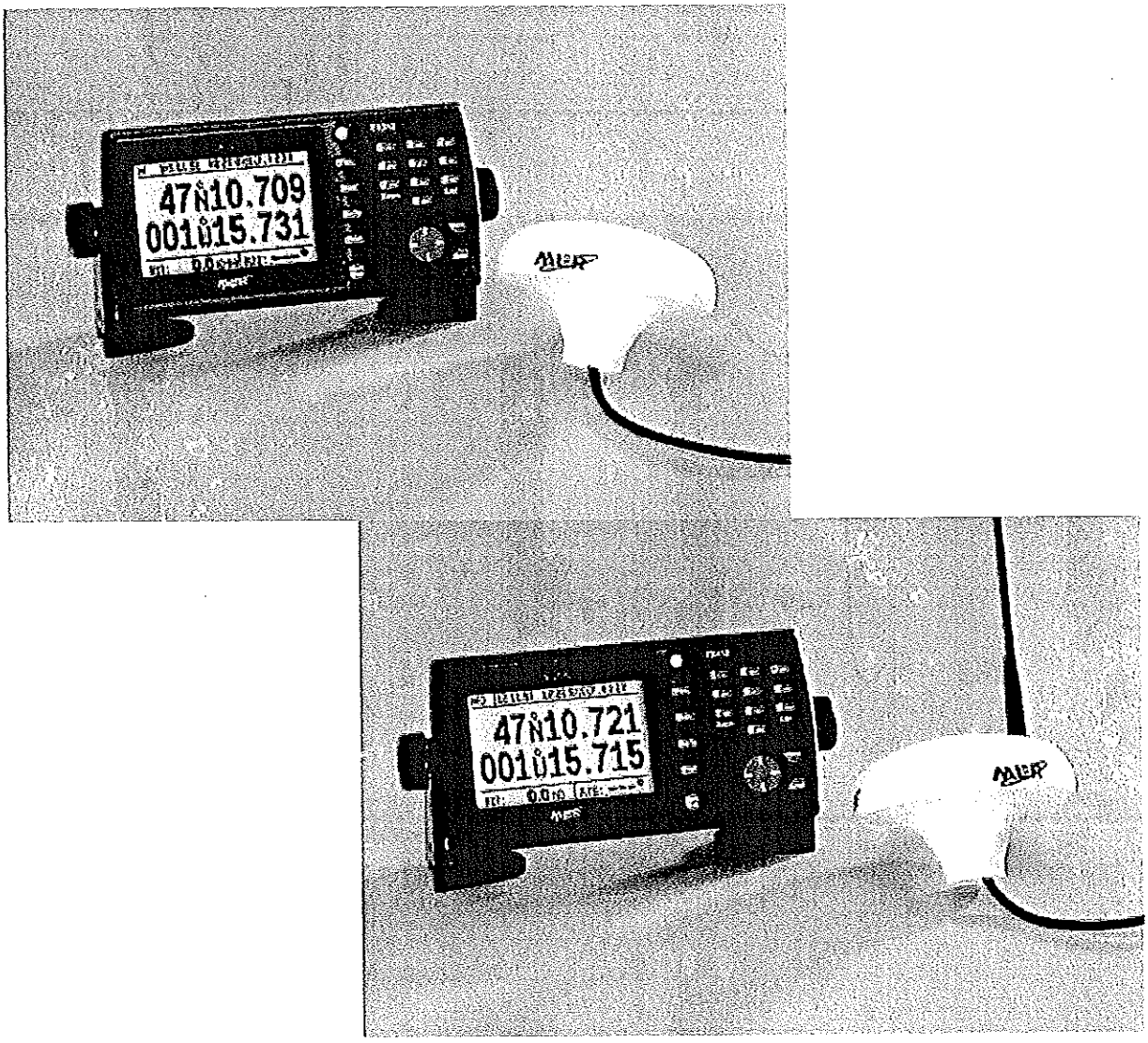
FX312 PRO &
FX412 PRO



USER MANUAL
ADDITIONAL PRO and CARTOGRAPHY

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COM-NO-FX312 PRO & FX412 PRO-03 GB 04/2000

Dear Customer,

Thank you for choosing the MLR GPS FX312 PRO or the MLR DGPS FX412 PRO.

This document 'ADDITIONAL PRO and CARTOGRAPHY' is an additive to the 'USER MANUAL' FX312/FX412, manual which is common to the entire range FX312/FX412.

In the 'ADDITIONAL PRO and CARTOGRAPHY' you will find the directions of use for the PRO specific functions (hyperbolic display, corrections, set up of the NAV display,...) as well as the use of the cartography on CD-ROM.

FX312 PRO and FX412 PRO have as FX312 XC and FX412 XC an extended memory which allow the loading of a cartography from a CD-ROM. Therefore, you will find in this additional user manual the specific functions for the cartography and the catalogue of the CD-ROM available.

To use the functions of your receiver for the navigation, please refer to the 'USER MANUAL'.

On our Web site, you will find the updated catalogue of the CD-ROM available.

Yours sincerely,

Jean Pierre MAQUAIRE
C.E.O.

WARNING : IMPORTANT NOTES

➲ **This receiver is an AID TO NAVIGATION ONLY and should not be used as a substitute for more traditional methods of navigation.**

➲ **The United States of America Department of Defence is responsible for the operation and the management of the GPS system, especially the accuracy.**

➲ **When connecting your GPS or DGPS to other manufacturers equipments i.e. autopilots, video plotter etc., you must still ensure a permanent watch is always kept as all electronic intruments are designed to be an AID TO NAVIGATION ONLY.**

➲ **WARNING The charts are provided for entertainment and experimentation purpose only, they are not intended to be used as a primary source of navigation. MLR and its resellers will never be liable to you for any damage arising out the use of its products. Always rely on the official maps and charts before making a decision.**

CONTENTS

ADDITIONAL PRO AND CARTOGRAPHY
FX312 PRO & FX412 PRO

This document is common to both units FX312 PRO and FX412 PRO, it will give you all the relevant specifications and instructions for the use of the PRO functions and the cartography.
These receivers propose supplementary specific sub-menus for the PRO version. On the other hand, only one language is available. Therefore, the sub-menu '4 – LANGUAGE' of the MAIN MENU, available in the other versions, is replaced by the sub-menu '4 – HYPERBOLIC'.

A – PRESENTATION

Your receiver is a professional GPS or DGPS including specific functions for the professional fishermen. It is also able to receive the MLR cartography available on CD-ROM.

From a personal computer you will be able to load or reload 2 maps of the CD-ROM in your receiver. A menu allows you to display in the PLOTTER screen one or two charts loaded.

B – USING THE PRO FUNCTIONS

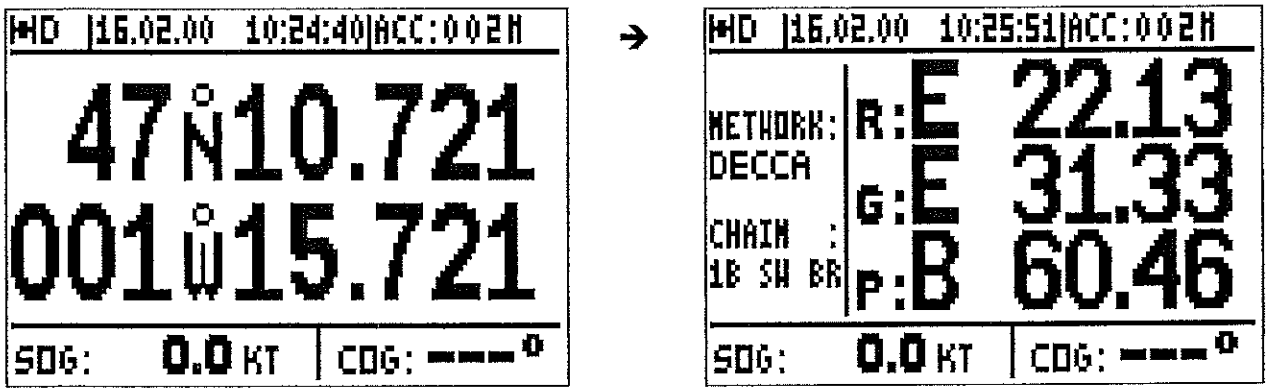
1 – READ YOUR POSITION IN HYPERBOLIC CO-ORDINATES

The FX312 PRO and FX412 PRO allow the display of the position in hyperbolic co-ordinates in the TORAN, DECCA and LORAN C networks. The network and chain choices as well as the correction entered are made from the SYSTEM MENU (see chapter B.4).

From the screen which displays the geographic position press the **Pos** key.

On the left of the screen are displayed the type of network as well as the name of the chain used.

To get back the display of the position in geographic co-ordinates, press one more time the **Pos** key.



Your speed and course over the ground are displayed at the bottom of the screen.

Note : a C which means correction is displayed at the right of the co-ordinates when a correction has been entered.

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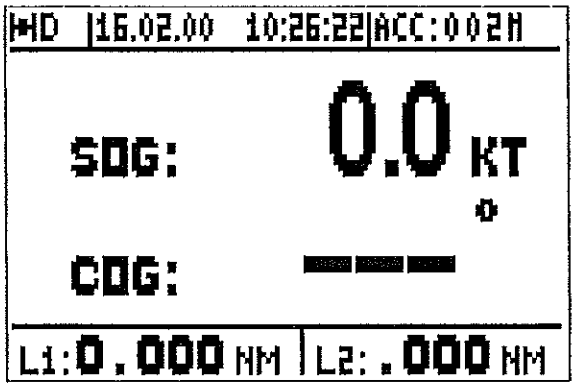
2 – NAVIGATION DISPLAY : READ YOUR SPEED, COURSE OVER THE GROUND…

Warning : A manufacturer set-up has been done for the NAVIGATION function to display your speed and course over the ground. Later on, you will be able from the NAVIGATION MENU to choose the navigation information you want to be displayed in large characters. Therefore, your receiver will be customised.

Press the **Nav** key to display the NAVIGATION function. The central part of the screen shows : Speed Over the Ground **SOG** (in knots, kilometre/hours or in mile/hours) and Course Over the Ground **COG** (in degrees) on the lower line.

Note: When the speed is zero, the course cannot be calculated and dashes are displayed.

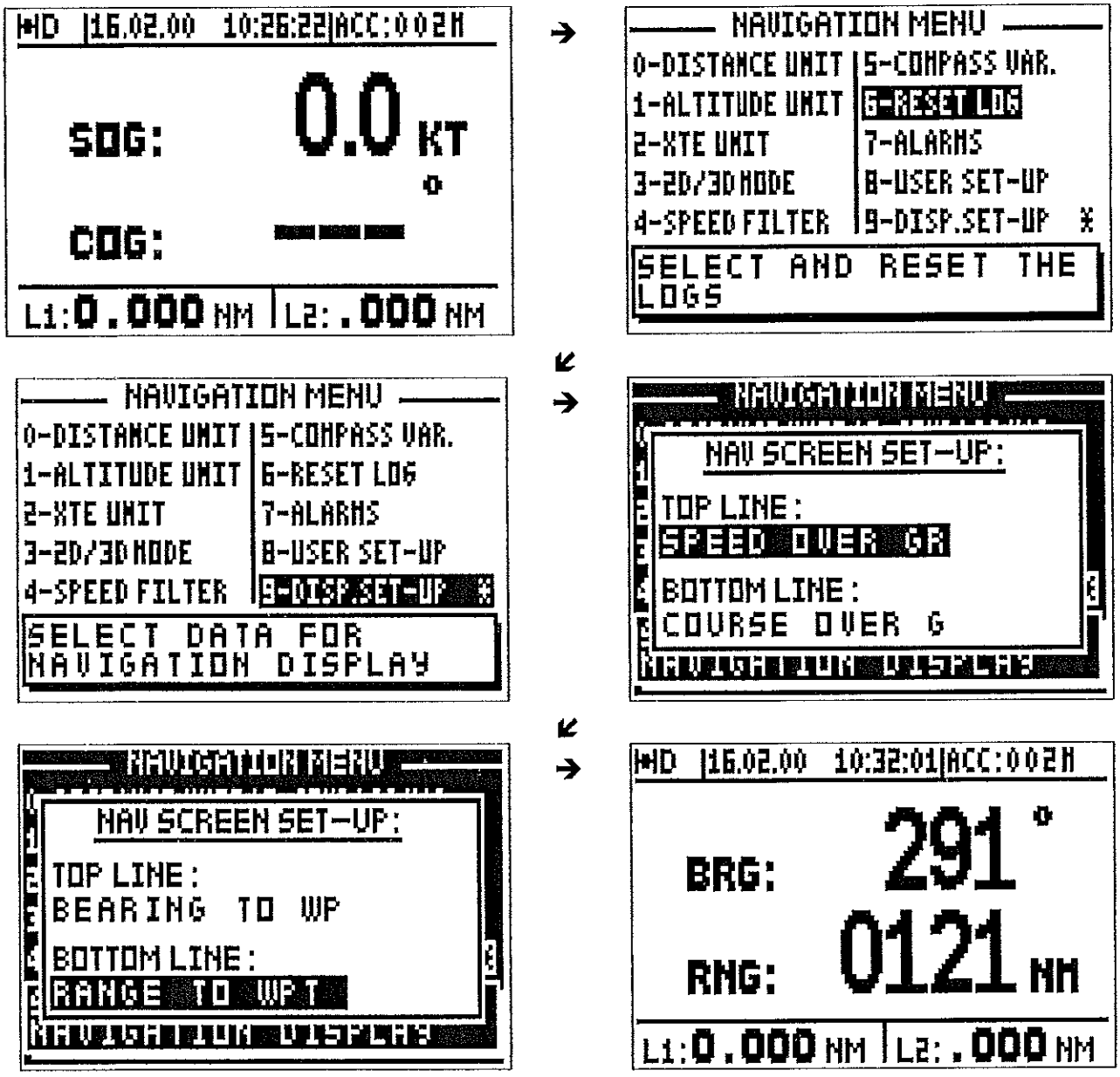
Information displayed in the top part of this screen is identical to the POSITION screen.



Two logs, L1 and L2 display the distances travelled (in the unit selected i.e. km, miles etc. from the NAVIGATION MENU) in the lower part of the screen.

Note: From the NAVIGATION MENU you can reset to zero each log individually and configure the following parameters: unit of distance, unit of altitude, 2D/3D/Auto mode, speed filter, compass variation and alarms.

To personalise the NAVIGATION function: from the NAV function, press the key **Menu** then press the key **7** (or select 7 – DISP. SET-UP and press **Enter**). Select with the arrows ◄ ► the data to display on the upper line of the navigation function. Use the arrows ▲ ▼ to move the cursor then the arrows ◄ ► to select the data to display on the lower line. Press **Enter** to validate your choices and to come back to the navigation function.



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3 – CREATE NEW WAYPOINTS

The FX312 PRO and FX412 PRO allow you to create waypoints by 2 different ways :
. In geographic co-ordinates. It will give you the corresponding position in the hyperbolic network selected.
. In hyperbolic co-ordinates in the selected network. It will give you the corresponding geographic position.

They also allow you to create particular waypoint called FAD (Fish Aggregating Devices). The FAD waypoints are represented by their icon and by a circle corresponding to the swinging circle of the FAD.

3.1 – CREATE A WAYPOINT IN GEOGRAPHIC CO-ORDINATES

In your FX312 PRO or FX412 PRO, you can create a new waypoint by following the instruction windows displayed after pressing the **GoTo** key or from the waypoint.

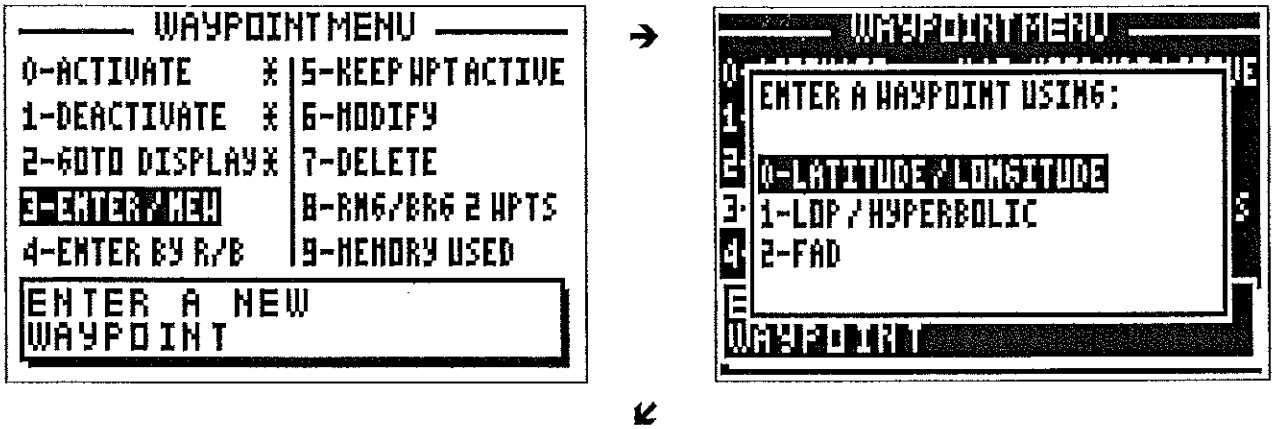
From the GOTO WAYPOINT function, press the **Menu** key then press key **3** (or select 3-ENTER/NEW and press **Enter**).

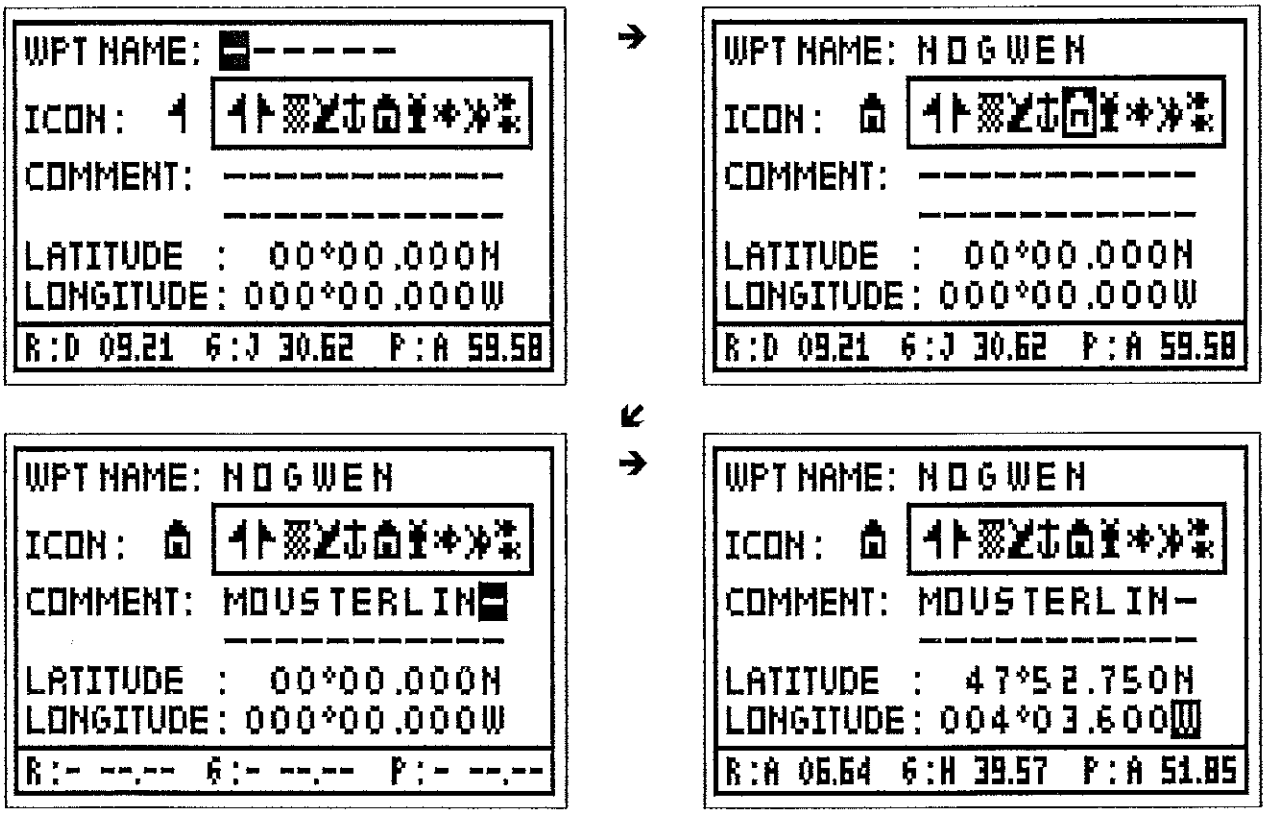
In the window ENTER A WAYPOINT USING : press key **0** (or select 0-LATITUDE/LONGITUDE and press **Enter**).

When the entered waypoint window is displayed, enter the NAME of the waypoint, select an ICON for representation in the PLOTTER function, enter a COMMENT (optional), enter the LATITUDE and the LONGITUDE then press **Enter** to validate your entry and store the new waypoint.

Note: To enter a letter, press repeatedly the corresponding key (e.g. to enter a B, press 3 times on key **2**). Once the letter or the number is displayed, the cursor will advance automatically to the next character. If you make a mistake, use the ◄ ► arrow keys to move back or to advance the cursor. Use the ▲ ▼ arrow keys to go back to the previous line or to go forward to the next line.

Note: To select North or South for the latitude, use the key **6MN_** for North and **7PRS** for South. To select East or West for the longitude, use the key **3DEF** for East and **9WXY** for West.





Note : As you go along the keying of the geographic position, the GPS calculates the corresponding hyperbolic co-ordinates and displays them at the bottom of the screen (unless the selected chain is out of area).

Tip : Do not forget to press the Enter key to validate your entry and store your new waypoint.

3.2 – CREATE A WAYPOINT FROM ITS HYPERBOLIC CO-ORDINATES

From the GOTO WAYPOINT function, press the **Menu** key then press key **3** (or select 3-ENTER/NEW and press **Enter**).

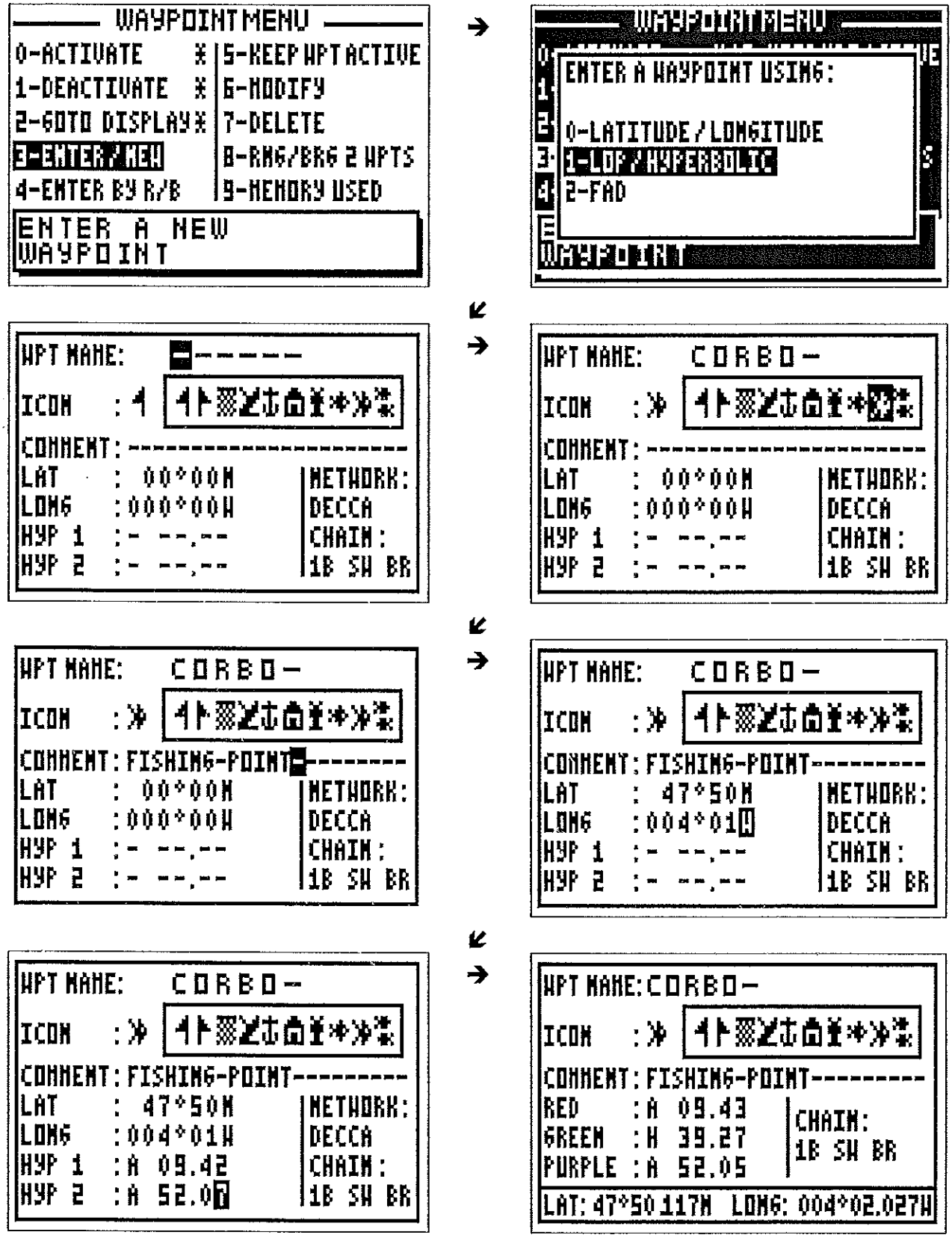
In the window ENTER A WAYPOINT USING : press key **1** (or select 1-LOP/HYPERBOLIC and press **Enter**).

When the entered waypoint window is displayed, enter the NAME of the waypoint, select an ICON for representation in the PLOTTER function, enter a COMMENT (optional). Enter the approximate LATITUDE and the LONGITUDE of the waypoint to key in, enter the hyperbolic co-ordinates of the waypoint to create then press **Enter** to validate your entry and store the new waypoint.

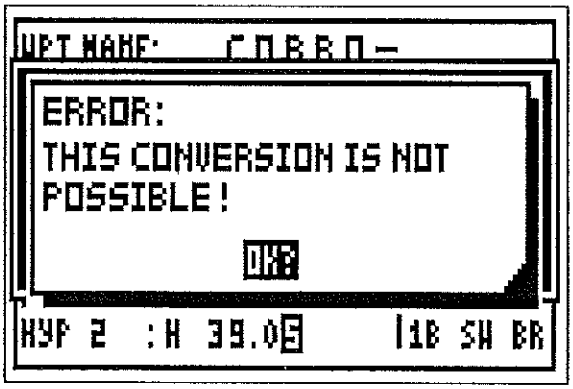
Then, the FX312 PRO or FX412 PRO starts the conversion hyperbolic co-ordinates/ geographic co-ordinates, this conversion lasts few seconds. If the entered co-ordinates do not match with the chosen network or with the approximate area defined by its latitude and longitude, the conversion cannot succeed. Once the conversion is over, press one more time **Enter**.

Note: To enter a letter, press repeatedly the corresponding key (e.g. to enter a B, press 3 times on key **2**). Once the letter or the number is displayed, the cursor will advance automatically to the next character. If you make a mistake, use the ◄ ► arrow keys to move

back or to advance the cursor. Use the ▲ ▼ arrow keys to go back to the previous line or to go forward to the next line.



If the conversion cannot succeed, the following message THE CONVERSION IS NOT POSSIBLE! will be displayed. Press **Enter** and check the key in information.

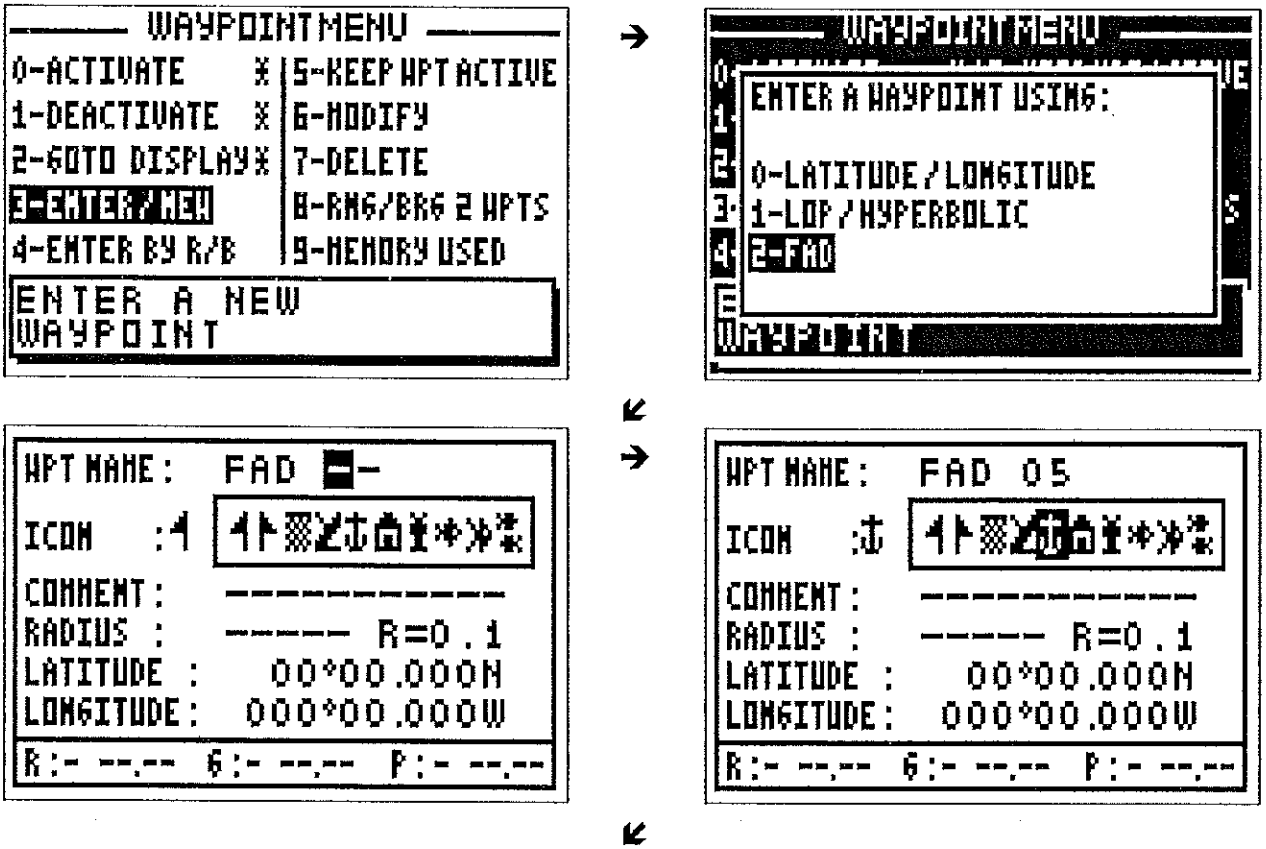


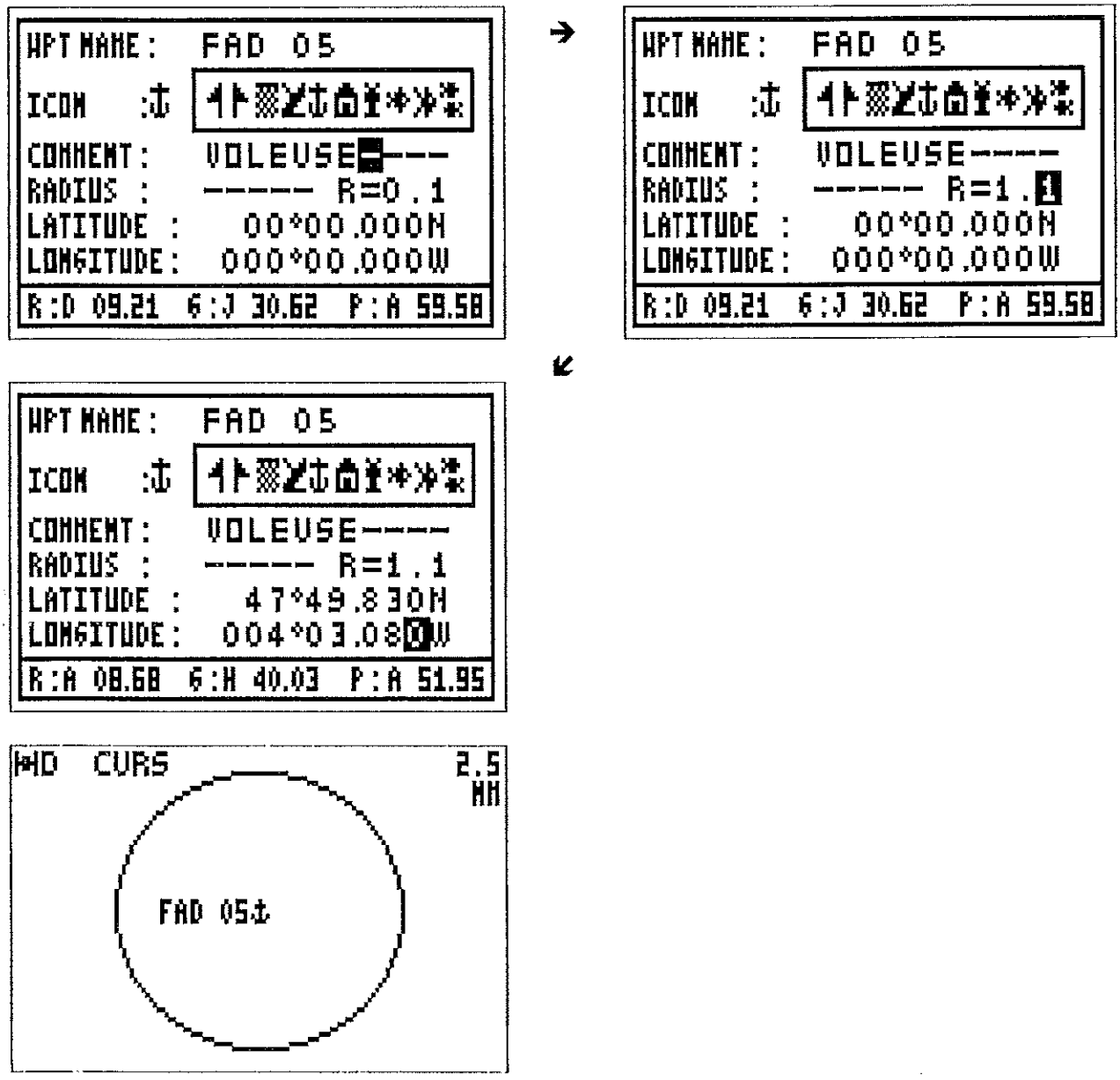
3.3 – CREATE A WAYPOINT TYPE FAD

From the GOTO WAYPOINT function, press the **Menu** key then press key **3** (or select 3-ENTER/NEW and press **Enter**).

In the window ENTER A WAYPOINT USING : press key **2** (or select 2-FAD and press **Enter**).

When the entered waypoint window is displayed, enter the number of the FAD (the name of the waypoint is defined by 3 letters FAD and a number from 00 to 99), select an ICON for representation in the PLOTTER function, enter a COMMENT (optional). Enter the radius of the swinging circle of the FAD after the indication R =. Enter the LATITUDE and the LONGITUDE of the FAD, this position corresponds to its anchorage position. Press **Enter** to validate your entry and store the new FAD.





In the plotter function, the particular waypoint FAD is represented by a circle where the center is the FAD position. It is displayed by its icon and name, the circle's radius is equivalent to the entered value.

Note : For the use on a fixed FAD, the circle displayed correspond to the swinging circle of the FAD. This is the area where the FAD is able to move according to the current and the wind. Outside of this area, the FAD will be submerged therefore you have to look for it inside the circle.

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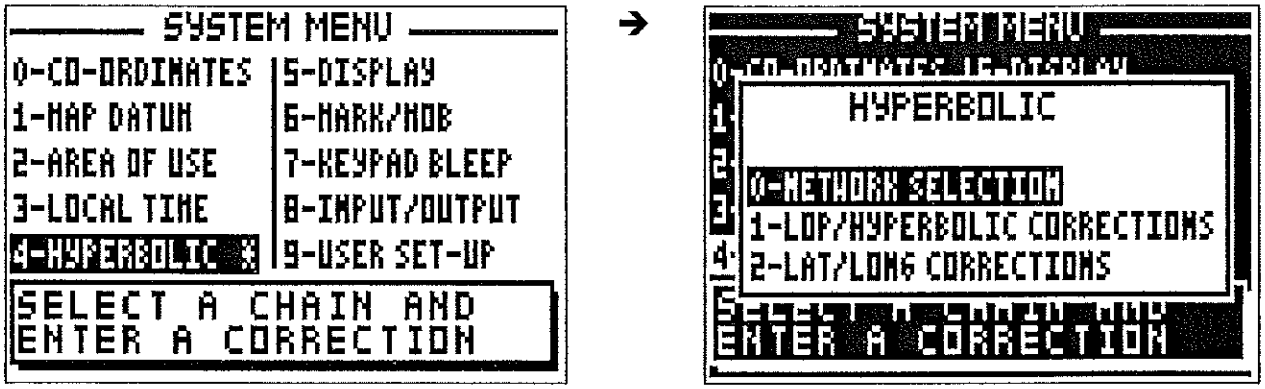
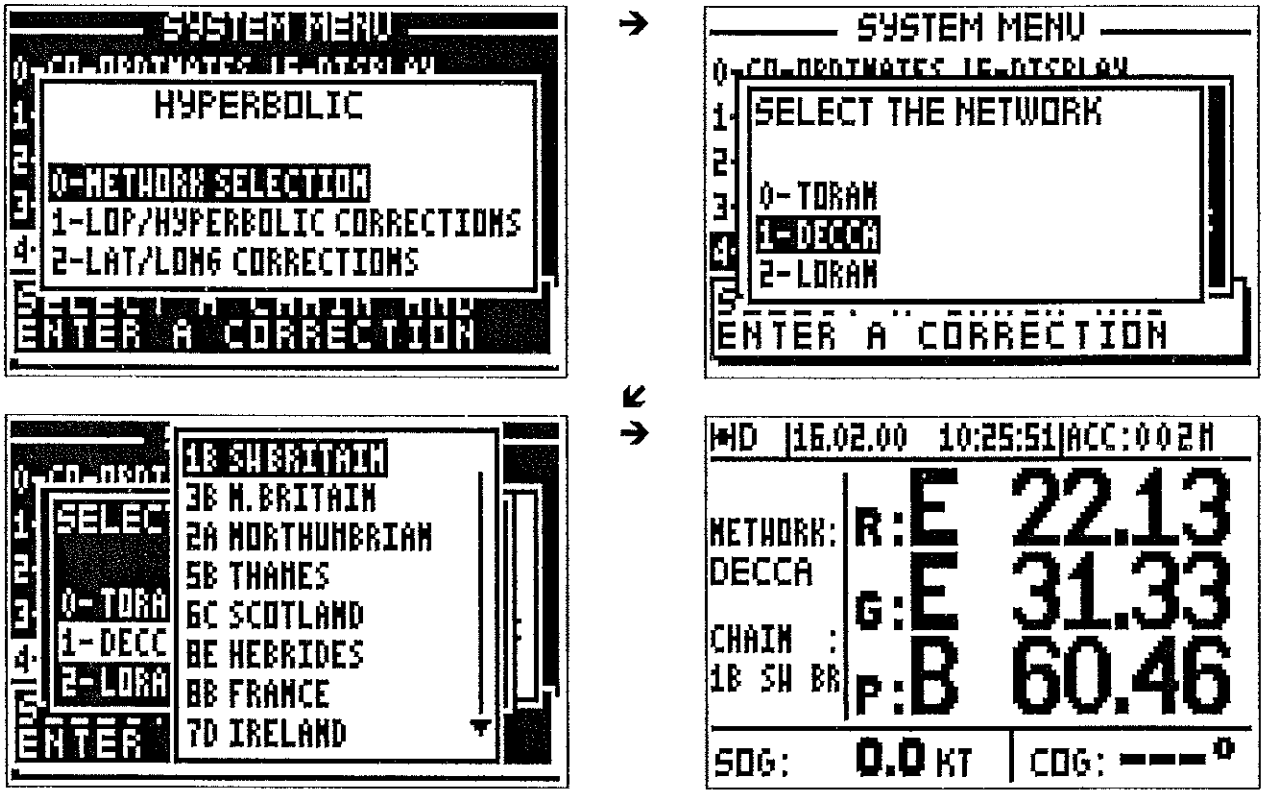
4 – PRO FUNCTIONS SET UP IN THE SYSTEM MENU

From the SYSTEM MENU, press key **4** (or select 4-HYPERBOLIC and press **Enter**).



4.1 – SELECT A NETWORK AND A HYPERBOLIC CHAIN

Press key **0** (or select 0-NETWORK SELECTION and press **Enter**). Choose one of the three networks available Toran, Decca or Loran by pressing one of the keys **1**, **2**, **3** (or select one of the three proposals and press **Enter**). Then thanks to the arrows ▲ ▼ select the chain in the list and press **Enter**.

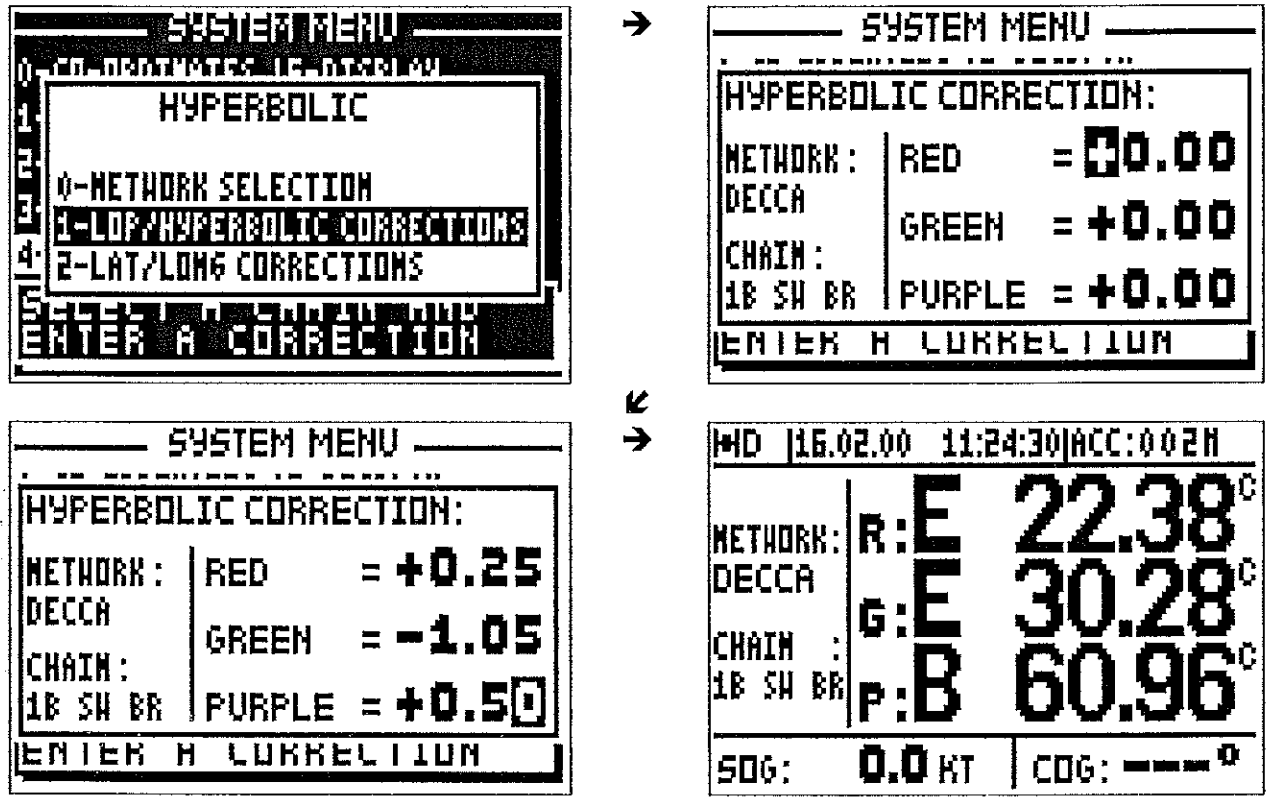


Note : the names of the network and the chain selected are displayed in the left part of the screen in the function POSITION (hyperbolas).

4.2 – ENTER A HYPERBOLIC CORRECTION

This function allows to correct (or to enter an offset) the hyperbolic co-ordinates displayed without changing the geographic position.

Press key **1** (or select 1–LOP/HYPERBOLIC CORRECTIONS and press **Enter**). Enter the correction of the red hyperbolic co-ordinate . Thanks to the ▲ ▼ select the green and purple hyperbolic co-ordinate, enter their corrections and press **Enter**.



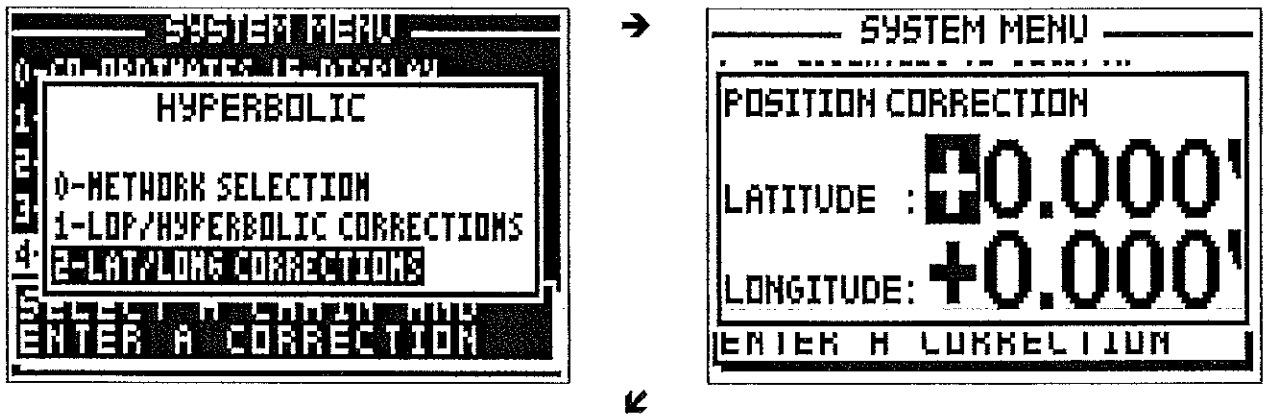
Note : Use the key **1+-*** to change the sigh of the correction (+ or -). A **C** is displayed at the left of the hyperbolic co-ordinates when a correction different from zero has been entered.

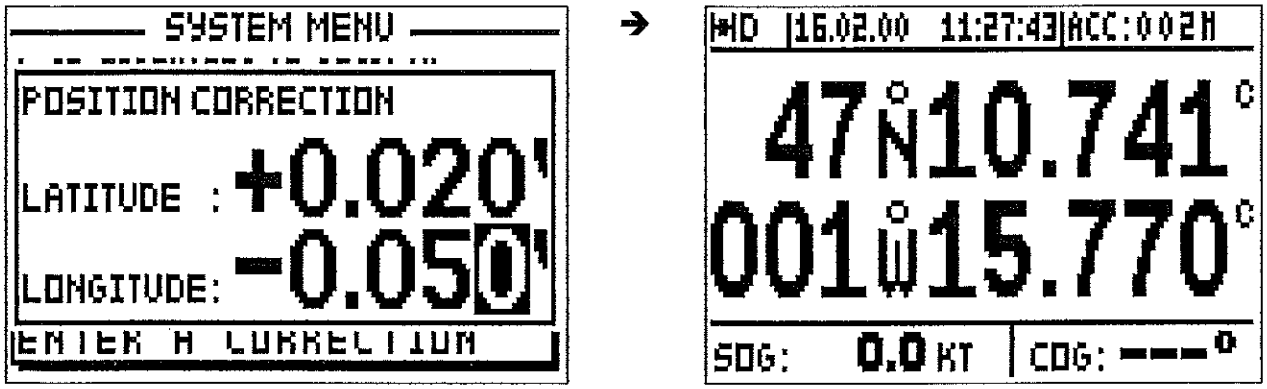
Warning : The entered corrections also apply to the hyperbolic co-ordinates of the waypoints.

4.3 – ENTER A LATITUDE/LONGITUDE CORRECTION

This function allows to correct (or to enter an offset) the geographic co-ordinates latitude and longitude of your position displayed in the POSITION function. This correction can also become active on the position transmitted through the NMEA output to the fishing computer.

Press key **2** (or select 2–LAT/LONG CORRECTIONS and press **Enter**). Enter the correction of the latitude. Thanks to the ▲ ▼ select the longitude, enter its correction and press **Enter**.





Note : Use the key **1+-*** to change the sigh of the correction (+ or -). A **C** is displayed at the left of the latitude and/or longitude when a correction different from zero has been entered.

Warning : the entered corrections apply to the displayed position. To activate the corrections on the NMEA output, you have to select in the sub MENU 8-INPUT/OUTPUT of the SYSTEM MENU, the NMEA sentences including the corrections. These sentences are recognisable from a C (i.e. GPGGAM-C). The latitude and longitude corrections affect neither the hyperbolic position nor the waypoints position.

C – USE OF THE MLR CARTOGRAPHY

The FX312 PRO and FX412 PRO have an extended memory as well as the compatible software for the MLR cartography on CD-ROM. You will find in the annexe the list of the optional CD-ROM available.

1 – CONNEXION WITH YOUR P.C.

Connect your receiver to the P.C. with the cable provided. The DB9 connector has to be plugged to one of the serial ports of your computer (COM1, COM2, COM3...). Make sure that the port COM used is not used by another application. Plug the 220/12 V transformer to a 220V plug.

Press the **PWR** key to switch on your receiver, make sure the serial input of your FX312 XC or FX412 XC is set to the NMEA183.0 format. Your receiver is now ready to get the charts from the CD-ROM.

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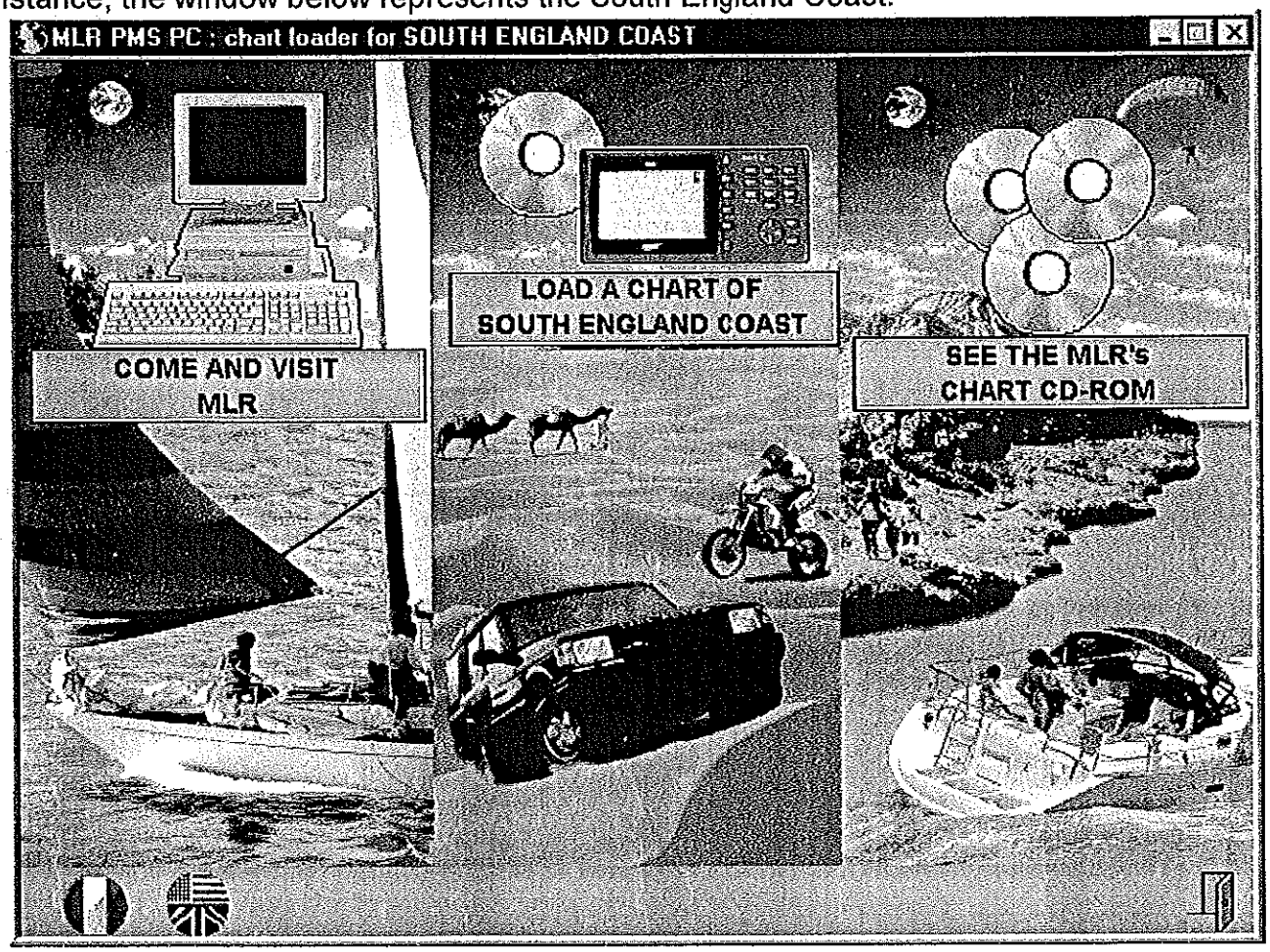
2 – USING THE CD-ROM

Put the CD ROM in the driver of your P.C. and wait for the application to start. If it does not start automatically, launch manually the 'MLRPMSPC.exe' on the CD-ROM.

The following window will appear named after the area covered by the CD-ROM. For instance, the window below represents the South England Coast.

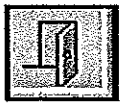


From this window, you will be able to :

- Visit our Web site (if you are connected to Internet). On our site, you will find the updated list of the CD-ROM available.
- Load in your FX312 XC or FX412 XC one of the charts available on the CD-ROM.
- Display the catalogue of the CD-ROM available when the CD-ROM has been published.

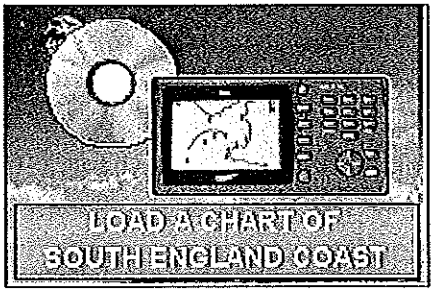
Click here to select the French language.

Click here to select the English language.

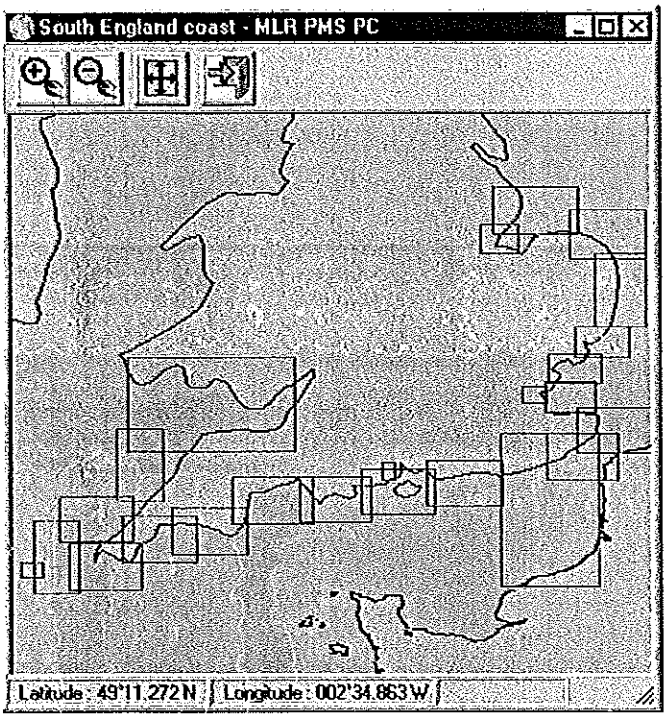


Click here to exit.

2.1 LOAD A CHART FROM THE CD-ROM

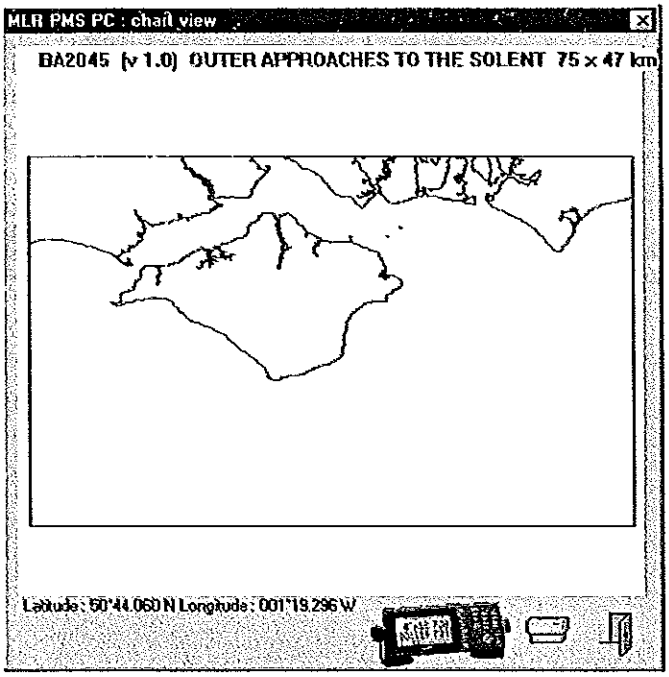


Click here to load one chart available from the CD-ROM



The area covered by the CD-ROM appears. To zoom on one part, click on the icon representing a magnifying glass, then click on the area to zoom or click and slide the mouse on the area to zoom.

To load the chosen chart, double click on it.



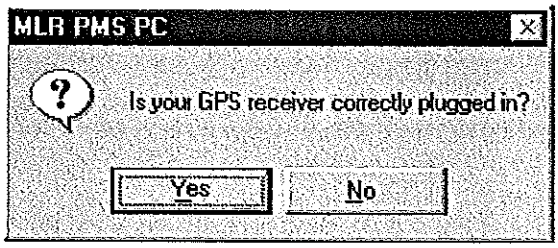
The chart to load appears with its references and the covered area.

To print it, click on the printer.

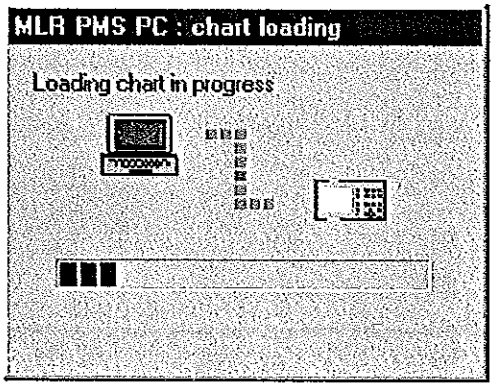
To load it in your receiver, click on the GPS.

Once you have read the warning message, click OK.

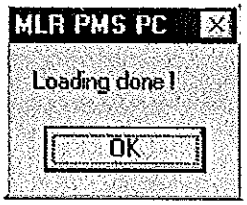
The cursor's position (latitude and longitude) is displayed at the bottom left of the window when the cursor is on the chart.



Check whether your receiver is well connected to your P.C. and the power on. Then click YES.

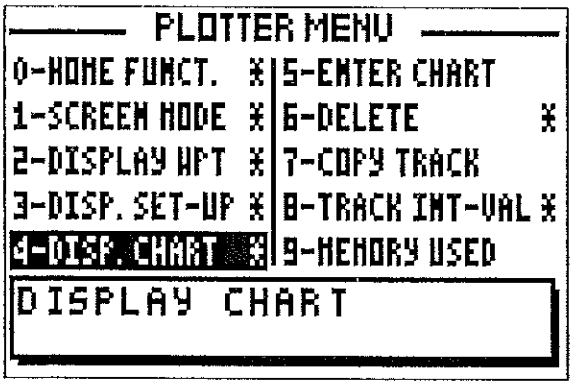


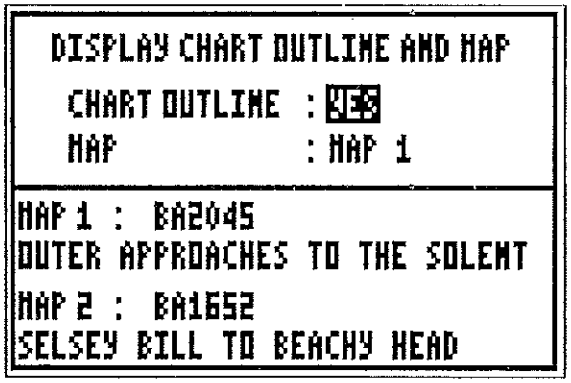
The loading of the chart lasts few minutes.

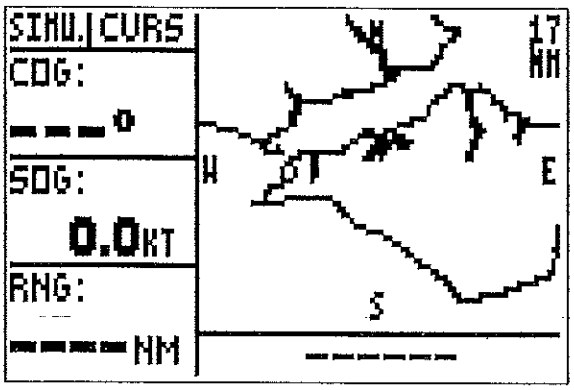


At the end of the loading, a window informs you that everything went through correctly. Then click OK.

To visualise the charts on your receiver, press the Menu key from the PLOTTER function, then press the key 4 (or select 4-DISP. CHART and press Enter). With the arrows ▲ ▼ move the cursor on CHART OUTLINE or MAP with the arrows ◀ ▶ make your selection and press Enter.

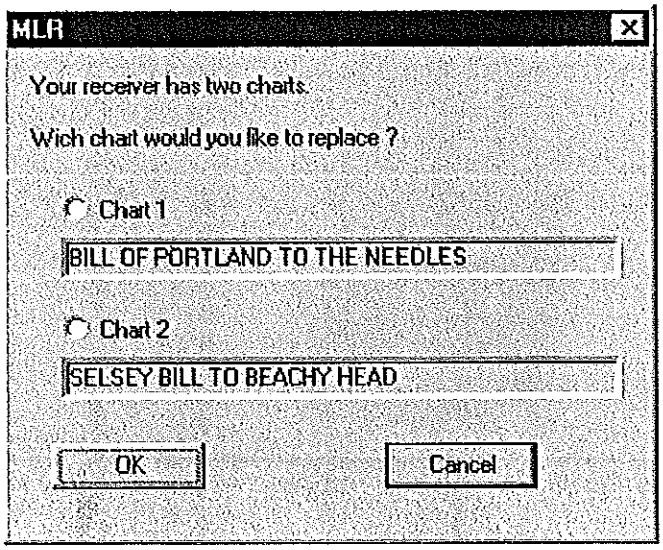






Note 1 : When choosing Map 1, the chart will appear in the middle of the screen with the appropriate scale.

Note 2 : When 2 charts are loaded in your receiver, you can select to display one or both charts simultaneously.

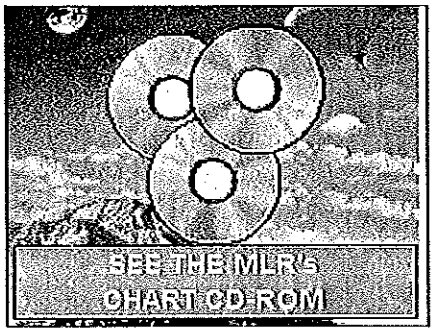


In the case your receiver is already loaded with 2 charts, this window will appear. Select the chart to be replaced by clicking on Chart 1 or Chart 2., then click OK.

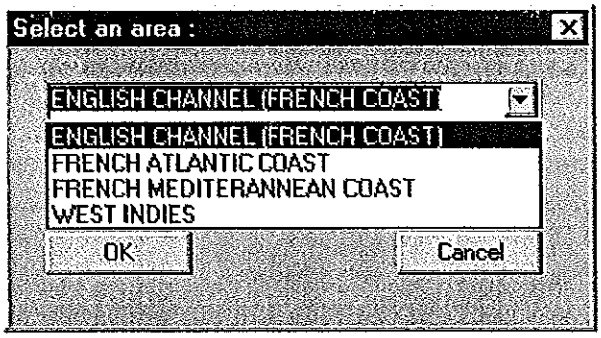
Before loading the new chart, your receiver will restart in order to erase the chart to replace .

Note : Your CD-ROM is protected by the Copyright laws.

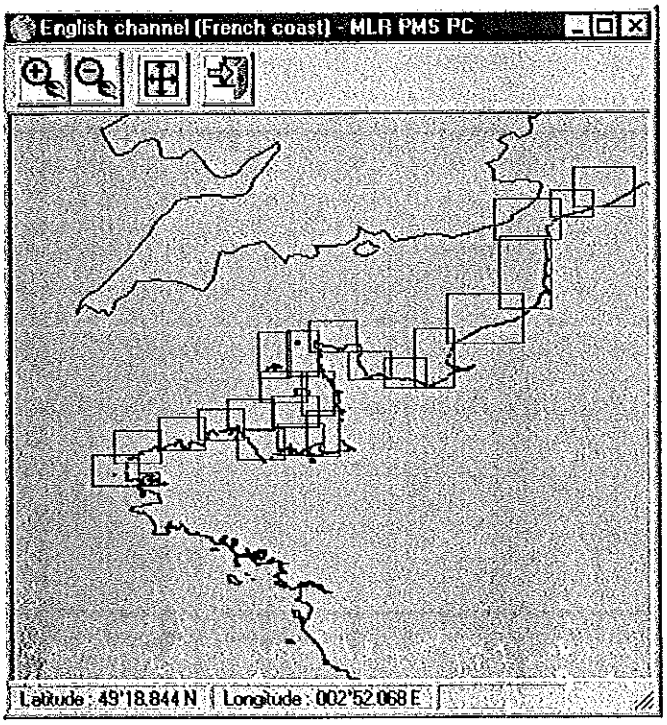
2.2 CHECK THE CATALOGUE OF CD-ROM



Click here to check the catalogue of CD-ROM available.



Choose the area to visualise and Click Enter.



The selected area will appear. To zoom on one part, click on the icon representing a magnifying glass, then click on the area to zoom or click and slide the mouse on the area to zoom.

To visualise the selected chart, double click on it.

You can visualise and print all the charts.
To load them, you need to order the relevant CD-ROM.

Note : To order a CD-ROM of another area, contact you dealer and give the reference number of the CD-ROM.

2.3 VISIT OUR WEB SITE

If you are connected to Internet, click here to visit our web site. You will be able to see our latest CD-ROM available.

D – CONTENTS AND SPECIFICATIONS

1 – CONTENTS OF FX312 PRO

- 1 receiver case.
- 1 antenna with 10 m cable.
- 1 power and data cable with fuse holder.
- 1 pair of support brackets with 2 trunnion knobs and 2 rubber washers.
- 4 fixing screws.
- 1 spare fuse.
- 1 user's manual.
- 1 guarantee card.
- 1 quick reference card.

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2 – CONTENTS OF FX412 PRO

- 1 receiver case.
- 1 antenna with 10 m cable.
- 1 0.85 meter whip antenna.
- 1 power and data cable with fuse holder.
- 1 1 meter white cable for antenna reference.
- 1 1 meter yellow/green cable for connection of the receiver case with the ground.
- 2 screws, 2 washers, and 2 fan washers.
- 1 pair of support brackets with 2 trunnion knobs and 2 rubber washers.
- 4 fixing screws.
- 1 spare fuse.
- 1 user's manual.
- 1 guarantee card.
- 1 quick reference card.

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3 – FUNCTION AND CARTOGRAPHY SPECIFICATIONS FX312 PRO & FX412 PRO

. Display of the position in the hyperbolic networks Toran, Decca and Loran C.
. Set-up of the navigation function.
. Enter of a waypoint in hyperbolic co-ordinates and conversion in geographic co-ordinates.
. Display of the waypoint's hyperbolic co-ordinates entered in geographic co-ordinates.
. FAD waypoint function with display of its swinging circle.
. Enter of corrections of hyperbolic or geographic positions

. Vector Cartography chart including the chart outline of the paper chart.
. Each CD-ROM includes the all the charts of an area, i.e. from 20 to 30 charts.
. Loading software for P.C. compatible Window95, Window98 and NT4.0.
. Software to access the MLR Web Site type MS Internet Explorer 3.02, Netscape 3 or equivalent.
. Configuration P.C. : 486DX or equivalent, 16 M of RAM, minimum 256 colours, 65536 colours advised, screen resolution 640 x 480 pixels, CD-ROM driver and serial port available.
. The FX312 PRO and the FX412 PRO can load up to 2 charts with display of 1 or 2 at the same time.

EMBED