayed
provided that data is received from a depth sounder.

If data is received from the wind instrument, by opening the wind window, an arrow on the ship's position will indicate the true wind direction. If a route is present, the Sailing windows will be displayed.

In Navigation mode:
 The cursor is not displayed on the screen.
 It is possible to accede to the depth-sounder window.
.Geonav-Multy will update automatically the boat position.

"Standard Display" mode
To hide the Navigation windows and display a full screen chart, press **GOTO** and **EXIT** at the same time. Press any key to show the windows again.
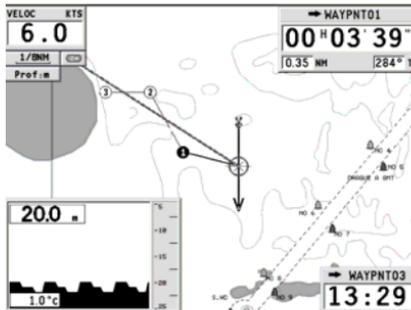
OTHER FUNCTIONS

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

Depth Sounder
If connected to a depth sounder, the GEONAV will, show a graph of the seabed or the relevant data in numerical form. The depth value can be expressed in meters (default value), feet or fathoms. *(see Setup)*.

Sailing Function
If connected to an anemometer, the **GEONAV-Multy** will automatically enable the Sailing mode, once the wind speed and direction data have been received, and provided that the Sailing window is enabled via the Setup menu.

Chart Rotation
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 **GOTO**, select SETUP, then CHART ROTATION and ON. A message will prompt the user to select the chart scale before activating the chart rotation. Confirm by pressing **ENTER**. The northern direction will be indicated by the symbol:
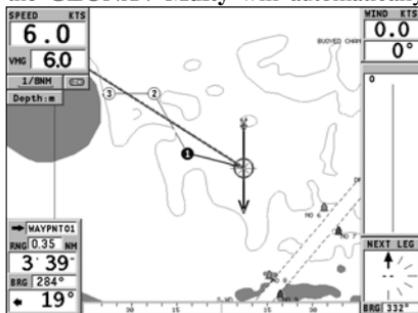
No Chart Rotation

Chart Rotation

AUTOZOOM

With the Autozoom™ function the **GEONAV-Multy** will always display automatically the boat's position and the target waypoint at the best available chart scale. 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-Multy 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. This function will be enabled provided that no waypoint has been previously entered.

EBL/VRM

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.

To insert a waypoint where the EBL and VRM intersect, press **ENTER**; to insert a marker, hold **ENTER** pressed. Range and bearing values are

displayed in the lower right-hand side 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

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 colour, as the boat starts following the new route; the planned route will be abandoned, although displayed.

To go back to the planned route, thus cancelling the temporary correction, press **CLR**.

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

Overzoom™

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 add OVZ to the scale displayed in the Navigation window.

To enable/disable the Overzoom function, select SETUP, OVERZOOM and ON/OFF.

Easy View

Improves the readability of the names and navaids, acting as a magnifying glass at every zoom level.

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.

Press **GOTO** and then, by using the joystick, 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 General Info window will be marked by (*).

To cancel the calibration, press **GOTO**, 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 **GOTO** and then, by using the joystick, select SETUP, SET TIME and then LOCAL.
The joystick will allow entering local time as well as confirming and saving the operation. To cancel local time, press **GOTO**, select SETUP, SET TIME and then GMT.

Anchor Alarm
To set the anchor alarm press GOTO, select SETUP/NAVIGATION, then ANCHOR ALARM (OFF, 30m, 50 m). A visual and acoustic warning will be activated in case the boat position will change more than the maximum set limit.

Colours
Besides displaying colour nautical charts, the **GEONAV-Multy** allows selecting the track and marker colours.
Press the GOTO key to access the menu, select TRACK or MARKER, then COLORS and confirm by pressing ENTER; choose the colour desired and confirm the selection.
The colour of markers can also be selected when entered or edited, whereas the track segment colour can be selected by positioning the manual cursor on the segment itself.
The colour of chart items can be chosen from DAY, NIGHT or BRIGHT. Press GOTO to display the menu, select SETUP, DISPLAY MODE and then DAY, NIGHT or BRIGHT.

Part 6

MAIN MENU

The main menu bar, that appears when pressing the GOTO key, allows accessing the following options:

*NOTE: The majority of menu items, once selected, show a series of submenus. Use the joystick to move from one menu to another and press **ENTER** to choose one item.*

NEAREST
To plan a route to the nearest port service. (displayed by default).
The symbols will appear only if the services are present in the actual chart.

SETUP
To enable/disable and change the **GEONAV-Multy**'s setup.

ROUTE
To display route information, reverse and delete the route, set the consumption data and save or read data from the cartridge.

TRACK
To enable/disable the track function, delete a track, choose the track colour, show the used percentage of track memory and save or read data from the cartridge.

MARKER
To recall, delete markers, choose the marker colour, show the number of markers used and available, and save or read marker data from the cartridge.

PORT
To create a route to a selected port in the list of all the ports included in the CF.

LAT/LONG:
To plan a route to a known geographical position.

R&B
To plan a route to a position whose range and bearing values are known.

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 functions available from the main menu.

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. 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.

Navigation Mode

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

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.

ROUTE MENU FUNCTIONS.

Info Route:

Press GOTO to display the main menu, and then select ROUTE. A window will show the following information:

WP name: Waypoint name
Distance: Distance from START to current waypoint
Time: Estimated time from START to current waypoint
BRG: Bearing from previous waypoint to current waypoint
LAT/LONG: WP position
Consumption: Estimated fuel consumption (litres 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: press the GOTO key, select ROUTE SET/SPEED/ CONS. and press ENTER. Use the joystick to enter the data required and to confirm the operation.

To move within the page and scroll the adjacent pages, use the joystick. To go back to the menu, use the joystick; to exit, press the EXIT key

Storing a route in the CompactFlash™

Press the GOTO key to display the menu, select ROUTE, STORE and press ENTER. To change the default name, use the joystick.
To confirm the operation, press ENTER.
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 GOTO key to display the menu, select ROUTE, RECALL
and press ENTER to open the route catalogue; select the
route by the joystick and then press ENTER to confirm, or EXIT 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 GOTO key to display the menu, select ROUTE, DELETE and press ENTER to confirm.

The catalogue 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. 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 GOTO key to display the menu, select ROUTE and then REVERSE (if no route is currently displayed, the "NO ROUTE PRESENT" message will appear).

The waypoint order will be automatically reversed allowing navigation in the opposite direction.

Changing the target WP:

Press the GOTO Key, select ROUTE and move the cursor within the waypoint list by using the joystick. Press ENTER to confirm or EXIT to exit.

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

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 GOTO key to display the main menu, 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 GOTO key to display the main **MENU, SELECT TRACK, STOP AND PRESS ENTER TO CONFIRM.**

Storing a track in the CompactFlash™
Press the GOTO key to display the main menu, select TRACK, STORE and press ENTER to confirm. To change the default file name, use the joystick. To confirm the operation, press ENTER.
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 **GEONAV-Multy**'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 GOTO key to display the main menu, select TRACK and then RECALL, to open the track catalogue.
Select the track desired, and then press ENTER to confirm the operation or **EXIT.**

Deleting a track
Press the GOTO key to display the main menu, select TRACK, DELETE and press ENTER to confirm.
The catalogue 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.

Setting the track colour

The track colour can be selected from the menu; press the GOTO key to display the main menu, select TRACK, COLORS, choose a colour by the joystick and confirm the selection by pressing ENTER. The selected colour will be stored together with the track.

NOTE: The track colour 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 colour.

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

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 colour, the name, the recording start date and time as well as the recording duration and length.

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 catalogue and then press ENTER to confirm.

The GEONAV-Multy will position the manual cursor at the beginning of the track segment selected; insert a waypoint by pressing ENTER, or a marker by holding ENTER pressed.

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 catalogue and then press ENTER to confirm.

The GEONAV-Multy will position the manual cursor at the beginning of the track segment selected; insert a waypoint by pressing ENTER, or a marker by holding ENTER pressed.

MARKS

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

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

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

Inserting a marker (cursor mode**)**

Move the cursor to the position desired and hold the ENTER key pressed. 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 colour

according to the type of marker to store (e.g., fishing spots, wrecks, rocks, etc.). Press ENTER to confirm the insertion.

Changing a marker name/symbol/colour

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

Deleting a marker

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

Inserting a marker (navigation mode**)**

Hold the ENTER key pressed 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 colour 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

Press the GOTO key and select MARKER by the joystick. The catalogue 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.

Moreover, the catalogue 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 ENTER to confirm.

By using the joystick, choose the desired marker (the latest 8 markers used will be highlighted) from the catalogue 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 EXIT 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 CLR.

FUNCTIONS IN THE MARKER MENU

Storing a set of markers in the CompactFlash™

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

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 GEONAV-Multy 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 GOTO key to display the menu, select MARKER and then RECALL, to open the marker catalogue.

Select the markers set desired by using the joystick, and then press ENTER to confirm the operation, or EXIT to exit.

Deleting a set of markers

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

The catalogue 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 press ENTER to confirm. When selecting CURRENT, the set of markers currently displayed will be deleted.

GOTO FUNCTION

The GOTO function allows to move into the main menu, to insert an immediate WP to a port, a services, a survey station, Lat/Long, etc.

PORT

Press the GOTO Key, select PORT by the joystick, choose the desired port in the list or by inserting one or more characters with the joystick (left/right to accede the box, up/down to type characters).

Where the port has several marinas, a submenu will be opened to display the list of these marinas. Select in the list and press ENTER or joystick to confirm.

Once the desired port has been selected, the GEONAV-Multy 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 EXIT key to go back to Navigation mode and enable automatically the Autozoom function.

NEAREST

Press the GOTO key, NEAREST will be displayed by default, by using the joystick, choose the desired service (water, repairs, hospital, fuel, etc) and press ENTER to confirm, or EXIT to cancel the operation.

The GEONAV-Multy will show the three destinations closed to the boat's position and will display automatically the route to the closest one (flashing).

Select one destination 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 service selected, delete automatically the existing route then go back to Navigation mode and enable automatically the Autozoom function.

The NEARESTSURVEY STATION 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.
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 then press ENTER 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
• Sunrise and sunset time
• Moonrise and moonset time
• Moon phase
• Tide level graph (24 hours)
<u>Tidal current station</u>
• 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
• Sunrise and sunset time
• Moonrise and moonset time
• Moon phase
• Tide level graph (24 hours)
In the both cases above, the default date is today. Pressing ENTER or - ZOOM+ can set a different date.

NOTE: positioning the cursor on the icon of a Tides or Currents station, and pressing ENTER can access the same information.

R&B, LAT/LONG:
Press **GOTO** Key**,** select the option by the joystick, and then insert data in the window. Press **ENTER** to confirm.

ARPA FUNCTIONS

GEONAV-Multy allows displaying the position of targets tracked (maximum of 20 targets) by any radar featuring the ARPA (Automatic Radar Plotting Aid) or MARPA (Mini-ARPA) function.
To activate the ARPA display function select ACTIVATE from the GOTO/SETUP/ARPA menu. When the ARPA display function is active, the instrument shows the target data received from the ARPA radar connected to the **GEONAV-Multy** through the NMEA0183 port.

The figures below show some sample of tracked ARPA targets. The following graphic items are displayed:

1 - Target name

The name of the target.

2 - Vector

Shows the current direction of the target. The longer the vector, the faster the target

3 - Marks

Each mark provides the forecasted position of the target – based on its own current speed and direction - every minute.

4 - Thicker mark

The last mark - thicker than the others - shows the forecasted position of the target - based on its own current speed and direction - after six minutes.

5 - Target shape

The target shape provides information on the target tracking status. The status can be:
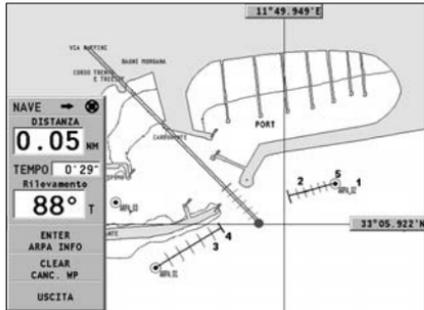
- Target being tracked (still in process of acquisition)

- Target being tracked (steady, i.e., currently tracked ok)

- CPA/TCPA warning: target falls within the CPA/TCPA limits

- Target lost

Arpa Target information:

To display the information concerning any ARPA target, move the cursor on the target icon and press ENTER.

NOTE: When the ARPA function is active, the own ship vector shows the six marks - like the target vectors - providing the forecasted position of the own ship every minute for the next six minutes.

TARGET NAME	RNG NM	BRG	CPA NM	TCPA	COURSE	SPEED
ARPA-06	0.00	0°	-	-	0°	0.00
ARPA-08	0.00	0°	-	-	0°	0.00
ARPA-01	0.05	270°	-	-	210°	1999
ARPA-02	0.05	90°	0.05	-	221°	300
ARPA-00	0.08	24°	-	-	300°	4005
ARPA-07	0.09	190°	110.00	0h0'	151°	94
ARPA-04	0.10	80°	-	-	200°	1498
ARPA-09	0.10	0°	90.00	0h0'	160°	656
ARPA-10	0.10	100°	10.00	0h0'	130°	656
ARPA-11	0.10	0°	90.00	0h0'	160°	656

ENTER / ◊ CHANGE PAGE   EXIT

CPA/TCPA limits

Press the GOTO key, select SETUP, then ARPA. Choose the CPA/TCPA option to set the CPA (Closest Point of Approach) and TCPA (Time to Closest Point of Approach) limits.

As soon as the CPA or TCPA parameters of a target become lower than the selected limits, a warning is issued.

Radar offset

Press the GOTO key, select SETUP, then ARPA. Choose the OFFSET GPS RADAR option to recall the menu that will allow setting the position of the radar antenna with respect to the GPS antenna, so as to improve the accuracy of target representation.

INFORMATION WINDOWS

Cursor cannot be activated when one information window is displayed.

Navigation window

This window displays the following information:

• Geographical coordinates (latitude/longitude)

• The position correction applied to the latitude and longitude (option SETUP, CALIBRATION)

```
        SHIP POSITION
  LATITUDE
   33°05.908'N*
  LONGITUDE
   11°49.887'E*
         CALIBRATION
    dLAT        dLON
 0°00.012'S  0°00.003'W
  COG              SOG  KTS
  303°            6.0

  MAG. VAR.      -.--
```

• Magnetic variation value received by the GPS
• Course (COG)
• Speed (SOG)

Tide 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.

XTD Window

This window displays the following information on the target waypoint:
• Name of the target waypoint
• Distance from the target waypoint
• Estimated time of arrival to the target waypoint
• Bearing
• Course
• Steering angle
• XTD (right/left distance from the planned route)
• XTD limit (runway width)

The graph shows the boat's position with respect to the route.

When the XTD reaches the extreme value shown in the lower right-hand corner of the window, the boat symbol will reach the runway right or left side.

To change the XTD limit, see the Setup Section.

NOTE: This window is available in Navigation mode only.

ETHERNET NETWORK

The GEONAV features, an Ethernet system for the network connection of several units. This system makes it possible to transfer the changes to a route - including temporary changes made through the **Easy Pilot** function - from one unit to another. To avoid that the improper use of one unit affects any other unit connected to the network, it is possible to enable the Network Lock function; in this case, route editing is not allowed. Another innovative feature is the sharing of the electronic chart among several instruments, without having to purchase as many charts as the instruments connected to the network.

NOTE: No GPS receiver suitable for network connection to the Ethernet has been put on sale yet. Therefore, it is necessary to connect each unit to a GPS receiver by the NMEA0183 standard port. In any case, a single GPS receiver can be connected to several units. The autopilot, however, must be connected to only one of the units on the network, still using the NMEA0183 standard port.

Connecting the Instruments

The installation of the Ethernet Connection requires the use of standard cables and connectors (UTP Cable cat. 5 and RJ-45 Connectors) and must be carried out only by skilled personnel. In order to connect several plotters, it will be necessary to use a separate cable for each plotter (part n° N1016140) in order to link them together by a standard network HUB.
The Ethernet kit (part code P2010860) will be necessary in order to execute a point-to-point link between two plotters. The kit consists of two cables, two adapters and a 10m-crossover cable. Once the network has been correctly installed and configured the Ethernet Connection will be automatically detected at start-up and the plotters ready for data transfer.

Setting the network

To ensure a correct network communication, the units have to be assigned network addresses different from those assigned to any external device (PC, printer, server, etc.) connected to the same network.
The IP address setting is carried out through the Setup menu. Press the **GOTO** key to display the main menu, and then select SETUP, GENERAL and position on the IP ADDRESS option.
A window will show the instrument's IP address as 192.168.xxx.yyy: set the same xxx value (0 to 255) for all the units connected to the network, whereas the yyy value (0 to 255) must be different for each unit connected.

Set the address range values so as all the yyy values for all the units connected fall inside the first and last range.

Within the same window, the SHOW INFO option allows displaying the network connection status (MAC address, IP address, etc.), whereas the PING option allows testing the response of an IP address from the NETWORK).

Transferring the route

The operations that allow editing an active route - and that are therefore transferable to all the instruments on the net- work - are the following:

- Route editing (insertion, deletion and displacement of a waypoint; recall and deletion of a route)

- Insertion of a waypoint and selection of the target waypoint by the GOTO function

- Temporary editing of the route by the Easy Pilot function (EBL knob).

As one of the above operations has been carried out from any instrument connected to the network, switch from Cursor mode to Navigation mode by pressing the **EXIT** key. Only the Navigation mode allows the transfer of data.

Provided the **GEONAV-Multy** is not locked (*see the following par.*), a message will prompt the user to confirm the transfer of the edited route by pressing the **ENTER** key.

Following the confirmation, the route edited will be transferred to all the instruments connected to the network, thus overwriting the local route data (if any). To cancel the route transfer operation, press **CLR**.

NOTE: After cancelling the transfer of the edited route, it is still possible to save the changes to the cartridge inside the instrument. Press ENTER to confirm the saving or CLR to cancel. In both cases, as the operation has been completed, the instrument restores the original active route. The route saved to the local cartridge can be recalled later and then transferred to the network.

Network lock

The Network Lock function allows preventing the instrument from transferring the route changes to the network, thus avoiding that any improper use may affect all the instruments on the network.

A locked unit becomes a mere repeater unit, displaying the route followed, without allowing any change. To enable or disable the network lock, press the **GOTO** key to display the main menu, then select SETUP, GENERAL and the LOCK NETWORK option.

CHART SHARING

Now, thanks to the Chart Sharing function, that allows copying the electronic chart to as many CompactFlash™ cartridges as the instruments connected to
The network, all the units will be able to read them: it is required just to insert the original CompactFlash™ cartridge into any instrument.
To make a copy of the charts, a PC equipped with a CompactFlash™ reader is required. Access the original cartridge by the MS-Windows File Manager, copy the NAVIONIC\CHARTS folder to a temporary location in the hard disk, then insert a new CompactFlash™ into the reader and copy the content of the NAVIONIC\CHARTS folder from the hard disk to the NAVIONIC\CHARTS folder in the CompactFlash™. If necessary, create the NAVIONIC\CHARTS folder in the new CompactFlash™ by the File Manager.
WARNING: Be careful not to delete the chart files already present in the target CompactFlash™ (if any). Repeat the operation for as many CompactFlash cartridges as necessary to fit all the units on the network.

AUTOPILOT

The **GEONAV-Multy** allows a boat equipped with an autopilot to follow automatically the entered route, compensating for any diversion caused by external conditions (wind, currents, etc).
The **GEONAV-Multy** will display the "PROXIMITY TO WAYPOINT" message to warn the user that the boat is about to reach the target waypoint.
The **GEONAV-Multy** will display the "END OF TRIP" message to warn the user that the boat is about to reach the last waypoint in the route.

WARNING: In order to avoid sudden change of course, it is always recommended to disable the autopilot when editing and/or creating a route.

GEONAV

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