

# FURUNO ECDIS TYPE SPECIFIC TRAINING COURSE TRAINEE's COURSE MANUAL

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**FEA-2107 and FEA-2807**

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## **Notes on the FEA-2107 and 2807 ECDIS type specific training manual**

This manual is not equivalent to the factory supplied Operator's Manual and it must not be mistaken for the factory supplied Operator's Guide.

It should be used only to assist the trainee during the FURUNO ECDIS Training Course and as an additional guide during daily operations.

This manual will not be updated on a regular basis and it is not connected to a specific software version.

Equipment specifications and the contents of this guide may change without notice.

All brands and product names are trademarks, registered trademarks or service marks of their respective holders.

All section numbers used in this guide refer to the Operator's Manual.

In case of any discrepancy between this document and the Operator's Manual the Operator's Manual will take precedence.

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Contents	
Trainee's Schedule .....	9
Day 1:.....	9
Day 2:.....	9
Introduction: Why ECDIS Type Specific Training? .....	10
Chapter 1: General Information.....	15
System configuration:.....	15
Processor Unit EC-1000C .....	17
ECDIS Control Unit RCU-018 .....	18
Control description .....	19
How to Turn the Power On/Off.....	20
The Standby Mode .....	21
Chapter 2: Presentation of ECDIS functions .....	23
How to view the ECDIS Operator's Manual .....	23
Operator's Manual .....	23
Operator's Manual version number .....	23
ECDIS software version number .....	23
ECDIS Display.....	24
Information Area .....	26
How to open a Sidebar.....	27
How to activate dialog boxes .....	28
Chapter 3: Visual settings and adjustments .....	29
Chart Display.....	29
How to set the Safety Contour.....	29
How to set the value for Shallow Contour, Safety Depth and Deep Contour .....	29
Main and Chart pages.....	32
Standard and Other pages .....	33
Text and AIO page.....	34
Symbol Display (How to Control Visible Navigation Features) .....	35
Route page .....	36
Tracking page .....	37
Chart legend for S57 charts .....	39
Chart Alerts .....	40
General.....	40
How to select objects used in chart alerts.....	41
How to Activate Own Ship Check .....	43



Chapter 4: Targets .....	44
Targets settings page .....	44
Tracking page .....	45
How to Show and hide Tracked and AIS Targets .....	46
How to Set CPA and TCPA Limits .....	46
How to activate and setup the Radar Overlay .....	47
Conning Display .....	48
NAVTEX Messages .....	49
AIS Own Ship Info .....	53
Chapter 5: Chart Handling .....	54
How to Detect ENC Coverage in Vector Chart Display .....	54
Chart Catalogue .....	55
How to view chart update status .....	57
How to view chart update status filtered by your Route Plan .....	58
How to view individual chart updates .....	59
Permit Status .....	60
Description of the Chart Permits dialog .....	61
How to Install Charts from a CD-ROM, Other Media .....	62
T&P NMs in the FURUNO ECDIS .....	64
General .....	64
ENC charts .....	64
Admiralty Information Overlay .....	64
RNC charts .....	64
Current status of T&P NMs in ENCs .....	65
Chart Viewing Dates and Seasonal Features of the S57 Chart .....	66
Introduction .....	66
How to create a [Manual Update] .....	67
How to display Manual Updates .....	70
Admiralty Information Overlay (AIO) .....	70
Installation .....	70
How to display the AIO .....	71
How to read the AIO .....	71
Chapter 6: Source of position .....	72
Backup arrangement .....	72
Recording Own Ship position manually .....	73
Basic operation .....	73



Time transfer.....	75
Timeouts.....	75
Chapter 7: Alerts.....	76
Alert messages.....	76
Chapter 8: Navigation and planning tools.....	77
Navigation Mark .....	77
Route Planning.....	79
How to use the Waypoints page .....	80
Naming files on the FURUNO FEA 2X07 ECDIS .....	80
How to Create a New Route.....	81
Checking of Route / Alerts.....	83
How to use the Alert parameters page .....	83
How to use the Check page .....	84
User Charts .....	86
How to Create a User Chart.....	88
Notes.....	90
How to Create a Note .....	90
Storing User Chart and Notes.....	93
Chapter 9: Documentation .....	95
How to record manual events or manual positions.....	96
User Events.....	96
Manual Position Recording.....	97
LOP (Lines Of Position).....	98
Logs .....	100
Details Log.....	100
Voyage Log.....	100
Danger Targets Log .....	100
Chart Usage Log.....	101
How to save log information as a User Chart.....	102
Backup and file handling .....	104
Chapter 10: Route monitoring .....	106
How to monitor a planned route.....	106
How to View Waypoint Information when monitoring a route.....	107
Route information box .....	107
Monitor Route dialog.....	108
How to monitor a planned user chart or notes .....	111



Voyage planning checklist example.....	112
Change Of Watch checklist example .....	113
Vessel information "S/S Martha" .....	114
Route planning exercise Arrival Felixstowe .....	119
Route planning exercise Felixstowe to Algeciras Part 1 of 3 .....	120
Route planning exercise Felixstowe to Algeciras Part 2 of 3 .....	121
Route planning exercise Felixstowe to Algeciras Part 3 of 3 .....	122
Last page of document .....	124

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## Trainee's Schedule

### Day 1:

08.15 – 08.30	Welcome
08.30 – 09.15	Presentation of ECDIS functions
09.15 – 10.00	Presentation of ECDIS functions
10.00 – 11.00	ECDIS setup
11.00 – 12.00	ECDIS setup & Manuals
12.00 – 12.30	Lunch Break
12.30 – 13.00	Documentation
13.00 – 13.30	Documentation
13.30 – 14.00	Chart handling
14.00 – 14.30	Chart handling
14.30 – 15.45	Chart Handling

### Day 2:

08.15 – 08.30	Updating the software
08.30 – 09.15	Sensors, Alarms & Fall back arrangements
09.15 – 10.00	Sensors, Alarms & Fall back arrangements
10.00 – 11.00	Planning Tools
11.00 – 12.00	Planning Tools
12.00 – 12.30	Lunch Break
12.30 – 13.00	Monitoring the route plan
13.00 – 13.30	Monitoring the route plan
13.30 – 14.00	Written Multiple Choice Test
14.00 – 14.30	Written Multiple Choice Test
14.30 – 15.00	Evaluation of Test
15.00 – 15.30	Monitoring the route plan
15.30 – 15.45	Evaluation



## Introduction: Why ECDIS Type Specific Training?

The requirements for ECDIS Type Specific Training has its foundation in the new STCW-2010 (The 2010 Manila Conference) as well as in the ISM code.

### STCW.

Though the STCW itself does not require type specific training, the requirements for Training and assessment in the operational use of Electronic Chart Display and Information Systems when using simulators for training or assessment are so comprehensive that a type specific course will probably be the only option to achieve the level of competence needed for the seafarer to use the equipment in a safe and proficient manner.

Realising this, several Flag Administrations have already laid down flag state requirements for ECDIS Type Specific Training.

### The ISM.

ISM: 6.3 "The Company should establish procedures to ensure that new personnel and personnel transferred to new assignments related to safety and protection of the environment is given proper familiarization with their duties. Instructions which are essential to be provided prior to sailing should be identified, documented and given."

ISM 6.5 "The Company should establish and maintain procedures for identifying any training which may be required in support of the safety management system and ensure that such training is provided for all personnel concerned."

### Flag state requirements.

We have looked at a small selection of flag state requirements.

### British Maritime and Coastguard Agency (MCA).

3.1 ECDIS ship specific equipment training for Deck Officers must relate to the make and model of the equipment fitted onboard the ship which they are currently serving. The decision on how to deliver ship specific training is now the responsibility of the ship owner or operator. They must take into account their responsibilities in accordance with ISM code (specifically sections 6.3 and 6.5) and also the STCW convention,

Regulation I/14 - 5:

Every company shall ensure that:

"Seafarers, on being assigned to any of its ships, are familiarized with their duties and with all ship arrangements, installation, equipment, procedures and ship characteristics that are relevant to their routine or emergency duties".



## **The Department of maritime Administration from Bermuda.**

In ships where ECDIS is the primary navigational system there is a requirement for all navigational officers to have completed both generic ECDIS training and ship specific ECDIS training.

Port State Control Officers will expect to see evidence of this training during inspections.

Generic ECDIS training may include any ECDIS course based on IMO Model course 1.27 either as a dedicated ECDIS course or as part of a broader course.

Ship specific ECDIS training and familiarisation should be based on the actual equipment fitted on board and provided before the officer is expected to use the equipment. If the generic training course has been undertaken on the same equipment, then the course certificate should make clear the equipment that was used for the training in order to be accepted as meeting this requirement.

In general, the ship specific training should be conducted on the equipment that is to be used by a manufacturer, his approved agent or someone who has received a trainer's programme for that equipment. A manufacturer's computer based training package can be accepted for this purpose.

The company operating the ship should ensure that the ship specific training is carried out and clearly documented. Given the critical nature of this training and the records of it this process should be incorporated in the ships Safety Management System.

## **The Maritime and Port authority of Singapore.**

Masters and deck officers on ships installed with ECDIS must have thorough knowledge and ability to use ECDIS for safe and efficient voyage. They should undertake approved Generic ECDIS Training meeting the competency requirements prescribed in 2010 Manila amendments to the STCW Convention and STCW Code.

In addition, they must undergo Familiarisation Training to have operational knowledge of the specific model of ECDIS installed on the ship. Appropriate resources supplied by the ECDIS manufacturer (e.g. courses in ECDIS training centre ashore, e-learning via DVD or similar means) may be accepted as part of the ECDIS Familiarisation Training. 'Trickle down' training (i.e. one officer informally trains another on board a ship) is not acceptable. If Familiarisation Training is to be conducted on board, such training should be properly structured, provided by a dedicated officer and cover all functionality and effective use of the system.

The Familiarisation Training provided to officers must be properly documented in the ship's safety management system. If the Generic Training is conducted ashore on a particular type and model of ECDIS installed on a ship, such training is acceptable as meeting both the Generic and Familiarisation Training. In such cases, it should be appropriately documented in the ECDIS training certificate.



## **Australian Maritime Safety Authority (AMSA).**

All masters and officers in charge of a navigational watch on ECDIS-fitted ships who commenced an approved education and training program before 1 July 2013 will need to have undertaken approved ECDIS generic training and familiarisation training.

Familiarisation training should build on the IMO model course 1.27 and be delivered by a suitable person or organisation, such as the ECDIS manufacturer, manufacturers agent or another qualified trainer.

The familiarisation training should cover the following topics.

Familiarisation with available functions.  
Familiarisation with the menu structure  
Display setup  
Setting of safety values  
Recognition of alarms and malfunction indicators and action to be taken.  
Route planning.  
Route monitoring.  
Changing over to backup system.  
Loading charts and licenses.  
Updating software.

The familiarisation training should be done by a qualified instructor and not a colleague and the training should be following a lesson plan and at the end of the course there should be an evaluation of the student after the course where he or she demonstrates key navigational tasks

## **OCIMF Sire inspection.**

The Master and deck officers should be familiar with the operation of the ECDIS. Master and deck officers should be able to demonstrate the operation of the ECDIS including, but not limited to.

Creating and uploading passage plans  
Recalling previous voyages  
Route checking and management of alarms  
Plotting manual fixes (visual bearing and radar range)  
Creating parallel index lines  
Setting safety depths and safety contours as appropriate to the draught of the vessel  
Setting of Safety frame/safety cone  
Ensuring system is updated to the latest corrections.  
AIS and or Radar overlay if fitted  
Understanding of limitations of operating in RCDS mode  
Knowledge of SCAMIN and how it is displayed  
Knowledge of CATZOCs  
Familiarity of deck officers with contingency action in case of ECDIS failure.

The above list is not exhaustive and the inspector can ask other features to be demonstrated in order assess knowledge of the system. Further guidance to the operation of ECDIS can be found in MSC.1/Circ 1503 "ECDIS – Guidance for Good Practice".



## Latest from the British Admiralty.

As more ships are affected by the mandatory carriage of ECDIS, more headlines have been dedicated to a rise in detentions related to ECDIS. An analysis of the reasons for Port State Control Officer (PSCO) detention quickly demonstrates that it is not a failure of design, but a failure of ECDIS management which has caused these detentions. Reasons include:

Failure to use latest edition and up to date ENC for voyage planning

Incorrect scale ENC available

Crew ECDIS familiarisation inadequate

ECDIS policy and procedures in the ISM are insufficient

In addition to PSCO detentions there is also a reported rise in ECDIS related deficiencies and observations from vetting inspectors related to the management of ECDIS. This includes crew familiarisation and insufficient policies and procedures for safety settings such as under keel clearance.

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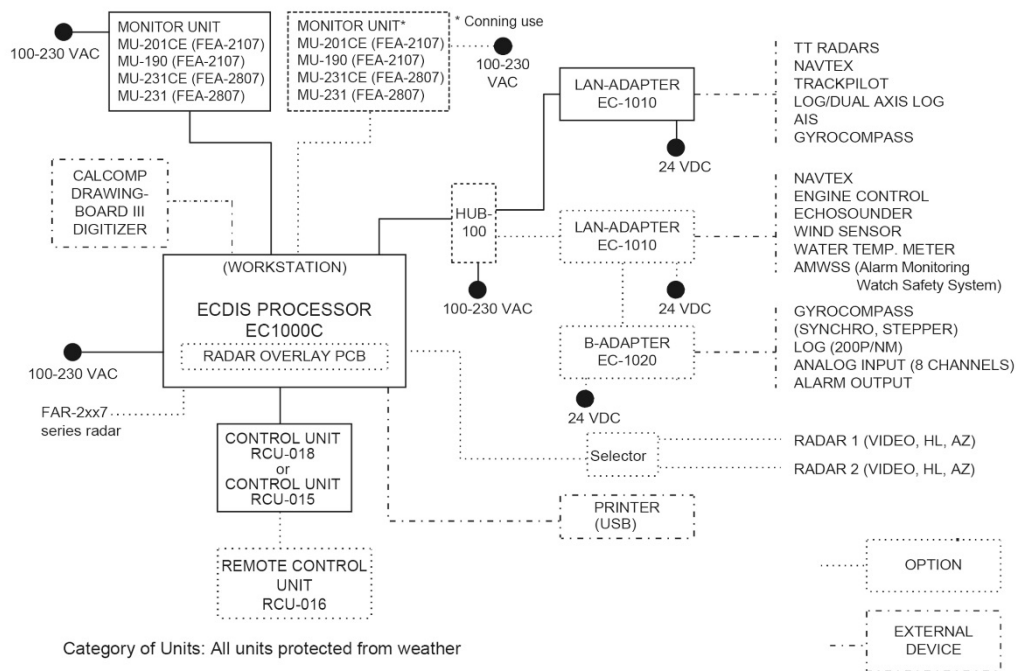


## Chapter 1: General Information

### System configuration:

#### Single workstation

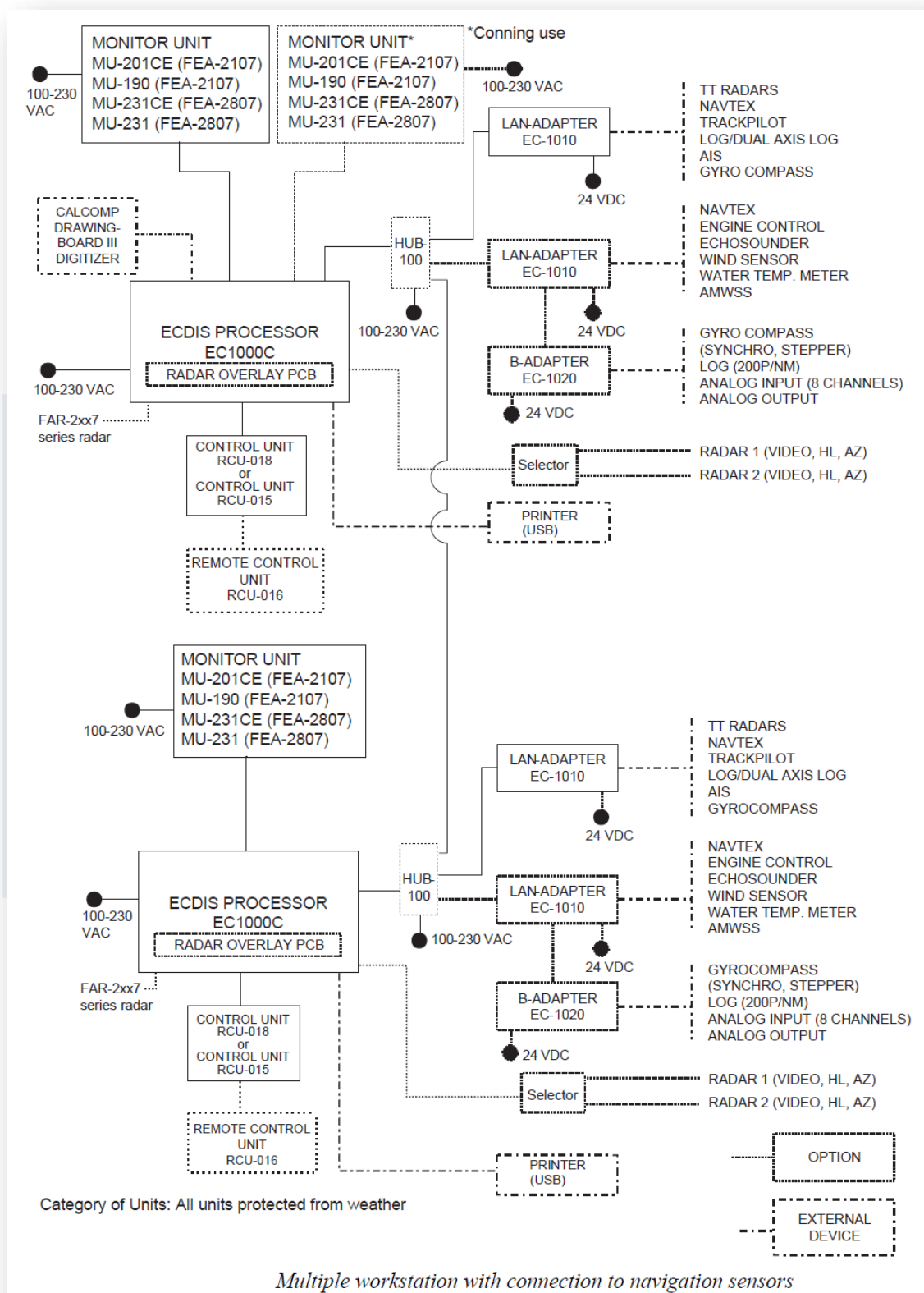
#### 1.2.1 Single workstation



Single workstation with connection to navigation sensors



## Multiple workstations

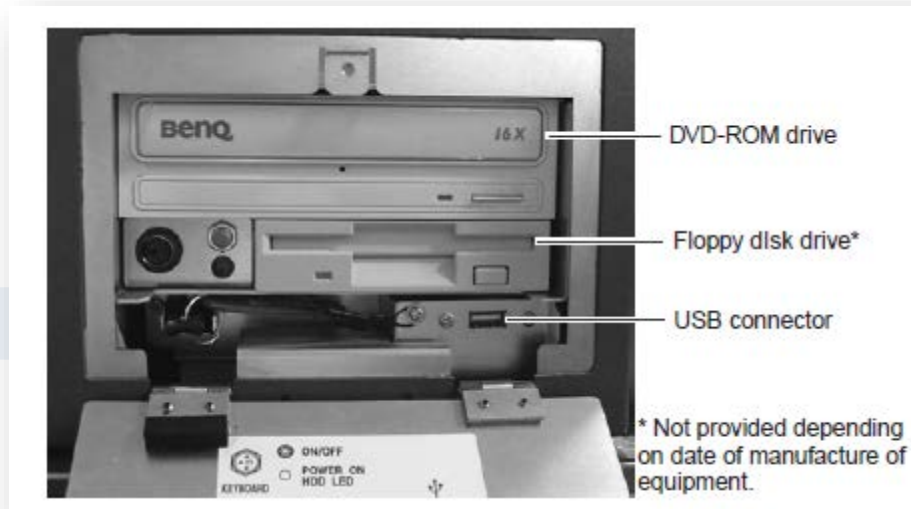




## Processor Unit EC-1000C

The Processor Unit is the heart of the system, and is responsible for the loading, storing, updating and processing of electronic sea charts, with the DVD drive.

The Processor Unit has two power switches. The Mains switch turns off the power from the switchboard. The Power switch turns off the power to the ECDIS system.

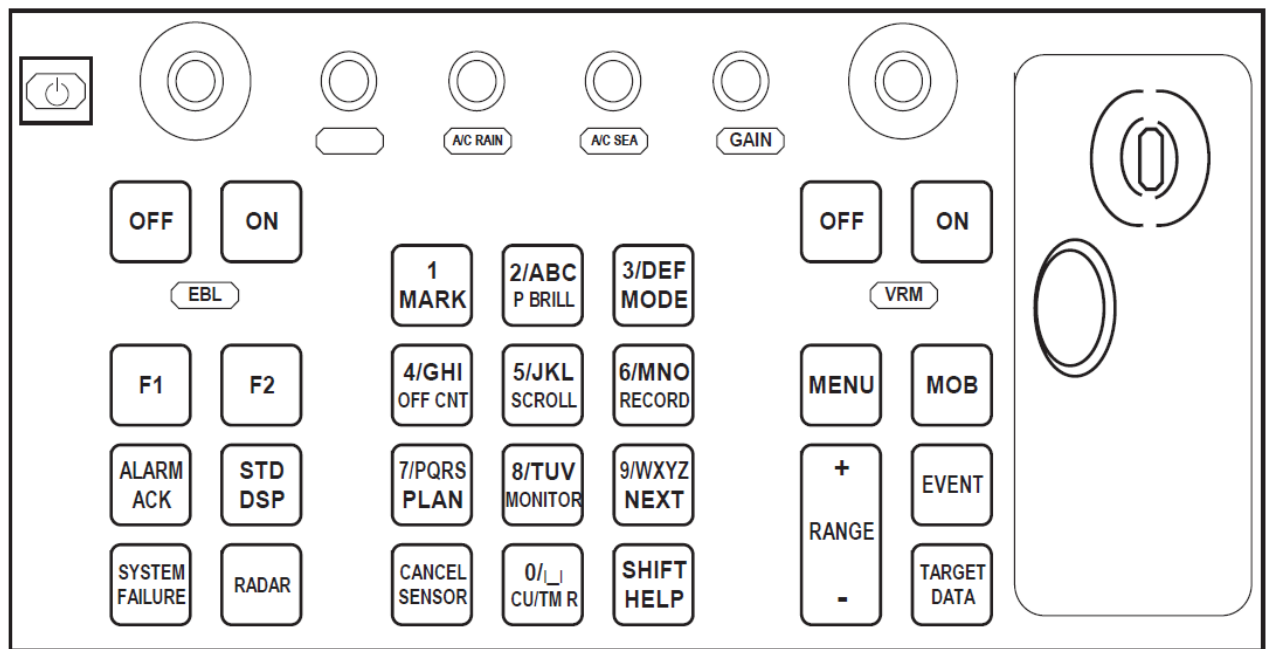


**Note:** To keep the system stable, restart the unit at least once a month.



## ECDIS Control Unit RCU-018

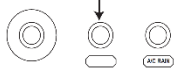
The RCU-018 consists of controls, keys, keyboard and trackball module (trackball, scroll wheel, left and right mouse button). The trackball module functions like a mouse; the operator rolls the trackball, operates the left and right mouse buttons and the scroll wheel to access functions and then clicks the left button to confirm selection.



*Layout of the Control Unit RCU-018*



## Control description

Key	Description
Power	Turns the system on/off. (This control does not switch the display on/off.)
VRM rotary encoder	Adjusts active VRM.
VRM ON	Activates and displays VRM 1 if none is displayed or VRM2 is active. Activates and displays VRM 2 if VRM1 is active.
VRM OFF	Inactivates and erases VRM 1 if both VRMs are displayed. Inactivates and erases VRM 2 if VRM1 is active.
EBL rotary encoder	Adjusts active EBL.
EBL ON	Activates and displays EBL1 if none is displayed or EBL 2 is active. Activates and displays EBL 2 if EBL1 is active.
EBL OFF	Inactivates and erases EBL1 if both EBLs are displayed. Inactivates and erases EBL 2 if EBL1 is active.
F1	Activates operator-defined function or menu.
F2	Activates operator-defined function or menu.
ALARM ACK	Alert acknowledgement for alerts generated by chart, navigation or steering calculation.
SYSTEM FAILURE	The red lamp behind the key lights and the buzzer sounds for system failure. Hit this key to silence the buzzer. The key remains lit until the reason for the problem is removed. System failure: control unit cannot communicate with EC-1000C. (EC-1000C is inoperative.)
RADAR	Displays Radar Overlay dialog box, which provides functions for adjustment of the radar picture.
STD DSP	Activates standard display presentation on the ECDIS. Restore monitor brilliance to calibrated state.
1/MARK	Displays the Nav. Marks dialog box, which mainly provides for activation/deactivation of various markers.
2/ABC/P BRILL	Adjusts control unit keyboard backlighting (dimmer).
3/DEF/MODE	Selects presentation mode: North-up TM, Route-up RM, Course-up RM, North-up RM, Course-up TM.
4/GHI/OFF CNT	Offcenters your ship's position to cursor location on the ECDIS display. Press again to return your ship's position to screen center.
5/JKL/SCROLL	Enables scrolling on charts, with the trackball active.
6/MNO/RECORD	Opens Voyage Record sub menu.
7/PRQS/PLAN	Opens Plan Route dialog box.
8/TUV/MONITOR	Opens Monitor Route dialog box.
9/WXYZ/NEXT	Opens "Next" page in multi-page dialog box.
CANCEL/SENSOR	Opens Sensors dialog box; closes open dialog box or window.
0/space CU/TM R	Returns your ship marker to screen center in TM and CU modes; inserts a space.
SHIFT/HELP	SHIFT: Shifts between lower case and upper case alphabets. HELP: Activates info/help. (Mouse must not be over input field.)
MENU	Displays the Main menu.
+ RANGE –	Adjusts chart scale.
MOB	Inscribes MOB mark on the screen.
EVENT	Records textual information fixed to your ship's position.
TARGET DATA	Shows target data for selected Tracked Target; provides data for selected chart area.
GAIN	Adjusts radar gain on the radar overlay.
A/C RAIN	Reduces rain clutter on the radar overlay.
A/C SEA	Reduces sea clutter on the radar overlay.
	Adjust backlight brilliance of ECDIS display(s). Color calibrated backlight brilliance can be set using "Standard Display" button or selecting desired "Palette" in the Chart page of the Display window.



## How to Turn the Power On/Off

### How to turn the power on:

The system may be turned on by turning on the power switch at the rear of the processor unit then pressing the POWER switch on the Control Unit, until you feel a "click".

The equipment releases a beep when the POWER switch is turned on.

### How to turn the power off:

To turn off the system, reverse this sequence.

**Note 1:** The amount of resources used increases over time, sometimes slowing down operation. If operation seems to be slow, re-set the power, when use of the equipment is not required (when in port, etc.).

**Note 2:** If the ambient temperature is less than 0°C (32°F) when the power is applied, nothing appears on the display. This is because the heater is warming the chart processor unit. The display appears in approx. 10 minutes.

**Note 3:** Be sure all LAN cables are connected BEFORE turning on the power.

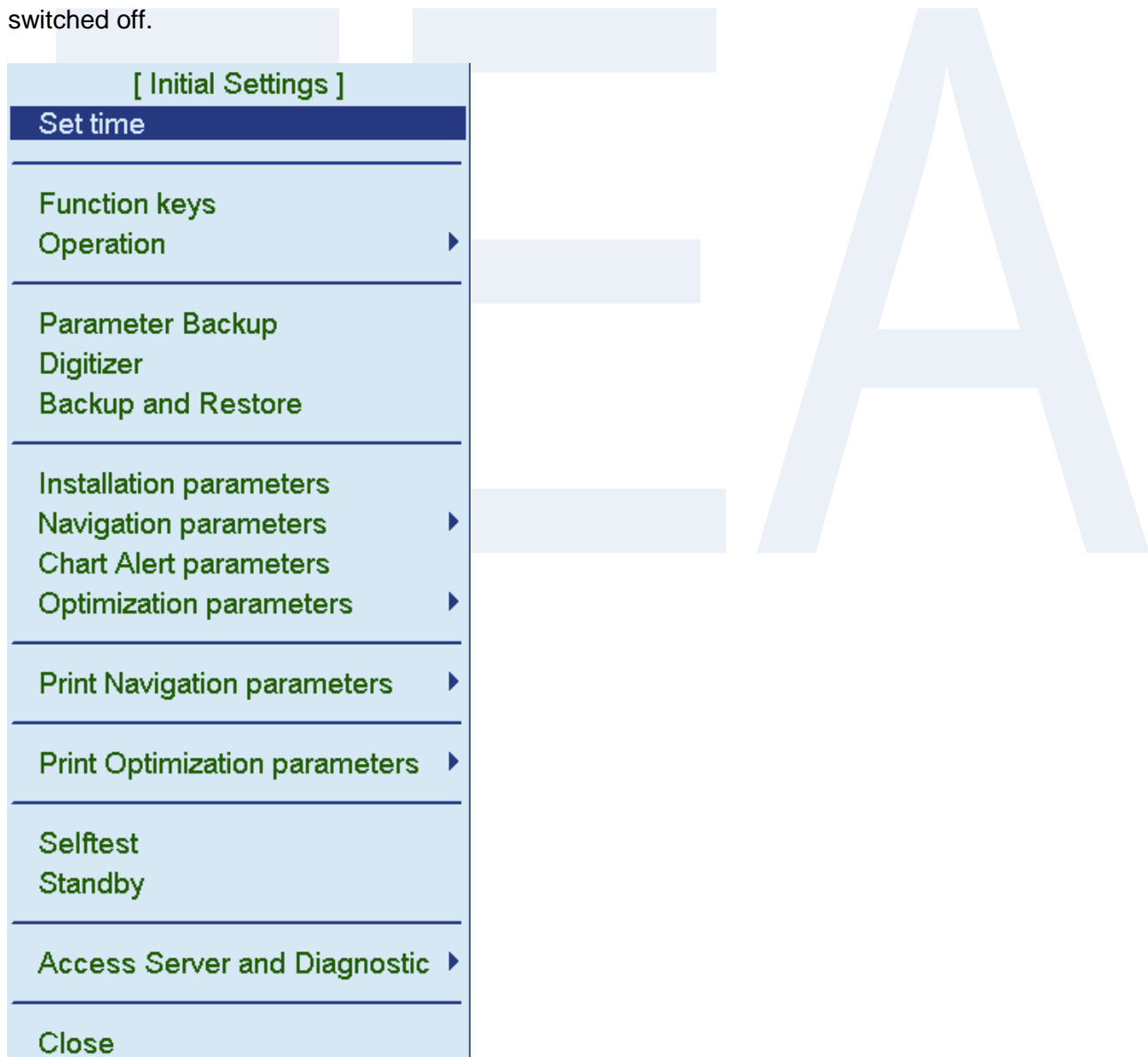
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## The Standby Mode

The standby mode deactivates the audio alarms from the ECDIS. Use it while in harbor or other similar situation where use of the ECDIS is not required. When you switch the Standby mode to ON, Human Interface, ARCS and S57 drawing processes are automatically restarted.

1. Spin the scroll wheel to show Menu/Info/Chart Menu in the mouse functions area then push the left mouse button.
2. Spin the scroll wheel to select Initial Settings and then push the left mouse button.
3. Put the cursor on the triangle inside the Initial Settings dialog box, and the menu shown below appears.
4. Select Standby then push the left mouse button.
5. The following window appears at the top of the ECDIS display to indicate that audio alarms are switched off.





# **SYSTEM IN STANDBY (audible alarms switched off)**

**BACK TO NORMAL MODE**

To switch the Standby mode to OFF, that is, return to normal operation, select "BACK TO NORMAL MODE" with the cursor and then push the left mouse button.



## Chapter 2: Presentation of ECDIS functions

### How to view the ECDIS Operator's Manual

#### Operator's Manual

The FEA ECDIS includes a digital copy of the Operator's Manual.

The manual is available through the HELP function.

How to open the HELP function:

1. Press the MENU button on the control unit to open the main menu.
2. Select HELP in the main menu and left click to open.

To close the Operator's Manual: Click on the X in the top right corner of the HELP dialog.

#### Operator's Manual version number

You can find the version number of the Operator's Manual in the chapter "Foreword".

#### ECDIS software version number

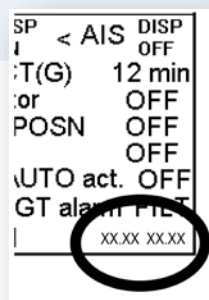
The ECDIS software version number is displayed in the Information Area, next to the system configuration indication.

There are two sets of ECDIS software numbers.

First set of numbers indicates version number of Human Interface, second set of numbers indicates version number of communication module for sensors.

They must have the same version number to ensure correct operation of the ECDIS.

From the Operator's Manual:





## ECDIS Display

The ECDIS (Electronic Chart Display and Information Systems) screen is divided into several areas.

The **Status bar**, which is always shown at the top of the screen, mainly displays equipment status.

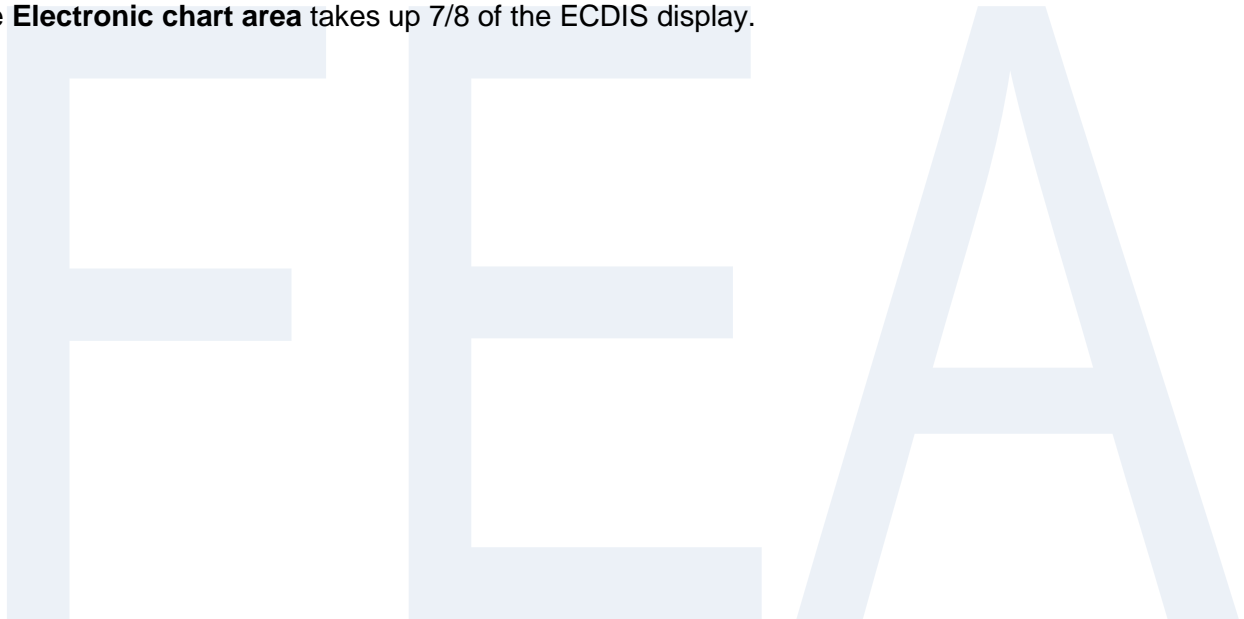
The boxes at the right side of the screen comprise the **Information area**.

They are permanently displayed and show information such as your ship's position, alerts generated by the system, workstation mode and cursor position.

The operator may display the data of his or her choice in one of the information areas called a **Sidebar**. (See section 3.3.3 "Sidebar on user interface".)

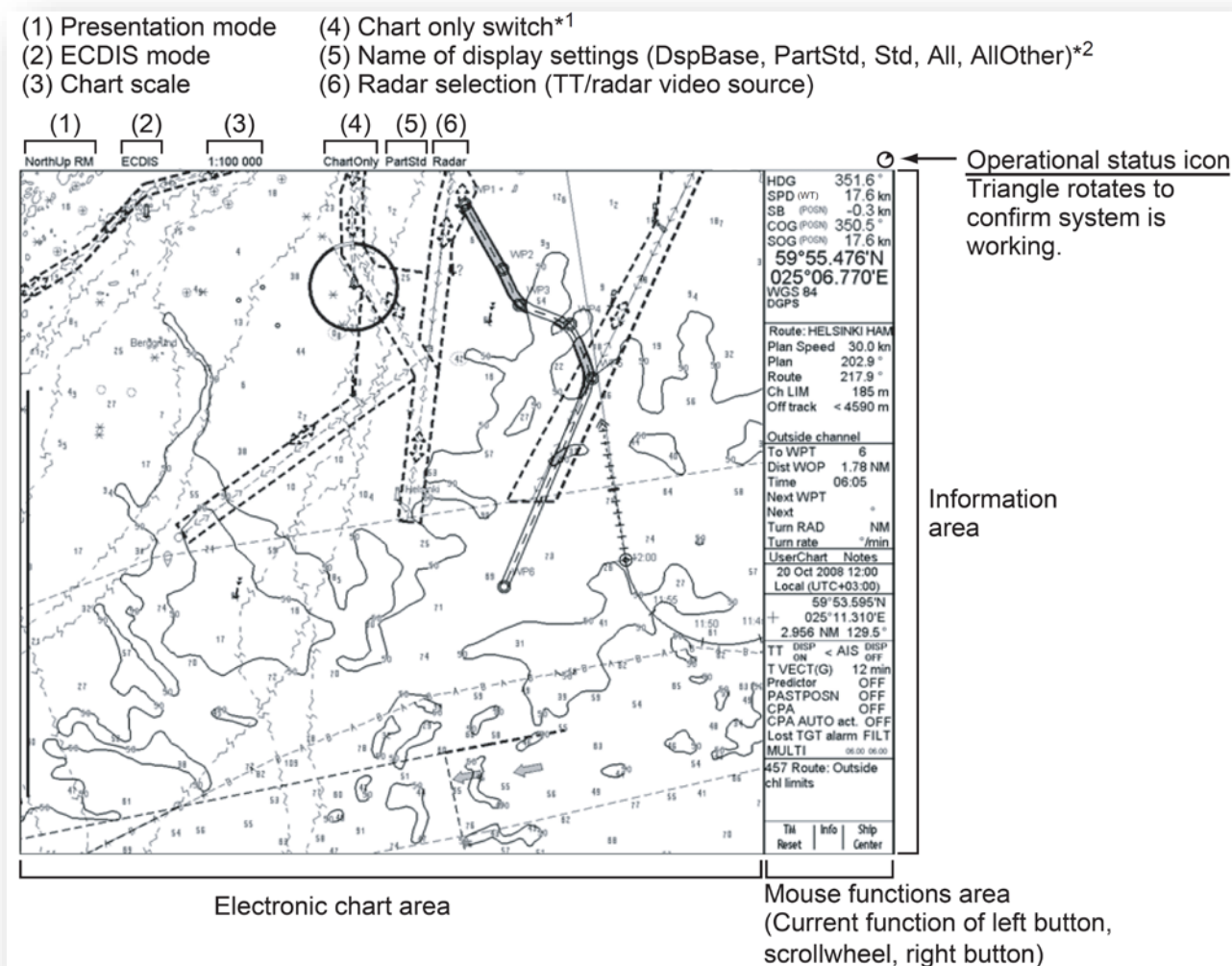
The bottom block in the information area is the **Mouse functions area**, and it shows the current left mouse button, scroll wheel and right mouse button functions - in that order from left to right.

The **Electronic chart area** takes up 7/8 of the ECDIS display.





## From the Operator's Manual:



\*1: Left-click to show information of ENC as selected by user in Chart Display settings. All other navigational information is removed from ECDIS chart display area until you release left mouse button.

\*2:

**DspBase:** When no options are checked on Standard page.

**PartStd:** When some of options (not all) are checked on Standard page.

**Std:** When all options are checked on Standard page and no options are checked on Other1/Other 2 pages.

**Other:** When all options are checked on Standard page and some options (not all) are checked on Other1/Other2 pages.

**AllOther:** When all options are checked on Standard page and all options are checked on Other1/Other2 pages.



## Information Area

The information area displays your ship's position, course and speed and the cursor's location on the chart

### Information from the positioning sensors:

- HDG: Heading and its source if it is not true gyro.
- SPD: Water speed
- SB: Transversal speed, positive value to Starboard.
- COG: Course over ground and its source
- SOG: Speed over ground
- Latitude and longitude position of own ship
- Datum in use (WGS 72, WGS 84, European 1950, etc.), which is shown above positioning source.
- Positioning source: Dead Reckoning, GPS, DGPS, LORAN, FILTER, etc.

HDG	128.0 °
SPD (WT)	18.0 kn
SB (BT)	0.0 kn
COG (BT)	128.0 °
SOG (BT)	18.0 kn
56°04.414'N	
012°36.304'E	
WGS 84	
DGPS	

### Cursor position information:

- Latitude and longitude position of cursor displayed in selected datum.
- Range and bearing from your ship's position to cursor, Bearing is either RL (Rhumb line) or GL (Great circle)

51°10.914'N	
+	001°46.805'E
69.73NM 209.9° RL	

**Note:** The order of items in the position and cursor windows can change with the sidebar used. See the next page.



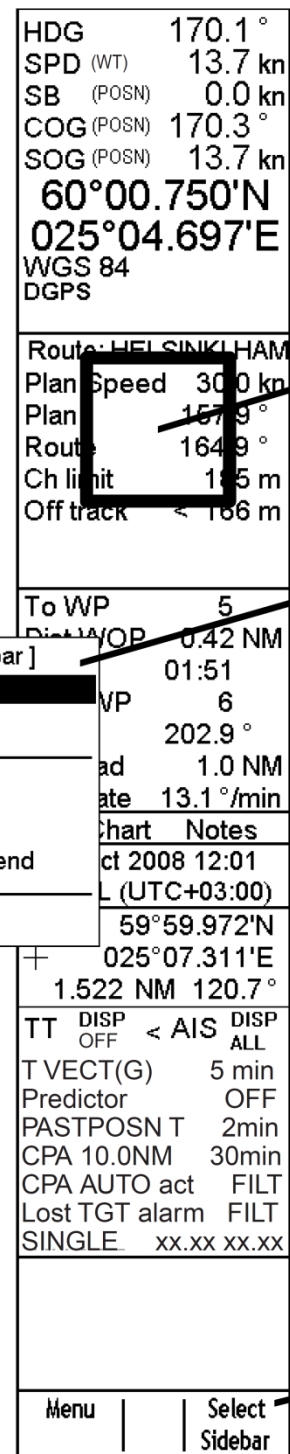
## How to open a Sidebar

Sidebar(s) may be opened as shown below.  
 Two side bars may be displayed simultaneously.

1. Put the cursor on the area shown.
2. "Select Sidebar" appears in the mouse functions area. See figure at right.
3. Click the right mouse button to show the sidebar menu on the display.
4. Spin the scroll-wheel to select desired sidebar from the menu then push the scroll-wheel to insert a checkmark

## How to close a Sidebar

Remove the checkmark from the sidebar menu.



HDG 170.1°  
 SPD (WT) 13.7 kn  
 SB (POSN) 0.0 kn  
 COG (POSN) 170.3°  
 SOG (POSN) 13.7 kn  
 60°00.750'N  
 025°04.697'E  
 WGS 84  
 DGPS

Route: HELSINKI HAM  
 Plan Speed 30.0 kn  
 Plan 157.9°  
 Route 164.9°  
 Ch limit 135 m  
 Off track < 166 m

To WP 5  
 Distance 0.42 NM  
 Time 01:51  
 WP 6  
 Heading 202.9°  
 Lead 1.0 NM  
 Rate 13.1°/min  
 Chart Notes  
 Date 2008 12:01  
 Time (UTC+03:00)  
 59°59.972'N  
 025°07.311'E  
 1.522 NM 120.7°

TT DISP < AIS DISP  
 OFF ALL  
 T VECT(G) 5 min  
 Predictor OFF  
 PASTPOSN T 2min  
 CPA 10.0NM 30min  
 CPA AUTO act FILT  
 Lost TGT alarm FILT  
 SINGLE xx.xx xx.xx

[ Sidebar ]  
☒ Route  
 Autopilot  
 Conning  
 Docking  
 Chart Legend  
 Close

Menu | Select Sidebar



## How to activate dialog boxes

The dialog boxes provide information to the use or a means to change equipment settings.

The boxes are activated by mouse-clicking on certain areas of the ECDIS display.

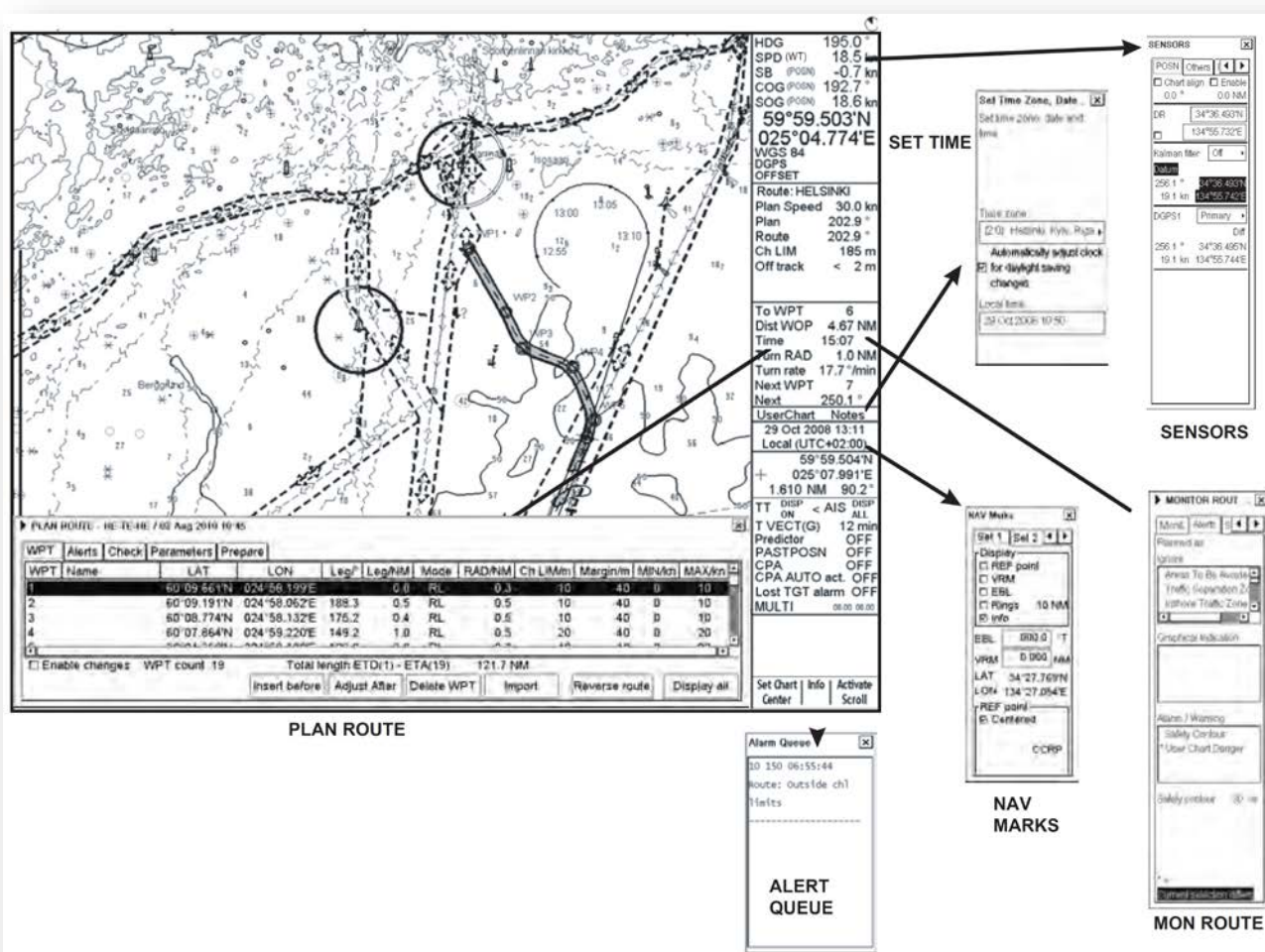
Place the cursor on the appropriate area then click the right or left mouse button to display the corresponding dialog box on the ECDIS display.

See the figure below to find the places and mouse buttons to click to get desired dialog boxes on the display.

To close a dialog box, click the X at the top right corner of the dialog box.

Note that only one dialog box may be shown at a time.

From the Operator's Manual:





## Chapter 3: Visual settings and adjustments

### Chart Display

#### How to set the Safety Contour

You can set value for the Safety Contour in the Chart Display.

To open the Chart Display, press the Menu button on the control unit to open the main menu. Then left click on Chart Display.

#### How to set the value for Shallow Contour, Safety Depth and Deep Contour

You can set values for **Shallow Contour**, **Safety Depth**, and **Deep Contour** in the Chart Display.

The colours used for depth presentation on the electronic chart are controlled by setting values for **Shallow Contour**, **Safety Contour**, and **Deep Contour**.

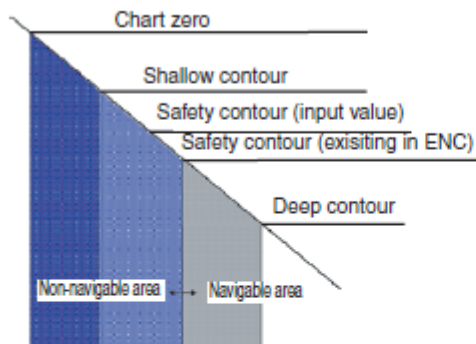
Soundings on the electronic chart, which are equal to or less than the value of **Safety Depth**, are highlighted in black (when they are displayed).

See the illustrations on the next couple of pages for the difference between **Four-Shades presentation** and **Two-Shades presentation**.



From the Operator's Manual:

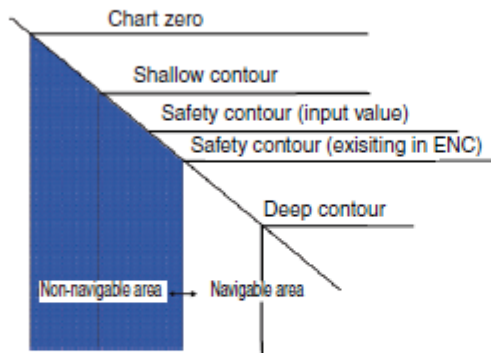
### Four shades presentation



**Four shades presentation:** four colors are used for depths. If the value entered as the safety contour does not exist in the electronic chart, the system automatically selects the next available deeper depth contour as the safety contour. For example, the input value is 8 m, but there is no 8 m depth contour in the electronic chart. Then, the system automatically selects the next available deeper depth contour (10 m) as the safety contour. The depth contour value of 10 m is used as the safety contour in the electronic chart.

The shallow contour shows visual color change inside an unsafe water area. An unsafe water area is all areas shallower than the "safety contour". Set the value for the shallow contour less than the value of the safety contour.

### Setting chosen by ECDIS when Four shades is not chosen.



unsafe water is shown in blue and safe water is shown in white. The safety contour is used to qualify unsafe water (depth shallower than safety contour) and safe water (depths deeper than safety contour).

If the value entered as the safety contour does not exist in the electronic chart, the system automatically selects the next deeper available depth contour as the safety contour,

*Selection of Four-Shades and Two-Shades presentations can be made by selecting them from the [Chart] page of [Chart Display].*



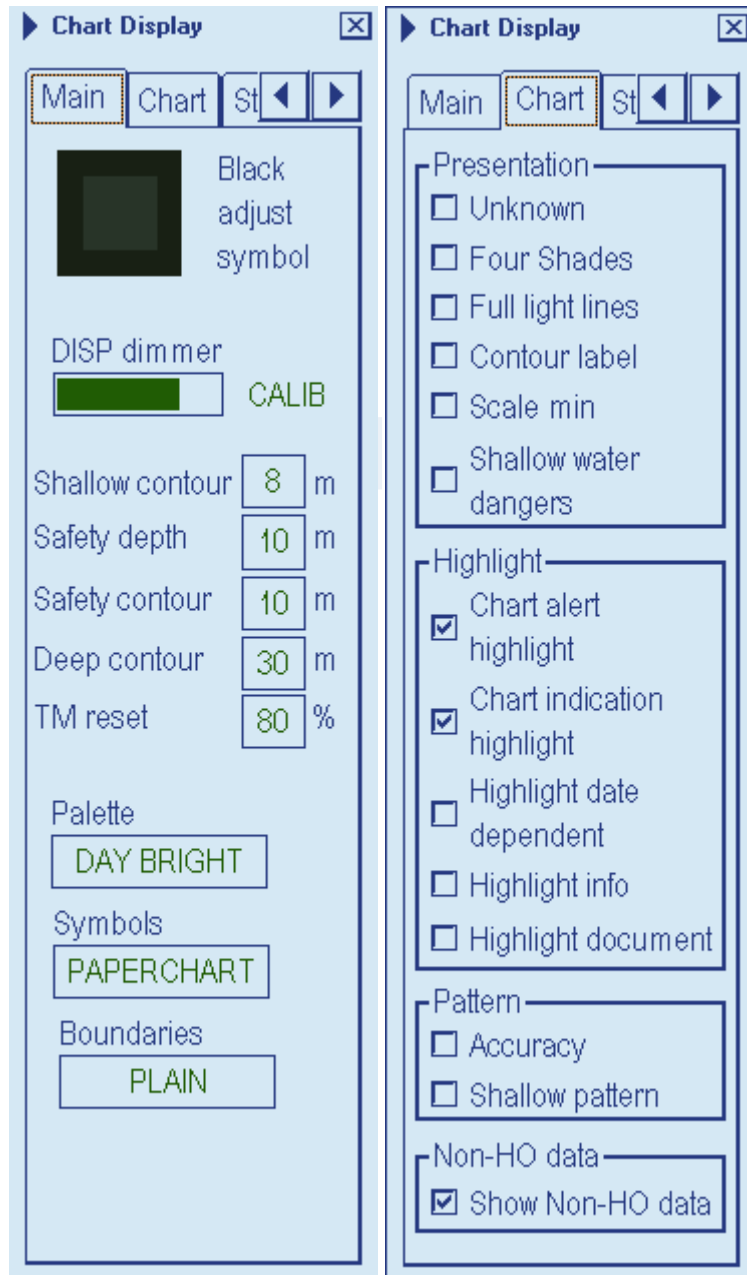
**THIS PAGE IS LEFT INTENTIONALLY BLANK**

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## Main and Chart pages

From the Operator's Manual:



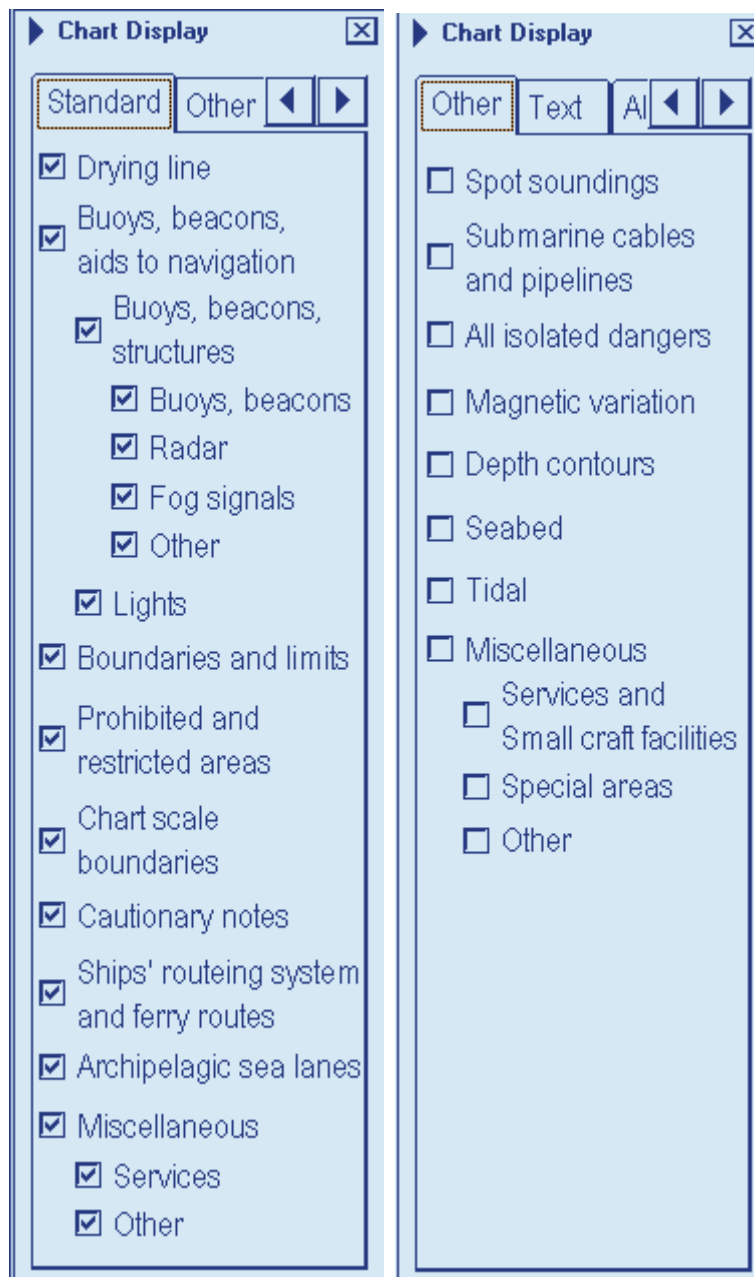


## Standard and Other pages

The [Standard] page contains the chart features defined by IMO that comprise the IMO Standard Display. You can recall the standard display at any time in a single action: Press the [STD DISP] button on the Control Unit to get the standard display.

The [Other] pages contains chart features for which are not part of the IMO-defined Standard Display.

From the Operator's Manual:

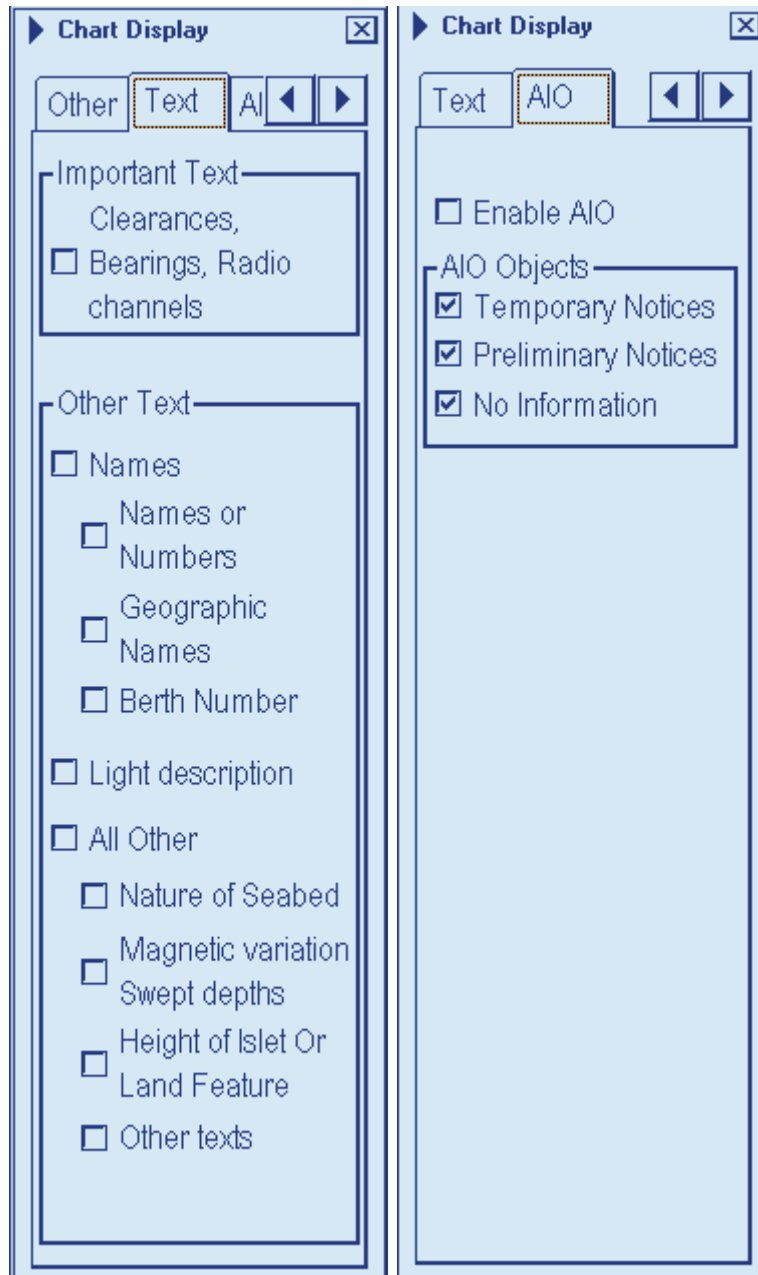




## Text and AIO page

The [AIO] page lets you control what is displayed from the AIO (Admiralty Information Overlay).

From the Operator's Manual:





## Symbol Display (How to Control Visible Navigation Features)

Visibility control of the navigation features is divided into five pages in the Symbol Display dialog box:

The **Route** page controls planned and monitored route.

The **Tracking** page controls past tracks and some other features.

The **Mariner** page controls user charts.

The **Targets** page controls TT and AIS targets.

The **General** page controls own ship and target related things.

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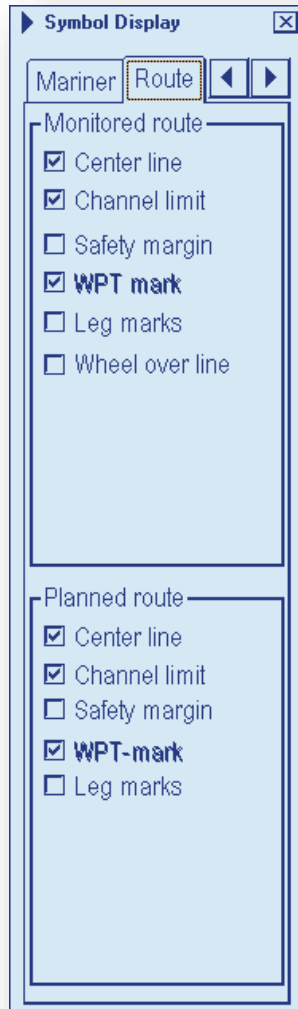
## Route page

This page contains selections for route-related navigation features.

**Monitored route:** Select which part of monitored route to display.

**Planned route:** Select which part of planned route to display.

From the Operator's Manual:



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## Tracking page

Tracking

Target

◀

▶

Own ship past tracks

☐ System
 ☐ Primary
 ☐ Secondary

Style

Tick

▶

Length

20

min

Labels

5

min

Target past positions

Density

Medium

▶

Style

Points

▶

Events

☐ User Event
 ☐ Auto Event
 ☐ Positions

Show

Newer than 3 months

▶

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## Past tracks

- **System:** Plot own ship's tracks using system-fed position.
- **Primary:** Plot own ship's past track with position fed from the primary sensor.
- **Secondary:** Plot own ship's past track with position fed from a secondary sensor.
- **Style:** Select time stamp position for past track (indicated by Tick or Point).
- **Length:** Select length of past track.
- **Labels:** Select label interval.

## Target past positions

- **Density:** Select density of past position of points.
- **Style:** Select style of presentation of target's past position.

## Events

These marks are based on voyage log records.

- **User Event:** Check to display event symbols on ECDIS, where the system has recorded an event based on conditions you have set (Type: User and Auto).
- **Auto Event:** Check to display automatically entered event symbols, where the system has recorded an event based on conditions you have set (Type: Ship and Alarm).
- **Positions:** Check to display the latitude and longitude of an event.

**Note 1:** MOB event is always visible.

**Note 2:** You can select period of time to display event marks in the list box "Show".



## Chart legend for S57 charts

The chart legend, which provides various data about the chart currently displayed, can be toggled on and off by placing the cursor in the sidebar, clicking the right mouse button, choosing Chart Legend from the menu then pushing the scroll wheel.

This system is capable of showing more than one S57 chart at a time. This feature is called the multi-chart display. If one S57 chart does not cover the whole display, the system will open more S57 chart cells for display, if appropriate cells for the displayed area are available. The chart legend shows information about S57 charts displayed on the electronic chart display area. The information is displayed with reference to own ship position if automatic TM reset is active, or with reference to the current position of the cursor if automatic TM Reset is OFF.

Cell	GB301183
Compilation scale	1:90 000
Edition number	5
Last displayed update	1
Update issue date	20 May 2016
Last update appl. date	12 Jun 2015
Projection	Mercator
Horizontal datum	WGS 84
Vertical datum	Mean high water springs
Sounding datum	Approximate lowest astronomical tide
Quality of data	Zone of confidence B
Position accuracy	
Magnetic var.	0°0'E 2015 (8.0'E)
Depth metres	Height metres
Safety contour (display/set)	10.0/10 m
Safety depth (set)	10 m

### Cell name: Name of the chart

**Compilation scale:** Is the display scale at which the ENC is intended to be used for navigation or default scale

**Edition number:** Edition number of the chart cell.

**Last displayed update:** Number of last update, which is visible on the chart screen.

**Update issue date:** Issue date of last update, which is visible on the chart screen.

**Last update appl. date:** Date to which the last update, which is visible on the chart screen, is effective.

**Last update appl. date:** Date to which the last update, which is visible on the chart screen is effective

**Projection:** Projection of the chart. The projection is always Mercator.

**Horizontal datum:** Horizontal datum of the chart data as published by the chart producer. By definition this must be WGS 84.

**Vertical datum:** Vertical datum of the chart.

**Sounding datum:** Datum used for soundings.

**Quality of data:** Quantitative estimate of the accuracy of chart features, given by the chart producer.

**Position accuracy:** Value of accuracy of position

**Magnetic var.:** Amount of magnetic variation. A positive value indicates a change in an easterly direction and a negative value indicates a change in a westerly direction.

**Depth:** Unit of measurement for depth.

**Height:** Unit of measurement for height above sea level (for example, clearance height).

**Safety Contour (Display/set):** Value of set Safety Contour in Chart Display and Route Plan

**Safety Depth:** Value of set Safety Depth in Chart Display



## Chart Alerts

### General

The ECDIS can detect areas where the depth is less than the safety contour or detect an area where a specified condition exists. If you plan a route or if prediction of your ship's movement goes across a safety contour or an area where a specified condition exists, the system will display a visual alert or sound an audio alarm to alert you to impending danger. For this function, the ECDIS utilizes the chart database (S57 charts) stored on the hard disk in SENC format. **Note that the ECDIS calculates dangerous areas using the largest scale chart available, which may not be the visualized chart.**

You can select objects that are included for calculation of danger area (for example, restricted areas). A window lists the various areas that activate danger warnings.

You can also define your own safe area by creating a user chart area. The system can utilise these areas when calculating chart alerts. This is very useful with raster chart material such as ARCS.

The ECDIS can check the following for you:

- Predicted movement area of your ship
- Planned route with an easy to use locator function to find dangerous areas

The ECDIS will highlight the following for you:

1. Dangerous areas inside predicted movement area of your ship
2. Dangerous areas inside your monitored route
3. Dangerous areas inside your planned route

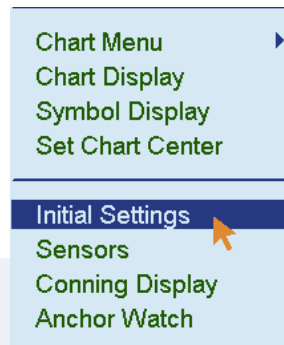
**Note:** If any of the selected danger area alerts are in pending state, an alert for the same category of danger area will not cause a new alert. For example, there is a safety contour alert acknowledged but the condition currently exists. In this case, that safety contour alert will not generate a new visual or audio alert.



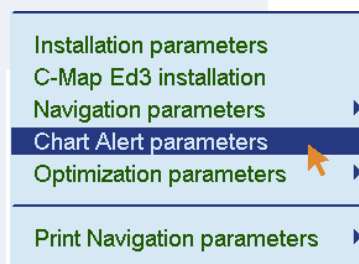
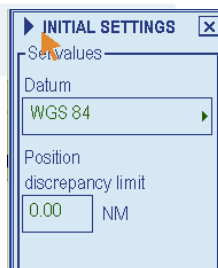
## How to select objects used in chart alerts

You can also include calculation areas that have to be noted when sailing (for example, restricted areas). To include these areas in chart alerts, do the following:

1. Spin the scroll wheel to show Menu/Info/Chart Menu in the mouse functions area then push the left mouse button.
2. Select Initial Settings from the menu then push the scroll wheel.



3. Put the cursor on the triangle inside the Initial Settings dialog box to open the Initial Settings menu.



4. Select Chart Alerts parameters then push the scroll wheel.
5. Click the Alerts tab to show the Chart Alerts dialog box. In the Ignore box at the top of the window, use the left mouse button to click the alert item you wish to process.





6. Select which alert type you desire. Click the Indication button to display a visual alert, or the Alert/Warning button to get an audio alarm as well. The item selected is moved from the Ignore box to the Graphical Indication or Alert/Warning box as appropriate.
7. To remove an alert, click it in the Indication or Alarm box with the left mouse button then click the Ignore button. To change an alert method, click the object type in the Indication or Alert box with the left mouse button then click the Indication or Alert button as appropriate.



8. Click the Check Area tab with the left mouse button.



## How to Activate Own Ship Check

Calculation of your ship's predicted movement is done using watch sector from your ship's position. Sector size is defined by time and Width or by distance and Width. To set them, do the following:

1. Spin the scroll wheel to show Menu/Info/Chart menu in the mouse functions area then push the left mouse button.
2. Roll the wheel to select Initial Settings then push the scroll wheel.
3. Put the cursor in the Initial Settings dialog box to show the menu displayed at left.
4. Roll the scroll wheel to select Chart Alert parameters from the menu then push the scroll wheel.

From the Operator's Manual:

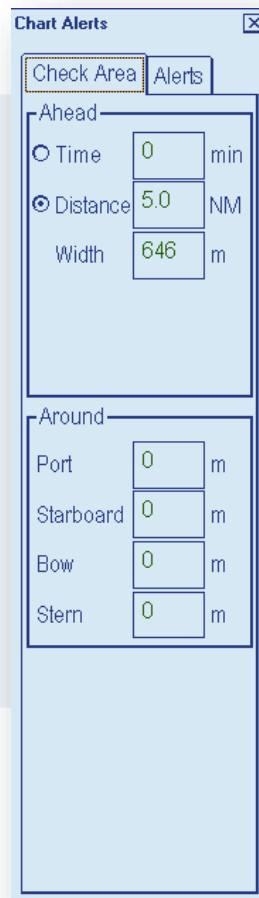


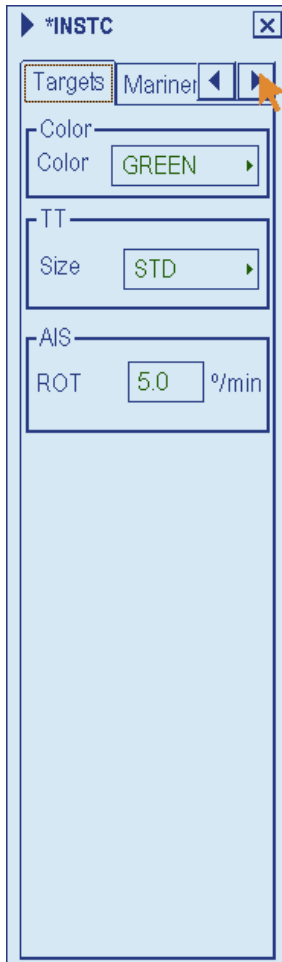
Chart Alerts	
Check Area	Alerts
Ahead	
<input type="radio"/> Time	0 min
<input checked="" type="radio"/> Distance	5.0 NM
Width	646 m
Around	
Port	0 m
Starboard	0 m
Bow	0 m
Stern	0 m



## Chapter 4: Targets

### Targets settings page

Open the [Symbol Display] and locate the [Targets] page to view or change the settings for targets.



**Colour:** Select colour of target from the list box.

**TT:** Select size of tracked target symbols to STD or Small.

**AIS:** ROT (°/min), limit to display AIS target with curved speed vector.

**Note:** Source of ROT must be ROT gyro on target vessel.



## Tracking page

Open the [Symbol Display] and locate the [Tracking] page



### Own ship past tracks

**Ship System:** Plot own ship's tracks using system-fed position.

**Ship Primary:** Plot own ship's past track with position fed from the primary sensor.

**Ship Secondary:** Plot own ship's past track with position fed from a secondary sensor.

**Style:** Set time stamp position for past track (indicated by Tick or Point)

**Length:** Set length of past track.

**Labels:** Set label interval.

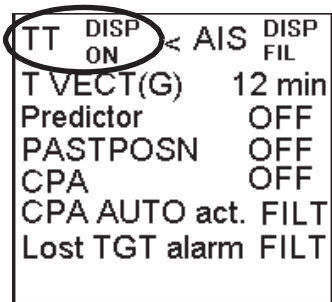
### Target past positions

**Density:** Select density of past position of points.

**Style:** Select style

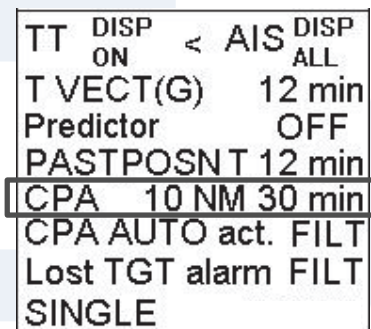
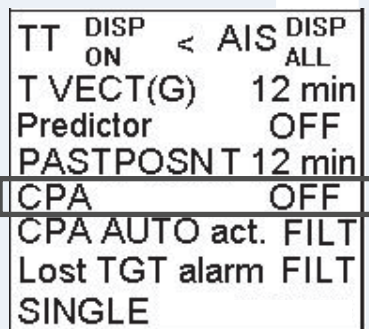


## How to Show and hide Tracked and AIS Targets



Put the cursor on the text "TT" and/or "AIS" in the information area then left- click to select one of the options (ON, OFF, FILT).

## How to Set CPA and TCPA Limits



You can set the CPA and TCPA limits used by the ECDIS in the information area.

- Put the cursor on the text "CPA OFF" then left-click to get distance and time fields.
- Put the cursor on the CPA distance value and use the scroll wheel to set distance for CPA.
- Put the cursor on the TCPA time value and use the scroll wheel to set time for CPA



## How to activate and setup the Radar Overlay

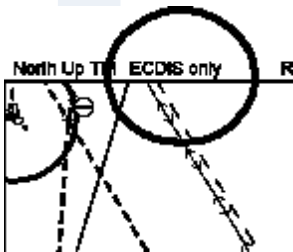
The radar overlay can be output to the ECDIS and shown on its display. Like details on vector charts, the radar overlay can be displayed or removed from the chart display. You can select how to display the radar overlay with the Radar selector on the status bar. To activate the radar overlay, put the cursor on the mode selector (location circled below), spin the scroll wheel to select "ECDIS and Radar", "Radar over Chart" or "Radar video only" in the Status Bar then push the left mouse button.

You can select from the following presentation modes with the radar overlay:

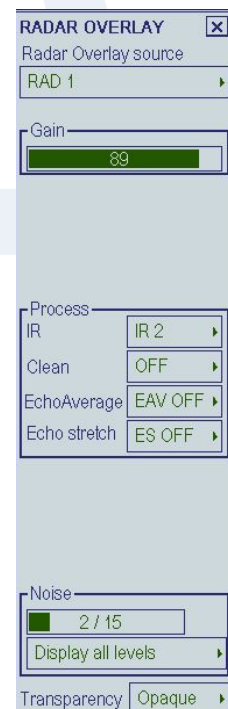
**ECDIS only:** Only chart is displayed on the ECDIS.

**ECDIS and radar:** With S57 chart material, the radar echo image is mixed into the chart so that some chart features lie above or beneath the radar image. This presentation follows the drawing rules of the Standard S52ed3.1 of IHO. If you use the ARCS chart material, the radar image is drawn on top of the chart.

**Radar over chart:** Radar echo image is drawn on top of the chart.



1. Click the [Radar Overlay Source] drop-down list to select the radar that is to feed echo data for the overlay.
2. The [Gain] slider bar sets the sensitivity of the radar echo image. To adjust the gain, put the cursor on the slider bar and roll the scroll wheel. (The gain can also be adjusted from the ECDIS Control Unit.)
3. [Transparency] controls "see through" behaviour of the radar overlay. The option [Opaque] superimposes radar echoes on the chart display without modifying their colour. "25%" displays radar echoes somewhat faintly, and "75%" displays radar echoes very faintly. It is recommended to use 25% or 50% when navigating narrow channels, so as not to conceal landmasses.





## Conning Display

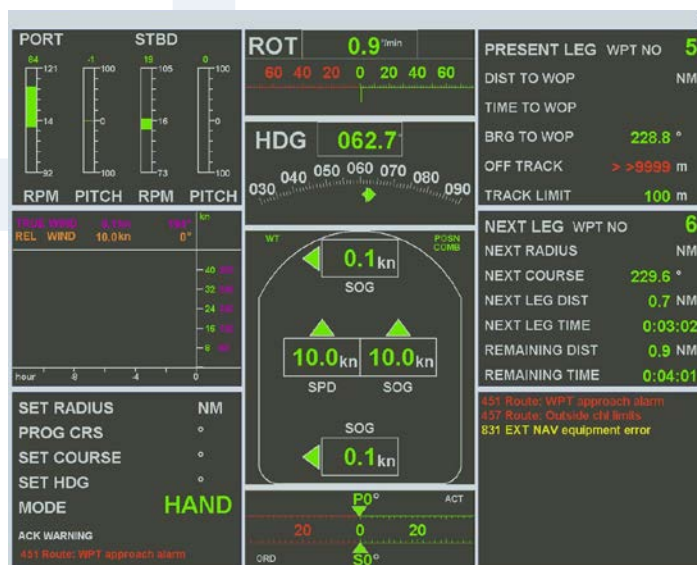
The ECDIS receives various data from sensors and can output the information in analog or digital format, make navigation calculations from the data display and show the results on the conning display. To show the conning display, click the [Mode] button on the Status Bar to select [Conning].

The ECDIS can be connected to up to 16 sensors which output analog data and up to eight sensors that output serial data. Data displayed on the conning display depends on the settings in the ECDIS and the conning display configuration set in the installation parameters, where you can arrange the layout of the conning display.

There are six predefined places on the conning display where you can specify data to display. The center of the conning display is fixed to show information defined by the manufacturer. For more information about how to process these windows, see the description of the installation parameters in the installation manual.

The figure below shows the locations of operator-defined windows.

**Note:** The actual conning display depends on the installation settings and the ship owner's request.





## NAVTEX Messages

When a NAVTEX message is received, the Alert "780 NAVTEX message received" appears. To display a NAVTEX message, do the following:

1. Click the [Main Menu] and [NAVTEX] button.



**NAVTEX Message**

Filter: All 197

Name: R20110513-114905

Message Code: 490 kHz / LA85

Type: Navigational warning

Status: Read

NCC-HAMBURG  
 060550 UTC MAI 11  
 NAUT. WARN. NR. 202  
 WESTLICHE OSTSEE. FEHMARNB

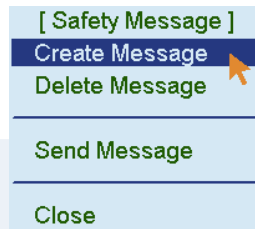
L/L 04° 00.000'N 008° 00.000'E



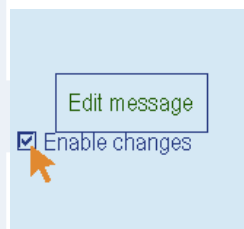
## Create an AIS safety message

You may send and receive messages via the VHF link, to a specified destination (MMSI) or all AIS-equipped ships in the area. Messages can be sent to warn of safety of navigation, for example, an iceberg sighted. Routine messages are also permitted. Short safety related messages are only an additional means to broadcast safety information. They do not remove the requirements of the GMDSS.

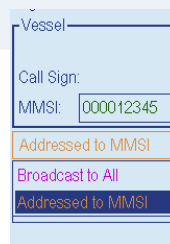
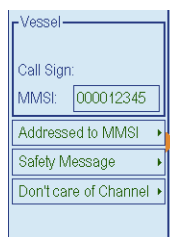
1. Open the [Main Menu] and select [Safety Message]
2. Open the Safety Message submenu (Touch the blue triangle)
3. Select [Create Message]



4. Insert a checkmark inside [Enable changes]



5. Spin the scroll wheel to select [Addressed to MMSI] or [Broadcast to All]



6. Write the MMSI ID of the ship if [Addressed to MMSI] is selected



7. Select message type; [Safety Message] for safety message, [Binary Message]



for routine message.

Call Sign:  
 MMSI: 000012345  
 Addressed to MMSI ▶  
 Safety Message ▶  
 Don't care of Channel ▶

Call Sign:  
 MMSI: 000012345  
 Addressed to MMSI ▶  
 Safety Message  
 Safety Message  
 Binary message

8. At the Channel box, select channel over which to broadcast your message. Four choices are available

Call Sign:  
 MMSI: 000012345  
 Addressed to MMSI ▶  
 Safety Message ▶  
 Don't care of Channel ▶

Call Sign:  
 MMSI: 000012345  
 Addressed to MMSI ▶  
 Safety Message ▶  
 Don't care of Channel  
 Don't care of Channel  
 Channel A  
 Channel B  
 Channels A and B

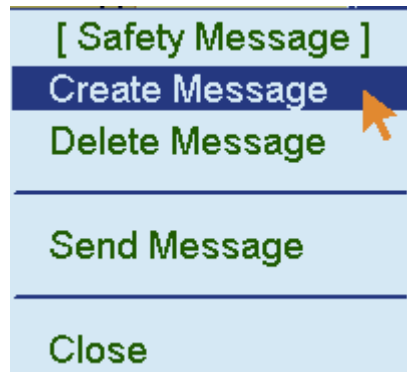
9. Enter the text of your message in the window below the Channel box.

Name  
 S20140503-092859 ▶

End edit  
☒ Enable changes



10. Open the Safety Message submenu and select [Send Message]



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## AIS Own Ship Info

Own ship information (voyage related data and ship related data) sent by the AIS transponder can be modified in ECDIS.

To view or modify own ship information, do following:

Open the [Main Menu] and select [AIS Ship Own Info]

The image shows three sequential screenshots of the 'AIS Own Ship Info' window, illustrating the steps to modify ship information. The window has two tabs: 'Voyage' and 'Own Ship'.

- Screenshot 1 (Voyage Data):** Shows the 'Voyage Data' tab. Fields include 'Navigational Status' (set to 'At anchor'), 'Persons' (21), 'MAX draught' (9.5 m), 'Destination' (empty), and 'ETA' (30 May 2012 01:00). An 'Enable changes' checkbox is at the bottom.
- Screenshot 2 (Navigational Status):** Shows the 'Voyage Data' tab with the 'Navigational Status' dropdown menu open. The menu lists options: 'At anchor', 'Under way (engine)', 'At anchor', 'NUC', 'Restric. manoeuv.', 'Constr. by draught', 'Moored', 'Aground', 'Engaged in fishing', 'Under way (sailing)', and 'Reserved for HSC'. An arrow points to 'Under way (engine)'.
- Screenshot 3 (Own Ship Static Data):** Shows the 'Own Ship' tab. Fields include 'Type' (0), 'Description' (Vessel and cargo type not available or no ship), 'MMSI' (217419595), 'Name' (BLUE HUNTER), 'Call Sign' (AUWJ), 'Length' (240 m), 'Width' (38 m), 'Ref Bow' (99 m), and 'Ref Port' (16 m).

You can insert the following information to be transmitted:

- Navigational Status (E.g. Under Way (engine))
- Persons on board
- Maximum draft
- Destination
- ETA

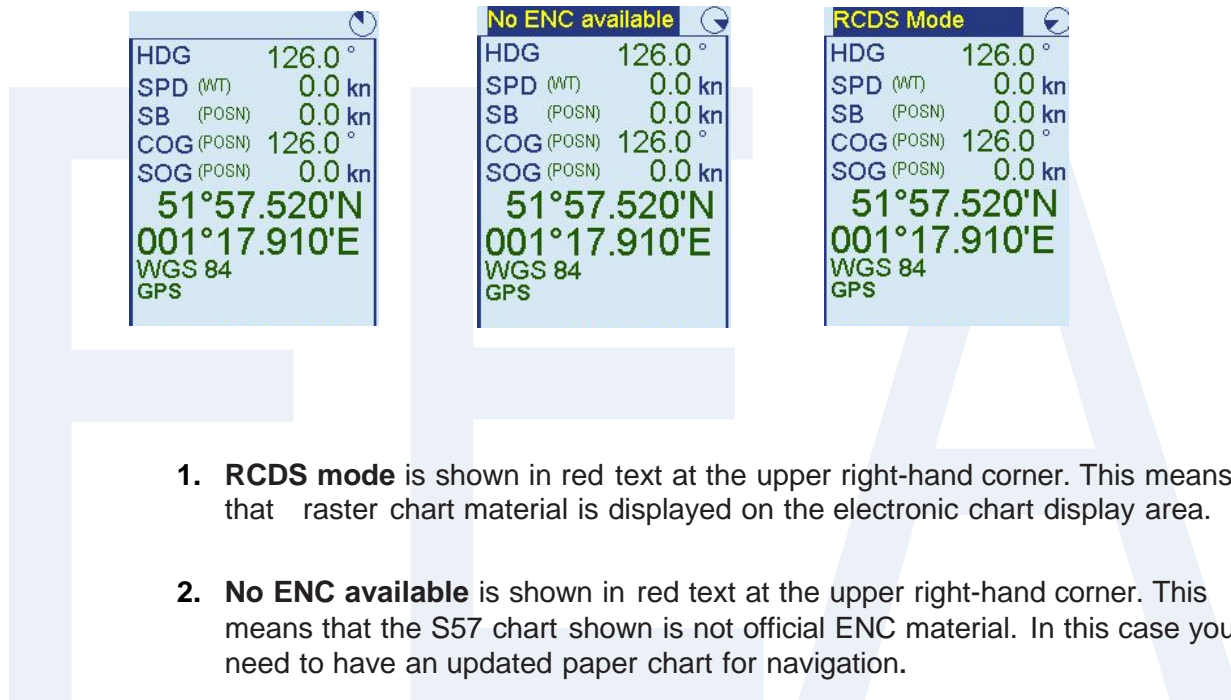


## Chapter 5: Chart Handling

### How to Detect ENC Coverage in Vector Chart Display

The electronic chart system can display more than one S57 chart cell at a time. This feature is called multi-cell display. If one S57 chart cell does not cover the whole display, the system opens more S57 chart cells for display, if appropriate cells for the displayed area are available. The status bar shows information about S57 chart cells displayed on the electronic chart display area. When automatic TM reset is active, the information is displayed with reference to your ship's position. If TM reset is OFF, the information is displayed with reference to current cursor position.

The possible indications are as follows:





## Chart Catalogue

The Catalogue is a graphical view of the charts stored in your hard disk, available in a named "CD-ROM" or available from an RENC. Available charts are displayed using their limits of charts. Sometimes the real coverage of a chart may be considerably less than its declared limits. To view information contained on a chart pick a location with the cursor.

To display the catalogue, do the following:

- Open the [Main Menu]
- Open the [Chart Menu]
- Open the [Chart Catalogue]

The screenshot displays the Chart Catalogue interface. On the left is a map of the North Atlantic region with various chart areas outlined. On the right is a control panel with the following elements:

- 1.** A status bar at the top right showing coordinates (59°47.625'N, 024°33.564'E), WGS 84, FILTER HIGH, and speed/heading information (HDG (MAN) 289.0°, SPD (MAN) 0.0kn, SB (MAN) 0.0kn, COG (MAN) 289.0°, SOG (MAN) 0.0kn).
- 2.** A 'Chart Catalogue' window with a 'Source of Chart Catalogue' section containing radio buttons for CD, RENC, SENC, and C-Map. Below this is a 'View filters' section with checkboxes for Name, Permit, RENC, Canceled, and Charts. To the right of this is a 'Navigation purpose' section with checkboxes for Overview, General, Coastal, Approach, Harbour, and Berthing.
- 3.** A 'Selected Chart' section with a 'Cell:' label and buttons for 'Cell Status' and 'Open'.
- 4.** An 'Edit Group' button.
- 5.** A bottom status bar showing the date and time (05.10.2004 07:21 LOCAL (UTC+01:00)), coordinates (+ 60°03.400'N, 024°58.372'E), distance (1.453 NM), and scale (1:100 000). It also includes 'Ship off screen' information (SINGLE, b5.01 b5.01) and buttons for 'Set Chart Center' and 'Activate Scroll'.



## 1. Source of Chart Catalogue

- **CD:** Display charts available in a named "CD-ROM".
- **RENC:** Display charts available from an RENC.
- **SENC:**
- Display charts stored in your hard disk in SENC format.

## 2. View Filters

- **Name:** Display also cell names in graphical coverage display.
- **Permit:** Display only charts for which you have permit.
- **RENC Cancelled Charts:** Display charts that are cancelled in an RENC.
- **Group:** Display charts that are member of selected group.
- **Navigation purpose:** Display charts for selected navigation purpose (overview, general, coastal, approach, harbour, berthing).

## 3. Selected chart

- **Cell:** Name of the chart
- **Cell Status:** Opens the Cell Status window
- **Open:** Opens up the selected chart

## 4. Edit Group (Displays a selected group of charts)

## 5. The **chart limit boxes** are color-coded as follows:

### Green

#### Light Green

The chart is available for use in SENC format. If the source of the chart is an RENC then the chart is also up-to-date. If the source of the chart is something other than an RENC, then all loaded updates are included into the SENC.

#### Dark Green

The chart is available for use in SENC format. If the source of the chart is a RENC then the chart up-to-date information is more than 30 days old

### Orange

The chart is available for use in SENC format but the chart is either not up-to-date or has been cancelled. Either the SENC is from a former edition, the SENC is missing the latest updates or the chart has been cancelled.

### Red

If the chart is permit free, you do not have it available for use in SENC format and thus you cannot use the chart currently.

The chart requires a permit but you do not have the permit for the chart therefore you cannot use the chart currently.

### Blue

The chart is available either in ENC format, in SENC format for another software version or in SENC format for another ECDIS. For example, the chart is blue during SENC conversion and when you loaded a chart into the ECDIS and the system could not convert the chart into SENC format.

### Magenta

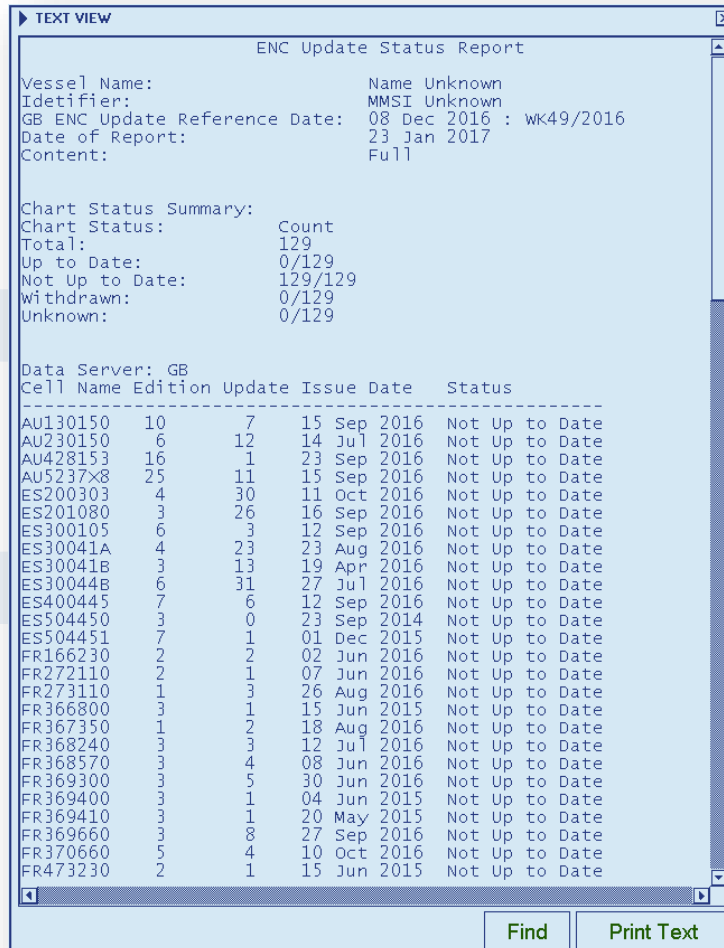
You have a permit to use the chart, but there is neither ENC nor SENC available on ECDIS, thereby you can't use the chart currently



## How to view chart update status

In case you want to view the update status of your chart, there are several options: the [Chart Legend] gives e.g. both the edition and update number.

The [ENC Update Status Report] feature gives you an overview of the status of your installed charts (Edition, update number and withdrawn status)



The screenshot shows a 'TEXT VIEW' window titled 'ENC Update Status Report'. It displays vessel information, chart status summary, and a detailed table of installed charts.

**Vessel Information:**

- Vessel Name: Name Unknown
- Identifier: MMSI Unknown
- GB ENC Update Reference Date: 08 Dec 2016 : WK49/2016
- Date of Report: 23 Jan 2017
- Content: Full

**Chart Status Summary:**

Chart Status:	Count
Total:	129
Up to Date:	0/129
Not Up to Date:	129/129
Withdrawn:	0/129
Unknown:	0/129

**Data Server: GB**

Cell	Name	Edition	Update	Issue Date	Status
AU130150	10	7	15	Sep 2016	Not Up to Date
AU230150	6	12	14	Jul 2016	Not Up to Date
AU428153	16	1	23	Sep 2016	Not Up to Date
AU5237X8	25	11	15	Sep 2016	Not Up to Date
ES200303	4	30	11	Oct 2016	Not Up to Date
ES201080	3	26	16	Sep 2016	Not Up to Date
ES300105	6	3	12	Sep 2016	Not Up to Date
ES30041A	4	23	23	Aug 2016	Not Up to Date
ES30041B	3	13	19	Apr 2016	Not Up to Date
ES30044B	6	31	27	Jul 2016	Not Up to Date
ES400445	7	6	12	Sep 2016	Not Up to Date
ES504450	3	0	23	Sep 2014	Not Up to Date
ES504451	7	1	01	Dec 2015	Not Up to Date
FR166230	2	2	02	Jun 2016	Not Up to Date
FR272110	2	1	07	Jun 2016	Not Up to Date
FR273110	1	3	26	Aug 2016	Not Up to Date
FR366800	3	1	15	Jun 2015	Not Up to Date
FR367350	1	2	18	Aug 2016	Not Up to Date
FR368240	3	3	12	Jul 2016	Not Up to Date
FR368570	3	4	08	Jun 2016	Not Up to Date
FR369300	3	5	30	Jun 2016	Not Up to Date
FR369400	3	1	04	Jun 2015	Not Up to Date
FR369410	3	1	20	May 2015	Not Up to Date
FR369660	3	8	27	Sep 2016	Not Up to Date
FR370660	5	4	10	Oct 2016	Not Up to Date
FR473230	2	1	15	Jun 2015	Not Up to Date

Buttons: Find, Print Text



## How to view chart update status filtered by your Route Plan

The [Route Filtered ENC Management Report] feature gives you an overview of the status of the charts used for the [Route Plan] presently selected (Edition, update number and withdrawn status)

TEXT VIEW

Route Filtered ENC Management Report

Vessel Name: Name Unknown

Identifier: MMSI Unknown

GB ENC Update Reference Date: 19 Jan 2017 : WK03/2017

Date of Report: 03 Feb 2017

Content: Filtered for Route Plan "FELIXSTOWE TO DOVER"

Start WPT: 1 [51°57.199'N,001°18.096'E]

End WPT: 18 [51°07.493'N,001°20.715'E]

Chart Status Summary:

Chart Status: Count

Total: 15

Up to Date: 8/15

Not Up to Date: 7/15

Withdrawn: 0/15

Unknown: 0/15

Data Server: GB

Cell Name	Edition	Update	Issue Date	Expiry Date	Status	Action
GB100160	13	0	16 Sep 2016	30 Sep 2017	Not Up to Date	To be updated
GB1B20M4	-	-	----NVLD---	----NVLD---	Not Up to Date	To be ordered
GB202675	7	4	21 Oct 2016	30 Sep 2017	Up to Date	No action
GB2A2182	10	4	19 Aug 2016	30 Sep 2017	Not Up to Date	To be updated
GB301183	5	1	20 May 2016	30 Sep 2017	Up to Date	No action
GB301610	4	1	13 Jan 2017	30 Sep 2017	Up to Date	No action
GB301975	13	0	23 Sep 2016	30 Sep 2017	Not Up to Date	To be updated
GB302052	11	3	26 Aug 2016	30 Sep 2017	Up to Date	No action
GB400323	4	4	23 Mar 2016	30 Sep 2017	Not Up to Date	To be updated
GB401828	5	2	23 Sep 2016	30 Sep 2017	Not Up to Date	To be updated
GB40302A	32	0	17 Jun 2016	30 Sep 2017	Up to Date	No action
GB40302B	13	3	09 Sep 2016	30 Sep 2017	Up to Date	No action
GB50282B	18	2	13 Jan 2017	30 Sep 2017	Up to Date	No action
GB50302B	15	1	23 Mar 2016	30 Sep 2017	Up to Date	No action
NO1A3000	-	-	----NVLD---	----NVLD---	Not Up to Date	To be ordered

AIO layer Update Reference Date: 17 Nov 2016 : WK46/2016

AIO layer status: Not Up to Date

AIO layer action: To be updated

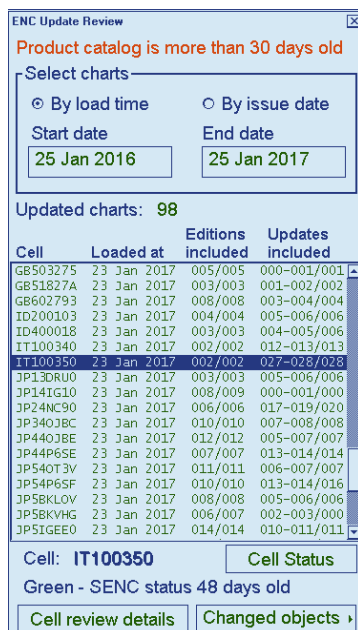
Find

Print Text



## How to view individual chart updates

[Update Review] allows the operator to see individual chart corrections in text form and allows the operator to “jump” the location where the actual chart correction have been inserted



ENC Update Review

Product catalog is more than 30 days old

Select charts

☒ By load time ☐ By issue date

Start date: 25 Jan 2016 End date: 25 Jan 2017

Updated charts: 98

Cell	Loaded at	Editions included	Updates included
GB503275	23 Jan 2017	005/005	000-001/001
GB51827A	23 Jan 2017	003/003	001-002/002
GB602793	23 Jan 2017	008/008	003-004/004
ID200103	23 Jan 2017	004/004	005-006/006
ID400018	23 Jan 2017	003/003	004-005/006
IT100340	23 Jan 2017	002/002	012-013/013
IT100350	23 Jan 2017	002/002	027-028/028
JP13DRU0	23 Jan 2017	003/003	005-006/006
JP141G10	23 Jan 2017	008/009	000-001/000
JP24NC90	23 Jan 2017	006/006	017-019/020
JP340JBC	23 Jan 2017	010/010	007-008/008
JP440JBE	23 Jan 2017	012/012	005-007/007
JP44P6SE	23 Jan 2017	007/007	013-014/014
JP540T3V	23 Jan 2017	011/011	006-007/007
JP54P6SF	23 Jan 2017	010/010	013-014/016
JP58KLOV	23 Jan 2017	008/008	005-006/006
JP58KVK6	23 Jan 2017	006/007	002-003/000
JP51GEE0	23 Jan 2017	014/014	010-011/011

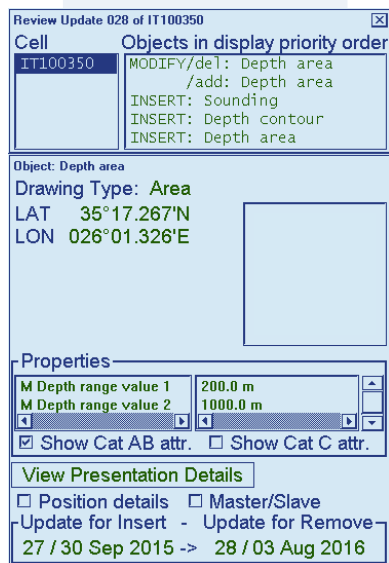
Cell: IT100350 Cell Status

Green - SENC status 48 days old

Cell review details Changed objects

When setting the dates e.g. January 25<sup>th</sup> 2016 and January 25<sup>th</sup> 2017, the operator can see all

chart corrections that have been installed as listed (Edition and update)



Review Update 028 of IT100350

Cell: IT100350 Objects in display priority order

MODIFY/del: Depth area  
 /add: Depth area  
 INSERT: Sounding  
 INSERT: Depth contour  
 INSERT: Depth area

Object: Depth area

Drawing Type: Area

LAT 35°17.267'N  
 LON 026°01.326'E

Properties

M Depth range value 1: 200.0 m  
 M Depth range value 2: 1000.0 m

☒ Show Cat AB attr. ☐ Show Cat C attr.

View Presentation Details

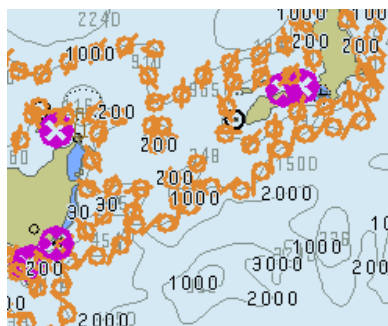
☐ Position details ☐ Master/Slave

Update for Insert - Update for Remove

27 / 30 Sep 2015 -> 28 / 03 Aug 2016

When selecting a specific chart cell and clicking on the [Cell review details] button, it is possible to see further details on a specific chart cell and specific chart corrections.

In [Objects in display priority order], the operator can view each chart correction and jump to the location where the actual chart correction have been inserted





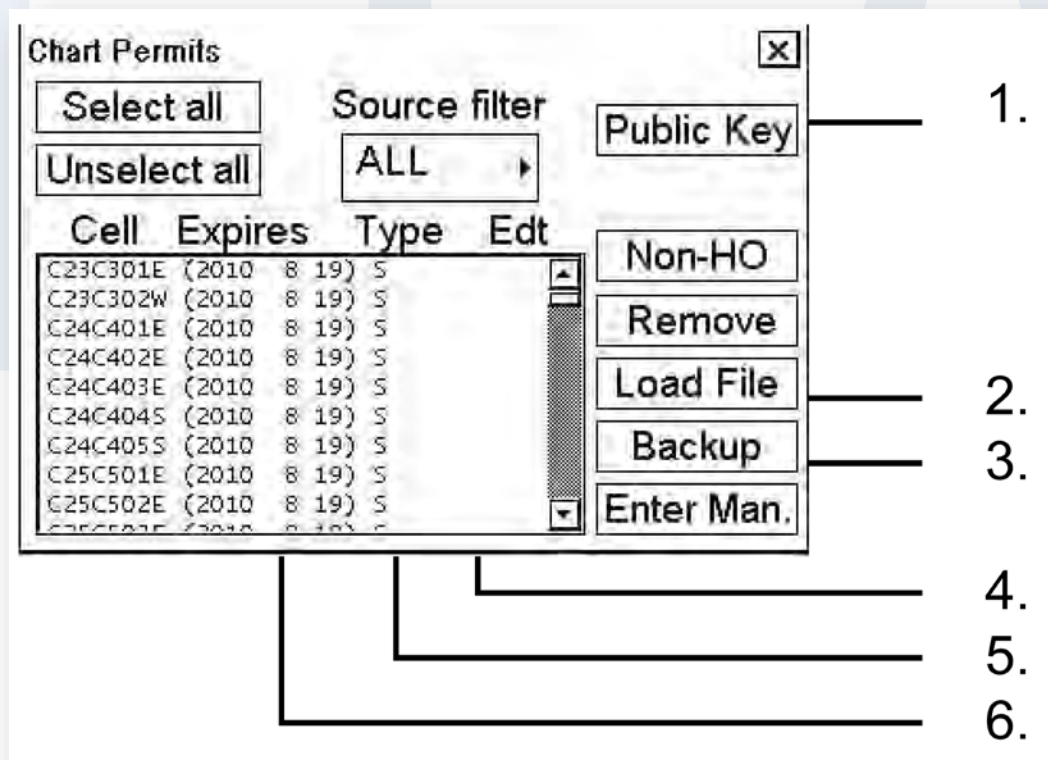
## Permit Status

Permits are used to control the right to use a chart in the ECDIS. A permit is connected to the edition of a chart. Permits are issued in two different types:

- **Subscription permit:** This type of permit includes updates for subsequent 12 months.
- **One-Off permit:** This type of permit includes only updates up to the issue date of the permit.

The expiry date of a permit controls the loading of Base charts and their updates on the ECDIS. The system will warn you when you are loading charts or updates that are issued less than 30 days before the expiration date of a permit. If a permit has expired, it is impossible to load a chart or its update that was issued after the expiration date of the permit. The user has a right to view a chart forever, but since the chart cannot be updated it will not fulfil the requirements for having up-to-date charts. To view the permit status of a chart, click the [License] button on the Instant Access Bar and then click the applicable "chart" tab, either ENC, ARCS, C-MAP or C-MAP DL. The example below shows the status of ENC charts. The example below shows the status of ENC charts.

From the Operator's Manual:





## Description of the Chart Permits dialog

1. **Public Key** lets you view a public key or load a new one.
2. **Load File** enables downloading from an RENC when you receive permits from that RENC.
3. **Backup** makes a back-up copy of permits.
4. The **Edt.** (Edition) field displays edition number of a chart to which the permit is valid. Note that when a new edition of a chart is issued a new permit is required. It is possible to have permits for different editions of the same chart.
5. The **Type** column shows type of permit held for a chart: S, Subscription or O, One-off.
6. The **Expires** column shows the expiration date of permits. All subscription-type permits will expire on the same date.

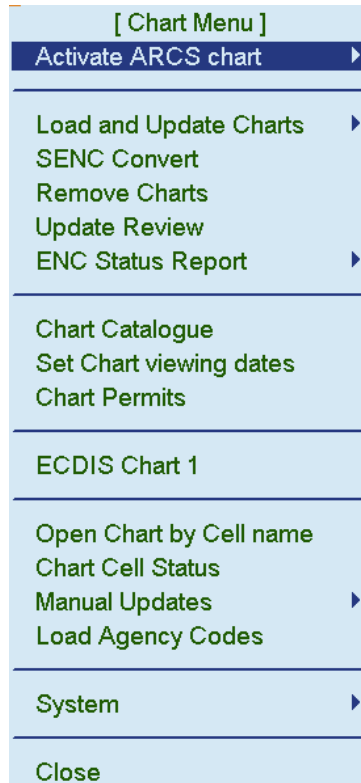
FEA



## How to Install Charts from a CD-ROM, Other Media

When you load charts from a CD ROM, the system first loads a catalogue, which stores certain information into your hard disk such as cell IDs, their position, and edition number, from the install media. Then, the system asks which charts you want to load from the chosen media.

1. Insert the media.
2. Get into the [Chart Menu] and then click the [Load and Update charts]

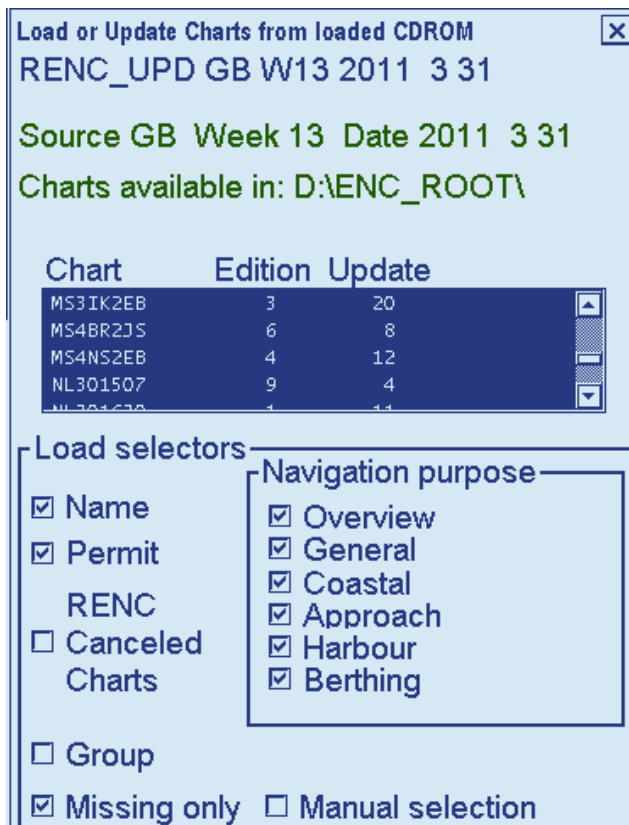




3. Select [From CD-ROM]



4. Make your selection in [Load Selectors]



5. And click on the [Load] button



## T&P NMs in the FURUNO ECDIS

### General

For documentation purposes the Notice to Mariners and T&Ps can be downloaded from the British Admiralty's web page ([www.ukho.gov.uk/nmwebsearch/](http://www.ukho.gov.uk/nmwebsearch/)). The service, which includes a guide, is free of charge.

### ENC charts

In an ENC the T&Ps are called ENC Preliminary NMs (EP NMs) and Seasonal date start and Seasonal date end. The information is included on the Update CD published every week.

But the navigator has no list of notices which can be easily read or used for documentation.

To activate the T&Ps according to their Date Start and End, the navigator must open the "chart viewing dates" in chart menu and set the "Display until" to cover the start date of the T&Ps.

### Admiralty Information Overlay

The navigator can use the Admiralty Information Overlay (AIO). This can be downloaded for free at ([FTP://ukho.gov.uk](ftp://ukho.gov.uk)) or can be delivered to you by your chart agent.

The AIO contains all the Admiralty Temporary & Preliminary Notices to Mariners in force world-wide, the service is provided on a weekly basis either by CD or by down-load.

Each T or P is displayed as a red polygon, from which the navigator can obtain further information. The information contains both text and diagram. All information can be printed - if a printer is attached to the ECDIS.

### RNC charts

The navigator can read the T&Ps and any Warnings in the chart legend. The chart legend can be opened by right clicking in Route Information Box then Chart Legend.

If the navigator wants to be able to view the T&P on the chart before they become active, then a Manual Update must be created.



## Current status of T&P NMs in ENC's

### ADMIRALTY Maritime Products & Services








## Current status of T&P NMs in ENC's

30th November 2016

Not all ENC producers include Temporary and Preliminary (T&P) Notices to Mariners (NMs) in their ENC's. The following table lists the confirmed status of T&P NMs in the ENC's that are available in AVCS and the ADMIRALTY ECDIS Service.

To ensure that T&P NM information is as widely available as possible, worldwide ADMIRALTY T&P NMs are also available through the ADMIRALTY Information Overlay (AIO) and the ADMIRALTY Digital Catalogue.

✓	indicates that T or P NMs are included in the ENC by the ENC producer.
✗	indicates that T or P NMs are <u>not</u> included in the ENC by the ENC producer.
N/A	indicates that the ENC producer does not issue Temporary (T) or Preliminary (P) NMs for either paper or digital charts.
NOT KNOWN	indicates that the status of T&P NMs in the ENC's is currently not known.

Producer Country	Producer Code	NMs Included in ENC's		Link to National NMs
		Temporary (T)	Preliminary (P)	
Argentina	AR	✓	✓	
Australia	AU	✓	✓	
Bahrain	BH	N/A	N/A	
Belgium	BE	✓ <sup>1</sup>	✓ <sup>1</sup>	
Brazil	BR	✓ <sup>1</sup>	✓ <sup>1</sup>	
Canada	CA	N/A	N/A	
Chile	CL	✓	✓	
China (People's Republic)	C1	✗	✗	
China (People's Republic) - Hong Kong and Pearl River Delta	C2	✓	N/A	
Colombia	CO	✗	✗	
Croatia	HR	✓	✓	
Cuba	CU	✗	✗	
Denmark	DK	✗	✗	
East Asia Hydrographic Commission	EA	✗	✗	
Ecuador	EC	NOT KNOWN	NOT KNOWN	
Egypt	EG	NOT KNOWN	NOT KNOWN	
Estonia	EE	✓	✓	
Finland	FI	✓	✓	

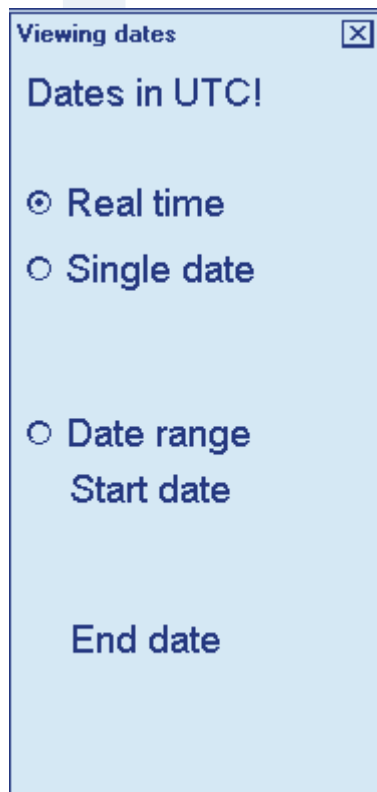


## Chart Viewing Dates and Seasonal Features of the S57 Chart

### Introduction

ENCs contain date-dependent features. Updating in general (including reissues, new editions and updates) creates date dependency. In addition to the obvious date dependency, some features of the S57 charts create additional date dependency. These features include "Date Start", "Date End", "Seasonal date start" and "Seasonal date end". Hydrographic Offices use these features to publish Temporary and Preliminary Notices to Mariners (as their paper chart equivalent updates are called). "Seasonal date start" and "Seasonal date end" are used for seasonal chart features such as summer-only sea marks, seasonal yacht race areas, etc.

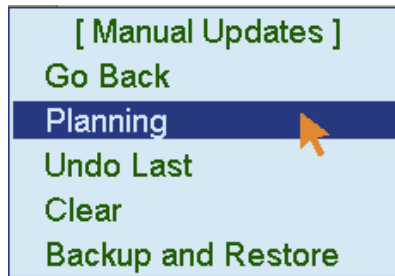
You can efficiently use Chart Viewing date by using the valid data for any given date applicable for your navigation or planning purposes. For example, you can check for the existence of changes and restrictions weeks before they become valid.





## How to create a [Manual Update]

When you want to create a new [Manual Update], you start creating by opening [Chart Menu] and then selecting [Manual Updates]

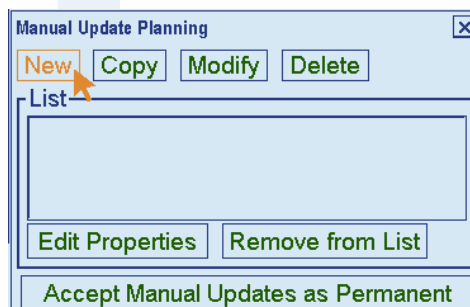


**Planning:** Operate with new manual updates.

**Undo Last:** Remove last manual update planning session.

**Clear:** Remove all manual updates in a single operation.

**Backup and Restore:** Make a backup or recall already recorded backup.



**New** creates an object from scratch.

**Copy** creates an object using an existing object.

**Modify** changes an existing object.

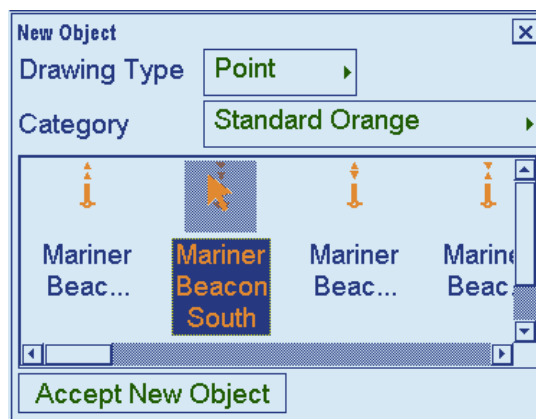
**Delete** removes an existing object.

**Edit Properties:** You can edit properties of a chart object by using this button.

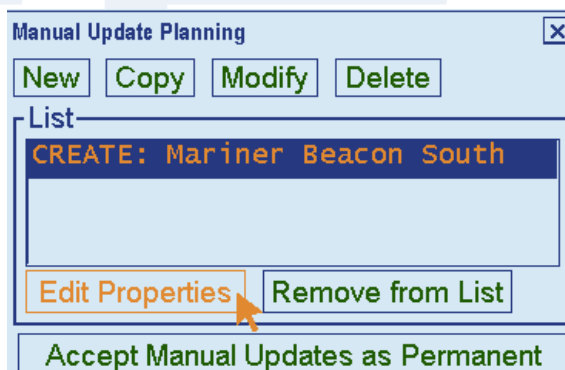
**Remove from List:** If you made a manual update by mistake, you can remove it if you haven't accepted it yet as permanent. You can remove it by choosing (highlighting) that chart object in the List then clicking this button.



Click on [New] to create a new manual update

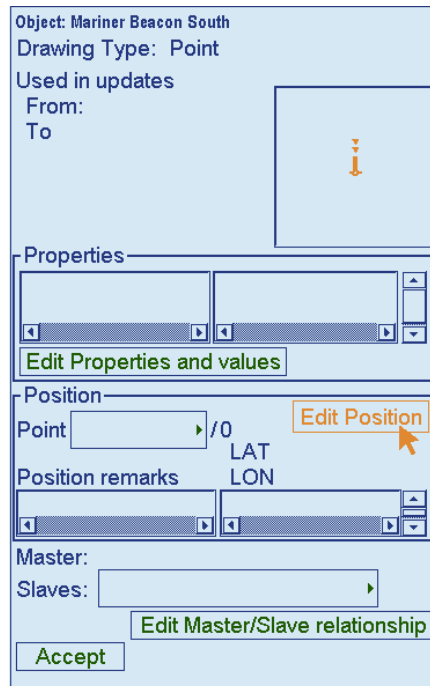


Select the relevant object and click the [Accept New Object] button





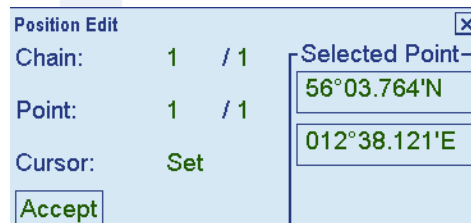
To edit the position, click the [Edit Properties]



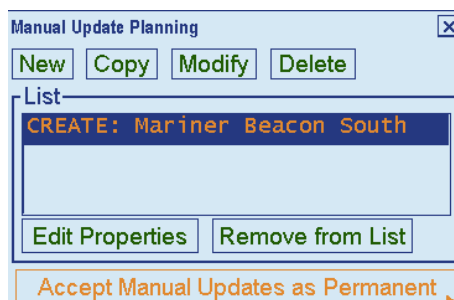
Locate the cursor the position where you want to insert the manual update

If the position is not accurate enough, the selected point can be edited with the control unit

Once the position is correct, please click the Accept button



To end the operation, please click the Accept Manual Updates as Permanent



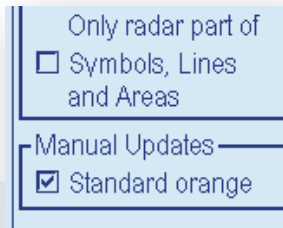


## How to display Manual Updates

Manual Updates can be shown as IMO True or as Standard Orange. The IMO True can be difficult to identify from your regular updates received on CD/DVD/USB.

The Manual Updates can also be shown as Standard Orange, making it very easy to identify the Manual Update as "Homemade".

Standard Orange Manual Updates can be selected/unselected for display on the charts by ticking or unticking the setting inside Symbol Display, on the Mariner page



## Admiralty Information Overlay (AIO)

The Admiralty Information Overlay includes all Admiralty Temporary and Preliminary Notices to Mariners (T&P NMs) and provides additional navigationally significant information from UKHO's ENC validation programme. The Overlay is displayed as a single layer on top of the basic ENC and is available free of charge as part of the Admiralty S57 Chart Service and within Admiralty Value Added Resellers' services.

The Overlay has been developed to ensure mariners can simply view the information they need - in addition to the standard chart - to navigate safely and compliantly. By clearly showing where important Temporary or Preliminary changes may impact a voyage, the Admiralty Information Overlay will give seafarers the same consistent picture of the maritime environment on their charts as they have always had.

## Installation

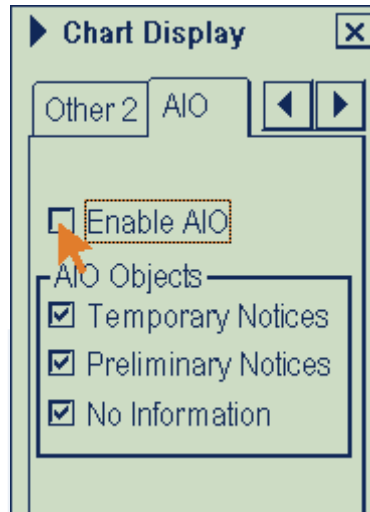
Installation is the same as that for the ENC chart.



### How to display the AIO

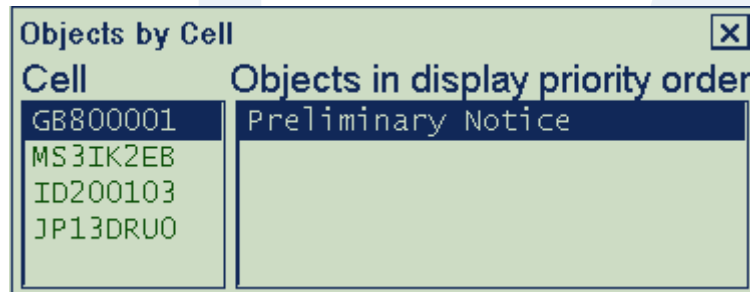
Click the [Main Menu] and then [Chart Display] buttons to open the [Chart Display]. Locate the [AIO] tab and insert a checkmark inside [Enable AIO].

The area(s) that contain temporary or preliminary changes are marked with a hatched red rectangle.



### How to read the AIO

Position the cursor inside a relevant AIO rectangle and click on the [INFO] (The scroll-wheel)



Click on the AIO cell (AIO has only one cell i.e. GB800001)

To read the contents of the Temporary or Preliminary message; scroll down inside the [Properties] to locate Textual or Pictorial description





## Chapter 6: Source of position

### Backup arrangement

The system will automatically change source of position if a sensor is lost. If the system changes the source of position because of lost sensor data or the differential mode is changed on a DPGS device, the system immediately generates the Alert 409 "Position source change".

If source of position includes a position sensor that is in datum mismatch condition, the latitude, longitude and chosen datum are displayed in red.

The Kalman filter uses all position sensors that have either primary or secondary as input for its calculation. DGPS and SYLEDIS position sensors are considered more accurate than other position sensors.

The latitude and longitude position is shown at the upper right corner on the ECDIS display, and in the example below the position source is DGPS. Other indications that may be displayed in the position area are as follows:

**NO POSIT:** Appears (in red) when no dead reckoning sensors are selected and valid.

**DEAD REC:** Shown (in red) when position source is dead reckoning.

**DGPS, GPS, LORAN, DECCA or SYLEDIS:** Name of position source.

**LOST DGPS:** Shown (in red) when the operator-selected DGPS device has lost the DGPS signal.

**FIL LOST DGPS:** Shown (in red) when the Kalman filter is in use and the operator-selected DGPS device has lost the DGPS signal.

**FILTER HIGH:** Shown when the position source is the Kalman filter with high-precision position sensor.

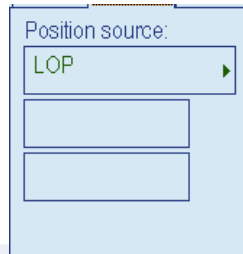
**FILTER:** Shown when position source is the Kalman filter without high-precision position sensor.



## Recording Own Ship position manually

A plotted line on which a vessel is located, determined by observation or measurement of the range or bearing to an aid to navigation or other charted element. Two or more simultaneous observations can be combined to produce an estimate of the ship's current position. If the position is based on only two observations, it is an "estimated position" (EP); otherwise it is called a fix.

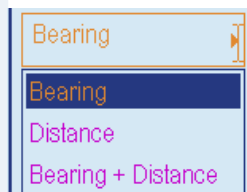
Line of Position (LOP) can be found in the Sensors dialog, Record tab as one of the Position Sources. A maximum of 6 observations can be entered to obtain a fix.



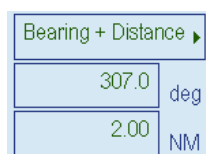
### Basic operation

Coordinates of the aid to navigation can be entered into dialog boxes or they can be selected graphically on the chart:

1. **S57:** Left click on a charted object (beacon, light, buoy etc.). Description of the object appears above coordinate boxes.
- ARCS:** Left Click anywhere in the chart.
2. Select type of observation



3. Default values for bearing and range are approximated from ship's current position information. The time of observation is stopped when the object is selected.



4. Click the **Add** button to include the observation in the fix computation. The counter shows "new/1", and a second observation may be entered. The word "new" indicates that the observation currently displayed is not yet included in the fix computation, and it appears as a dashed line or ring on the chart. The added observations can be edited or deleted after selecting them in the counter.



307.0	deg
2.00	NM
14:29:49	
Add	Delete

5. When at least two measurements are entered, the EP or fix is computed and the coordinates are shown in the top part of the dialog, and a position symbol appears on the chart. In the case of an EP, the letters "EP" are shown on the right side of the coordinates. If a valid position estimate cannot be obtained, a message is displayed under the coordinates. This may happen, for example, if the lines / circles have multiple crossings that are far apart, or if two lines are nearly parallel or don't intersect at all. The accuracy limit (estimated standard error) is 1.0 NM.

Position source:	
LOP	▶
56°04.406'N	EP
012°36.273'E	
Record	

6. If the estimate is valid, the **Record** button can be clicked to record the current position estimate in the voyage log. Discrepancy between LOP result and ship position is also recorded in the log. (This information may be viewed by Info query on the position event symbol on the chart – which is displayed if position event display is on in chart display settings.)  
 If dead reckoning is active, the **Use for DR** button is visible and clicking it will make the LOP position a new starting point for DR.

Position source:	
LOP	▶
56°04.406'N	EP
012°36.273'E	
Record	



### Time transfer

If the observations are not simultaneous, they should be transferred to a common time. Transferring is based on dead reckoning of ship movement. If a position line (or ring) is transferred, the letters TPL are shown beside its timestamp on the chart. The method of transfer may be selected in the bottom of the dialog.

"Transfer to latest" transfers the measurements as if they were all made at the time of the newest measurement.

"Continuous transfer" transfers all measurements to real time.

"Transfer off" can be used to check where the measurement origins are.

The position estimate and the record function follow the same logic, which means that "Transfer off" shows a position that has no relevance and "Transfer to latest" sends an old position to the voyage log (timestamp in the log does not match the position).

### Timeouts

The observations cannot be used long after they were made because dead reckoning is inaccurate.

One minute after the latest measurement it is labelled as a "DR" (dead reckoned position)

Computed position times out 5 minutes after the latest measurement.

An observation times out after 10 minutes, then it disappears without any notice to the user.



## Chapter 7: Alerts

### Alert messages

There are three categories of alert messages: alarm, warning, and caution. The colour of the alert and display format depends on the category of the alert as shown in the table below.

**Alarm:** Alarms are the most urgent alerts that require your immediate attention. The alert is red and flashes. The buzzer sounds until acknowledged.

**Warning:** Most alerts are in this category. The colour is yellow and they generate one short beep and flash until acknowledged. If a warning is not acknowledged within 60 seconds, then the short beep is repeated.

**Caution:** Indicate doubtful condition. The colour is yellow and the indication is displayed steadily. The caution alert does not generate the beep sound.





## Chapter 8: Navigation and planning tools

### Navigation Mark

Navigation marks consist of two sets of Reference Point, EBL, VRM, and four parallel index lines. Two sets of these marks are provided on the Nav. Marks dialog box, so that you can arrange each set according to a particular navigation operation. To display the Nav. Marks dialog box, spin the scroll-wheel to display Show Value/Info/NAV Marks in the mouse functions area then push the right mouse button.

**Note:** If you are using the Control Unit RCU-018, the EBLs and VRMs can also be turned on or off from the keyboard.

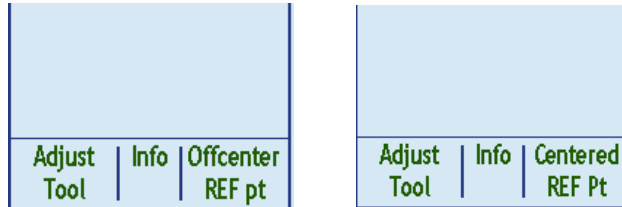




## How to offset the VRM and EBL

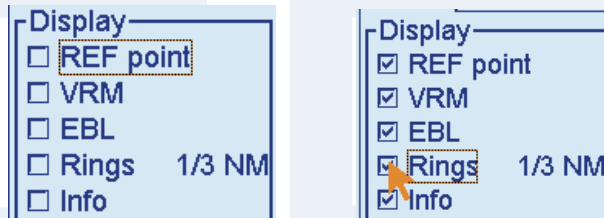
The EBL and VRM can be offset so that the operator can measure distances and bearings between various objects.

To offset the tools, locate your cursor on the desired position and click on the right trackball button.



(Every time you right on the trackball, the EBL and VRM jumps between own ship and the cursor position)

You can select how much information you want to use and to view on the chart.





## Route Planning

The main parameters for the route planning are:

- Latitude and longitude of the waypoint
- Channel limits to the waypoint
- Turning radius of the waypoint
- Maximum and minimum speed limits for a leg

There are two phases for a route: Route Plan and Route Monitor. Route plan is used for planning the route and route monitor is used to control a route for monitoring.

To complete route planning, do the following.

1. Create a new route or choose an existing one.
2. Modify your route if necessary.
3. Select which alerts to check for.
4. Use the automatic route check
5. Optimize your route.



## How to use the Waypoints page

The following fields and boxes can be found in the [Waypoints] page.

<p><b>WPT:</b> Each waypoint has a number.</p> <p><b>Name:</b> You can name each waypoint.</p> <p><b>Latitude:</b> WPTs latitude coordinate is displayed in selected datum.</p> <p><b>Longitude:</b> WPTs longitude coordinate is displayed in selected datum.</p> <p><b>Leg/°:</b> Bearing of leg</p> <p><b>Leg/NM:</b> Length of leg (nm).</p> <p><b>Str mode:</b> Define steering mode for each leg, rhumb line or great circle. Right-click to select [Rhumbline] or [Greatcircle].</p>	<p><b>RAD/NM:</b> Define turning radius for each waypoint. To change a radius, put the cursor in this column to show up and down arrows. Click the arrows to set the radius.</p> <p><b>Ch limit/m:</b> Define channel limit for each leg.</p> <p><b>Plan SPD:</b> Define minimum speed to use with a leg.</p> <p><b>SPD max:</b> Define maximum speed to use with a leg.</p> <p><b>Margin/m:</b> Define extension for channel to be checked against selected alerts.</p>
---	--

## Naming files on the FURUNO FEA 2X07 ECDIS

When you are creating a new file (new Route Plan, new User Chart, new Notes or new Display Settings) you must name the file.

During typing, the name will appear in magenta colour; this means that the text is not saved!

**DO NOT MOVE THE CURSOR FROM THE TEXT BOX AS THE NAME WILL DISAPPEAR!**

To save the name you must:

1. Left click on the trackball
2. Or click the [Return] button on the [On Screen Keyboard]
3. Or click the enter button if using an external keyboard

Once you have saved the name, the name colour will change to orange and now you can move the cursor to click the [Ok] button.



## How to Create a New Route

To make a complete route for a voyage, do the following:

1. Click the [PLAN] button on the Control unit to open the route planning tool.
2. Click on the [Create] button and write a name for the route plan.



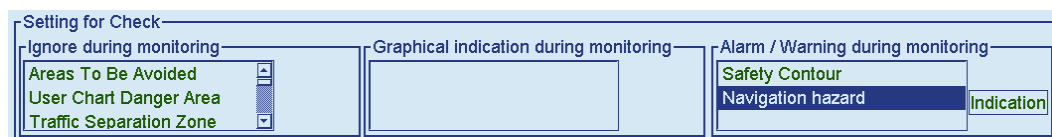
3. Insert a checkmark inside [Enable Changes]



4. Go to the [Alerts] page and define Safety Contour



5. Go to the [Alerts] page and select which Areas to be used for Alarm/Warning or Graphical Indication





6. Select the position for the waypoint on the chart area then push the left mouse button. After entering a waypoint, edit Name, Steering mode, Radius, Channel limit, Plan SPD, SPD Max and Margin as appropriate in the [Plan Route] dialog box. (Put the cursor on an item and spin the scroll wheel to change value.)
7. Repeat step 6 to enter other waypoints.
8. After entering the final waypoint go the [Check] page and push the [Start] button.
9. Modify the route plan where applicable, based on the alerts found on the [Check] page.
10. Use the [Exchange with Monitor] to move the route plan into monitor mode

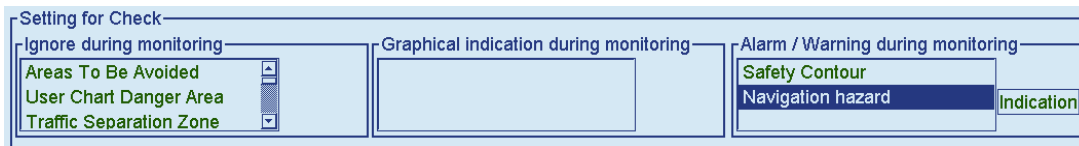




## Checking of Route / Alerts

### How to use the Alert parameters page

The [Alerts] page lets you define conditions along a route for which you want to be alerted, by visual or audible indication.



The screenshot shows the 'Alert parameters' interface. It is divided into three main sections:

- Setting for Check:** A dropdown menu with options: 'Areas To Be Avoided', 'User Chart Danger Area', and 'Traffic Separation Zone'.
- Graphical indication during monitoring:** An empty rectangular box for visual feedback.
- Alarm / Warning during monitoring:** A dropdown menu with options: 'Safety Contour' and 'Navigation hazard'. To the right of this menu is a button labeled 'Indication'.

1. Select which alerts to use inside [Ignore during monitoring]
2. Click on [Indication] or [Alarm / Warning]
3. If you have selected an area by mistake, click the area and the [Ignore] button.



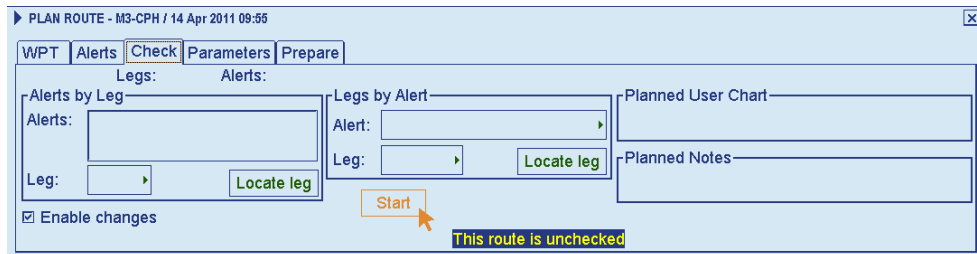
This close-up shows the 'Alarm / Warning during monitoring' dropdown menu with the following options: 'Safety Contour', 'Restricted Area', and 'Caution Area'. The 'Restricted Area' option is currently selected. To the right of the menu, there are two buttons: 'Ignore' (highlighted with an orange border and an arrow pointing to it) and 'Indication'.

**Note:** In order to check the route against charts with correctly updated situation for the voyage, always check the route against appropriate voyage date.

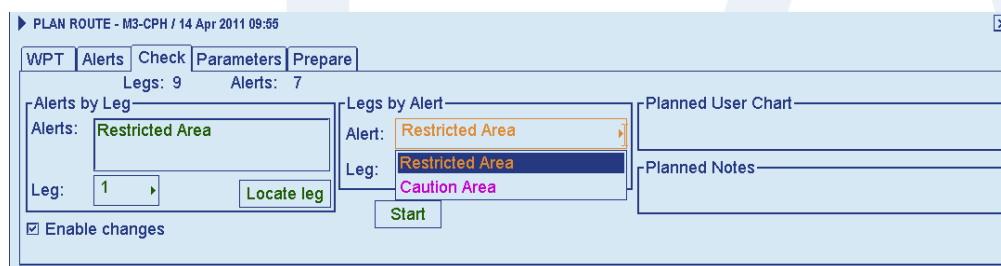
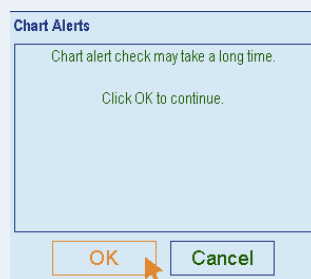


## How to use the Check page

The [Check] page allows you to make safe water calculation for your route. Click the [Start] button to do the check.

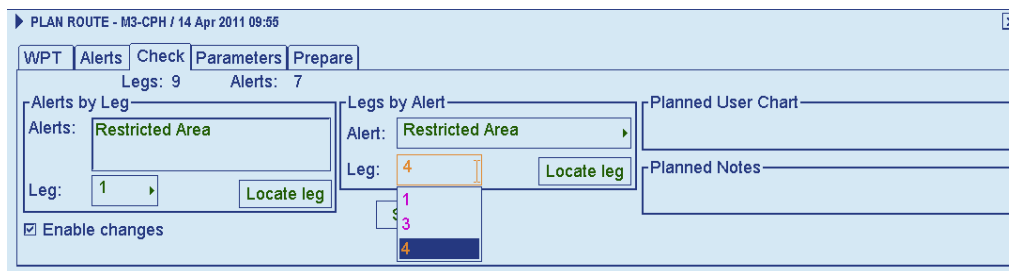


The automatic route check takes normally up to a couple of minutes

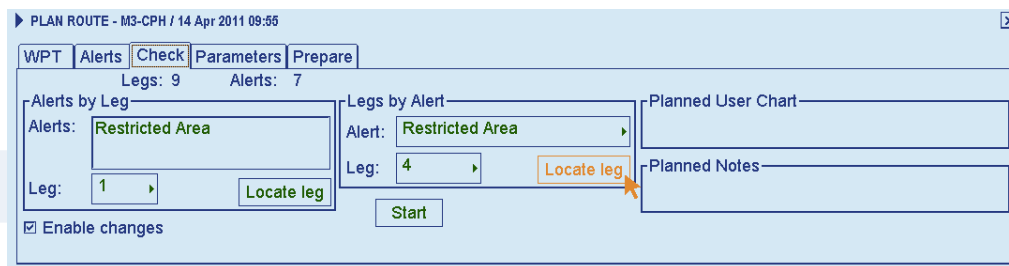


Once the [Check] is completed, it is possible to search for any active alerts found by the [Check] function.





To jump to a specific leg, select which [Leg] to go and push the [Locate Leg] button.





## User Charts

User charts are simple overlay charts that the operator makes for his own purposes. They can be displayed on both the radar display and the electronic chart. These charts are intended for highlighting safety-related items like position of important navigation marks, safe area for the ship, etc. User charts areas can be used to activate alerts and indications based on operator-defined danger symbols, lines and areas. When route or estimated ship's position is going to cross a user chart symbol, line or area that is defined as a dangerous one, an alert or indication is generated by the system.

# FEA



## Objects of user charts

Below is a short description of each of the objects used in a user chart.

<b>Point:</b>	A point is a geographical reference point used in a user chart so that it may be displayed on a FURUNO radar-
<b>Line:</b>	Lines can be used in chart alert calculation and/or displayed on the radar:
<i>Navigation lines:</i>	(Radar display and ECDIS). Navigation lines are reference lines for coast line.
<i>Coast line:</i>	(ECDIS only). Coastal lines are usually a well-defined multi segment line showing the coastline. The user is able to create this type of line in case there is no suitable chart available over desired area in RNC or ENC format.
<i>Depth contour:</i>	(ECDIS only). Depth lines show the chosen depth levels. The user is able to create this type of line in case there is no suitable chart available over desired area in RNC or ENC format.
<i>Route line:</i>	(Radar display and ECDIS). Route lines are zones for anchoring, traffic separation lines, etc.
<i>NMT &amp; NLT:</i>	"Not More Than"- and "Not Less Than"-lines. Clearing lines are used to define a line which a vessel can sail to avoid navigational hazards.
<b>Area:</b>	The operator can define closed areas, which the system can use to detect safe water areas. If route or estimated ship position is going to cross the area, the system generates a warning to the user. These areas can be used to specify safe areas as defined by the master or by the policy of the ship's owner. They are always available regardless of the type of chart material used.
<b>Symbol:</b>	Can be set up as either SYMBOL or LABEL. A symbol is mainly used to denote position of objects, such as buoys, light houses, fixed targets, wrecks, etc. Points can be used in chart alert calculation. A "label" allows user-entered text to be shown on the chart.
<b>Tidal:</b>	The Tidal page lets you inscribe tidal data on a user chart. There are two types of tidsals: Currents and Predicted.

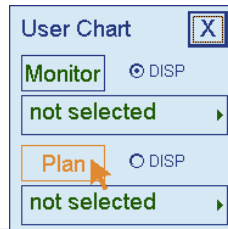


## How to Create a User Chart

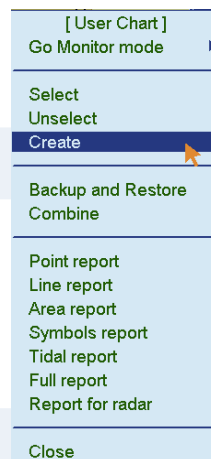
**Note:** If you want to display a user chart on the electronic chart, check [Points], [Lines], [Symbols, tidsals] and [Areas] on the [Mariner] page of the [Symbol Display] menu.

To make a complete user chart, do the following:

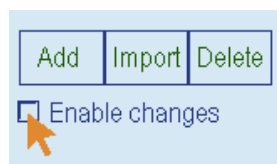
1. Click the [User Chart] button in the [Main Menu] or in the [Side Bar]
2. Click the [Planning] button in the [User Chart] dialog box.



3. Click the [Create] button on the [User Chart] dialog box to create a new chart.



4. Insert a checkmark inside the [Enable changes]



5. Select want kind of object you need to create (Point, Line, Area, Symbol or Tidal)
6. Put the cursor on the location to insert the object then press the left button.



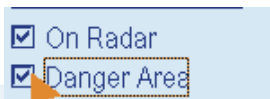
7. The [Add] button is only used to add [Area] in the same [User Chart]



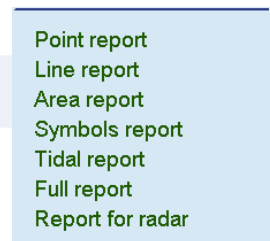
8. For dangerous objects, click the [Danger Line], [Danger Area] or [Danger Symbol].



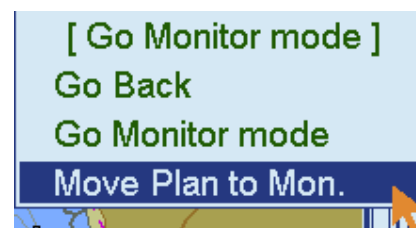
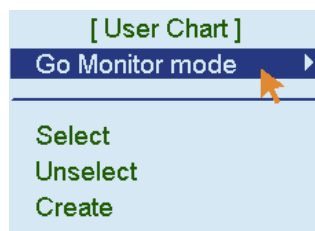
9. For objects to be shown on your FURUNO radar, click the [Display on Radar]



10. A hard copy can be printed from the [User Chart] dialog. Touch the blue triangle to open the dialog and select the relevant report; [Point Report], [Line Report], [Area Report], [Symbol Report], [Tidal Report], [Full Report] and [Report for Radar]



11. To move the User Chart into monitor mode, open the [User Chart] dialog and click [Go Monitor Mode] and [Move Plan to Mon.]





## Notes

Notes are simple overlay charts that the operator makes for his own purposes. They can be displayed on the electronic chart and be read on the radars sidebar

In the “old” days you would take a pencil and make a note in the paper chart so that you didn't forget to call e.g. the VTS. For vessels that are sailing without navigational paper charts it is not possible. The Notes are basically a message connected to an alarm clock so that you don't forget to call e.g. the VTS or the pilot station in due time.

Notes can e.g. be used to mark the following information on the chart:

1. Position where to call the pilot.
2. Position where to call the VTS or other reporting systems.
3. To complement orders written down in the night order book.
4. Advisements to the engine room e.g. changing over to light sulphur oil.
5. Advisements to the deck e.g. prepare the anchors.

## How to Create a Note

**Note:** *If you want to display a [Note] on the electronic chart, check [Position], [Range] and [Text] on the [Mariner] page of the [Symbol Display] menu.*

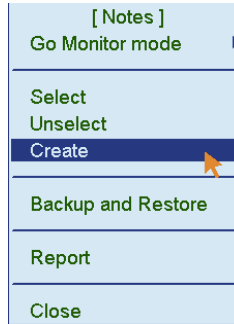
To make a complete [Note], do the following:

1. Click the [Note] button in the [Main Menu] or in the [Side Bar]
2. Click the [Planning] button in the [Note] dialog box.

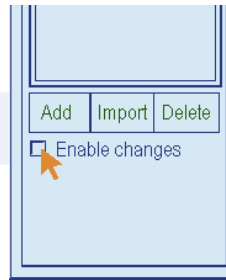




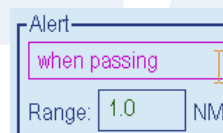
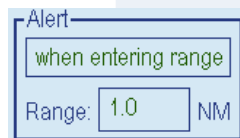
3. Click the [Create] button on the [Notes] dialog box to create a new chart.



4. Insert a checkmark inside the [Enable changes].



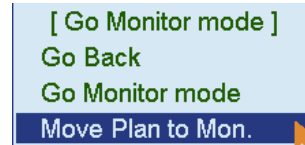
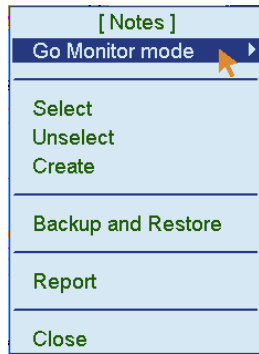
5. The function of the left mouse button is now Edit/Insert meaning inserting or editing the position of your Notes.
6. The alert is activated by the range ring. Once your vessel enters the range ring the alert is activated.
7. You can either use [when entering the range] Here you select the size of the range ring. The size of the range ring is from 0.1 NM to 100 NM. Or you can use [when passing] here the range ring is fixed at 10 NM.



8. Your message can be up to 110 characters long.
9. A hard copy can be printed from the [Notes] dialog. Touch the blue triangle to open the dialog and select [Report].



10. To move the Note into monitor mode, open the [Notes] dialog and click [Go Monitor Mode] and [Move Plan to Mon].



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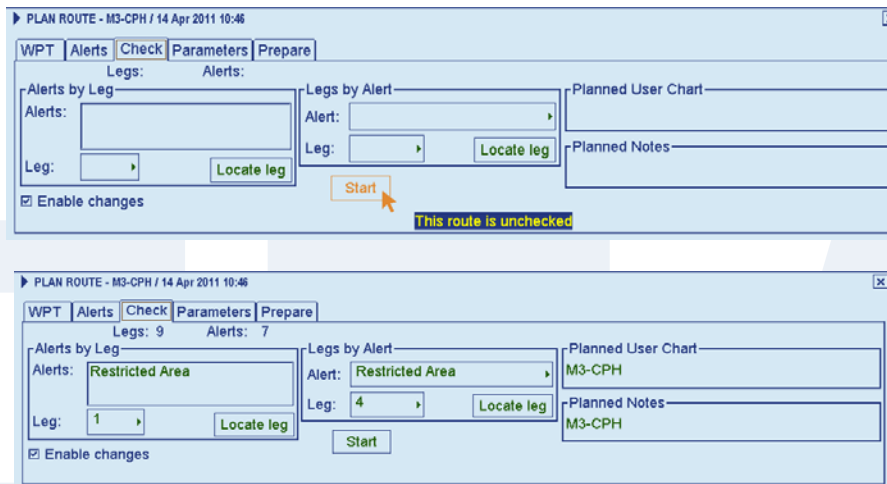


## Storing User Chart and Notes

User Charts and Notes can be linked into your Route Plan in a semi-automatic feature, this means that you easily read and identify which User Chart and Notes were planned together with the Route Plan.

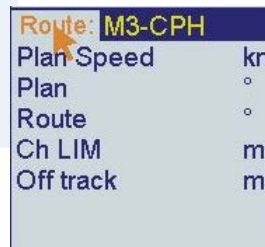
To use this feature, you must have the Route Plan, User Chart and the Notes in Plan mode.

Open the Route Plan on the [Check] page and click the [Start] button and your planned User Chart and Notes appears inside [Planned User Chart] and [Planned Notes].

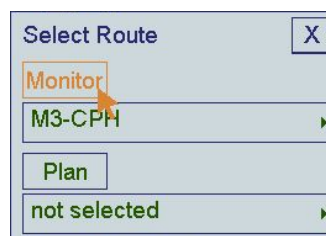


As the feature, only is semi-automatic, you must acknowledge the use of the correct User Chart and the Notes.

Click on the [Route] button inside the upper [Route Monitor] window.

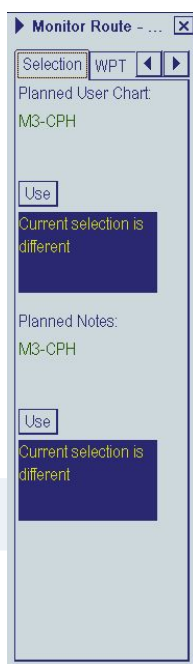


Click the [Monitor] button in the [Select Route] dialog.





Locate the [Selection] page and click the [Use] button if the correct [Planned User Chart] and [Planned Notes] are listed.





## Chapter 9: Documentation

The ECDIS records various items like movement and position of own ship and dangerous targets etc. The following logs are recorded:

- Voyage log:** Records entire voyage until it has been deleted or reset by the user. Contain automatic details such as: Position, COG, SOG, HDG, gyro correction, wind direction, wind speed, depth from echo-sounder, speed and heading changes based on your settings.
- Also contains manual details such as MOB, User Event and manually recorded position.
- Details log:** Records only data from the last 12 hours, but the data is recorded every minute.  
 Contain automatic details such as: Position, COG, SOG, HDG, chart alignment and gyro correction.
- Danger Target log:** Records targets when you have a dangerous target from radar or AIS.
- Chart Usage log:** Records which charts were displayed on the ECDIS display area.
- Alert log:** Records alerts generated by the system.



## How to record manual events or manual positions

### User Events

A user event records a comment about a specific event to the Voyage Log. User events can be shown on the chart area by activating User Events on the [Tracking] page of the [Symbol Display] menu.

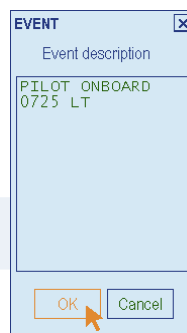
[Event] can be used to record normal ship operations e.g. Pilot on Board or if you observe something out of the ordinary, for instance, observation of drifting containers.

To record a User Event:

1. Click [Event] on the Control Unit or [Event] in the [Main Menu].



2. Enter a comment in the text box. Click the [OK] button to finish and close the text box. Once the [OK] button is clicked, position and time are saved.



3. The [Event] is recorded inside the [Voyage Log].
4. A Navigation Event symbol appears at own ship position.

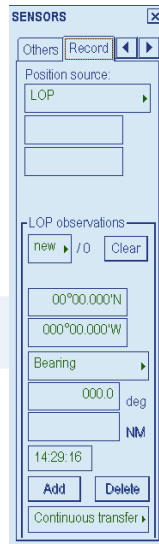


## Manual Position Recording

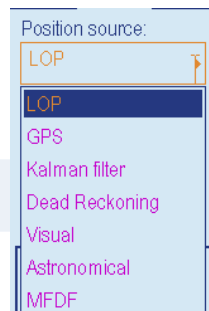
The operator can save positions to the Voyage Log manually.

To record a position from a position sensor, do the following:

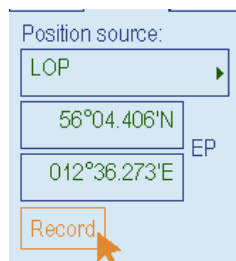
1. Press the [Sensor] button on the Control Unit and locate the [Record] page in the Sensors dialog.



2. Select type of observation (Position Source) from the drop down list (LOP, GPS, DGPS, KALMAN Filter or Dead Reckoning).



3. Click the [Record] button to save the position observation into the Voyage log.



4. The Visual observation is e.g. when passing a breakwater or a buoy. Left click near the breakwater or buoy that you are passing and click the [Record] button.



5. The Astronomical observation must come from your manual calculations (paper calculations).  
 Left click on the chart, adjust the position according to your calculations and click the [Record] button.

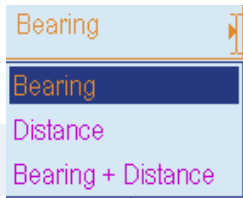
## LOP (Lines Of Position)

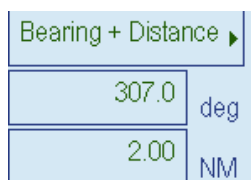
The LOPs (Lines Of Position) are observations or measurements of the range and/or bearing to a charted object and taken from your radar or compass.

Two simultaneous LOPs can be combined to produce an estimate of the ship's position.

When the position is based on only two observations, it is an Estimated Position (EP); if at least three observations are combined we can use them for a position fix.

Basic operation:

1. Select LOP as type of observation from the drop down list.
2. Select what kind of observation you have done on your radar or compass (bearing, distance or bearing and distance)  

3. ENC: Left click on a charted object (beacon, light, buoy etc.).  
 Description of the object appears above coordinate boxes.  
 RNC: Left click anywhere on the chart.
4. Default values for bearing and range are approximated from ship's current position.  
 This means that you must add or subtract 180° to the suggested bearing value.  
 The suggested Range must also be modified according to the range observation from your radar.



Bearing + Distance	
307.0	deg
2.00	NM



5. Click the [Add] button to include the observation in the fix computation.

307.0	deg
1.89	NM
14:29:49	
Add	Delete

6. Enter the next observation.  
 When two observations have been entered, the EP marker is shown.  
 If 3 or more observations have been entered, the Fix marker is shown.

Position source:	
LOP	▶
56°04.406'N	EP
012°36.273'E	
Record	

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## Logs

### Details Log

The [Details] log contains voyage information, recorded once per minute.

How to view the Details log:

To open the [Details Log] log, click the on [Record] button on the Control Unit or in the Main Menu and then click [Detail Log] button.

### Voyage Log

The [Voyage] log holds data for the entire voyage. Recorded events are:

- Changes of course and speed. This data is filed in the log as type "Ship".
- Automated recordings of ship's position every 1, 2, 3 or 4 hours. This data is filed in the log as type "Auto".
- Man Over Board event. This data is filed in the log as type "MOB".
- User event. This data is filed in the log as type "User".
- Alerts generated by the system. This data is filed in the log as type "Alert".
- Position events. This is filed in the log as type "PosD...".

Each log entry also contains wind speed and direction, depth information and distance counter value.

How to view the Voyage log:

To open the [Voyage Log] log, click the on [Record] button on the Control Unit or in the Main Menu and then click [Voyage Log] button.

### Danger Targets Log

If a Tracked Target (TT) or an AIS target violates the set CPA and TCPA, information of all TTs (including non-dangerous targets) is recorded into the Danger Target Log.

How to view the danger targets log:

To open the [Danger Target Log], click the on [Record] button on the Control Unit or in the Main Menu and then click [Danger Target Log] button.



## Chart Usage Log

The [Chart Usage] log stores which charts were displayed on the ECDIS display area or which were used for chart alerts. The following information is recorded in the chart usage log:

- Chart ID
- Chart edition
- The latest update included to chart
- Displayed Updates Until
- Approved Updates Until
- Center position of display (Latitude and Longitude)
- Scale of chart display
- Details of chart chosen for display

How to view the Chart Usage Log:

To open the [Chart Usage Log], click the on [Record] button on the Control Unit or in the Main Menu and then click [Chart Usage Log] button.

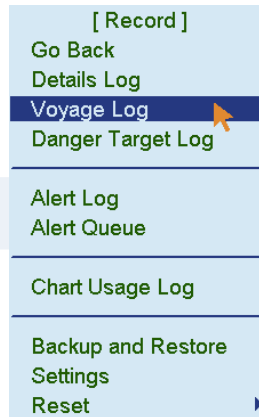


## How to save log information as a User Chart

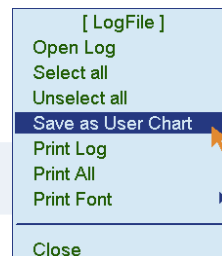
In the case where a Port State Officer or a vetting inspector wants you to document the vessel's previous voyage, then you have the option to create a User Chart from a log file. The user chart can be displayed on any charts in the ECDIS.

You can use the [Details Log], [Voyage Log] or [Danger Target Log] for the Create User Chart] function.

1. Open the relevant log file [Details Log], [Voyage Log] or [Danger Target Log].



2. Touch the blue triangle and click the [Select All] in the [Record] dialog.
3. Go back into the [Record] dialog and click [Save as a User Chart].



4. To show the [User Chart] on the ENC or RNC chart, click the [Plan] button in [User Chart] and locate your [User Chart].

The [User Chart] is shown visually with small orange dots.

To view the [User Chart], remember to zoom in on the correct position as the dots are small.



In case the user chart cannot be seen on the chart, please open the [Mariner] page in the [Symbol Display] dialog.

Ensure that the [User Chart] options are all checked.

Notes	
<input checked="" type="checkbox"/>	Position
<input checked="" type="checkbox"/>	Range
<input checked="" type="checkbox"/>	Text
User chart	
<input checked="" type="checkbox"/>	Points
<input checked="" type="checkbox"/>	Lines
<input checked="" type="checkbox"/>	Symbols, Tidsals
<input checked="" type="checkbox"/>	Areas

FEA

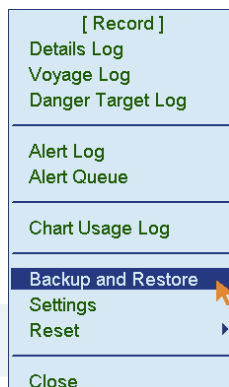


## Backup and file handling

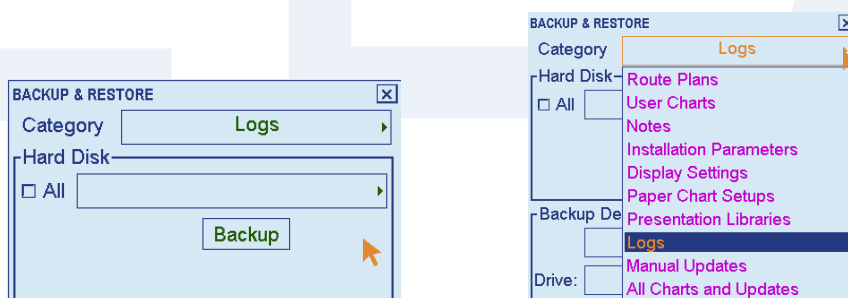
All file handling takes place in the [Backup and Restore] dialog located inside the [Route], [User Chart], [Notes], [Record], [Chart Display] and [Symbol Display] dialogs

Here you can copy, rename, delete and take backup of your files.

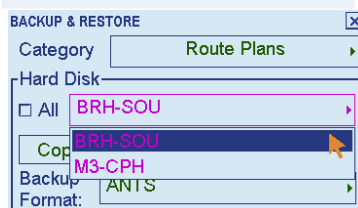
1. Open the [Backup and Restore] dialog



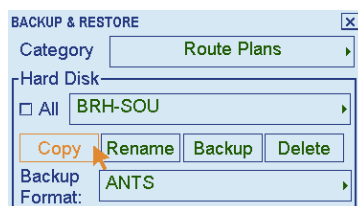
2. As the files have different formats, you must select what kind of file you want to work with; this is done in [category].



3. Locate the file you want to work with.

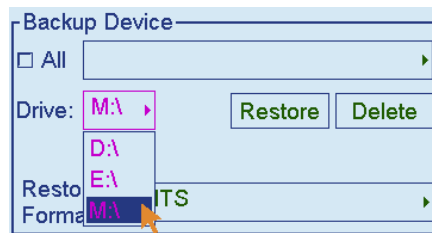


4. Now you can [Copy], [Rename], [Backup] or [Delete] the file. A file in [Plan] or [Monitor] mode cannot be Renamed or Deleted because it is in use (Use the [Unselect] button to make the file inactive).



5. When using the [Backup] or [Restore], remember to select drive in [Backup Device]





[Backup] means transferring a file from the hard disc to a USB memory device.

[Restore] means transferring a file from a USB memory device to the hard disc drive.

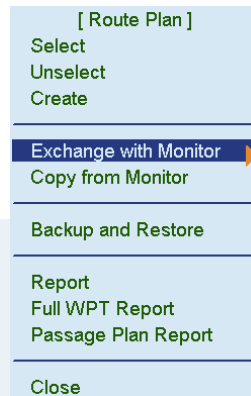
FEA



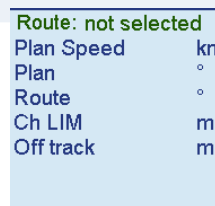
## Chapter 10: Route monitoring

### How to monitor a planned route.

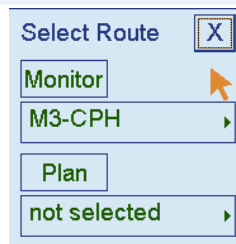
1. Remember to use the automatic [Check] function before going into monitor mode.
2. Remember to print all a hard copy for documentary purpose if necessary.
3. When your [Route Plan] is finished, please touch the blue triangle and click [Exchange with Monitor].



4. If the [Route Plan] is not already selected, please click the [Route] button in the Sidebar.



5. Click the [Monitor] dropdown menu and select your [Route]-





## How to View Waypoint Information when monitoring a route

### Route information box

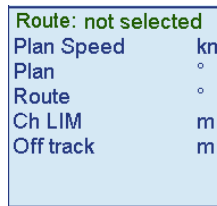
<b>Route:</b>	Name of monitored route.
<b>Plan Speed:</b>	Planned speed to approach "To WPT".
<b>Plan:</b>	Planned course between previous WPT and "To WPT".
<b>Route:</b>	Calculated set course to follow the monitored route, including off track, drift and gyro error compensation.
<b>CH Lim:</b>	Planned width of channel to approach "To WPT".
<b>Off Track:</b>	Perpendicular distance the ship is from the intended track.
<b>To WPT:</b>	The waypoint that the ship is approaching.
<b>Dist WOP (Wheel Over Point):</b>	Distance to the point where rudder order for course change at "To WPT" is given.
<b>Time:</b>	Time to go to WOP (dd:hh:mm).
<b>Turn RAD:</b>	Planned turning radius at "To WPT".
<b>Turn Rate:</b>	Calculated rate of turn that is based on current speed and planned turning radius.
<b>Next WPT:</b>	The WPT following the "To WPT".
<b>Next:</b>	Course to steer after "Next WPT".



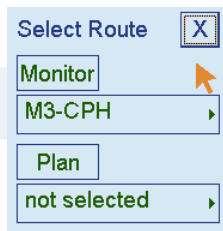
## Monitor Route dialog

The Monitor Route dialog displays all the information about the monitored route which is not available in the [Route Information Box]

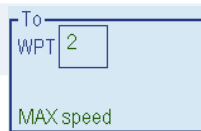
1. Click on the text "Route" in the [Route information box].



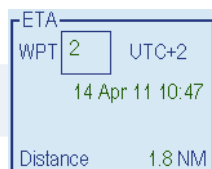
2. Click the [Monitor] button.



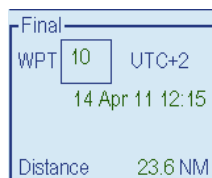
3. The [Monitor] page allows you to go to a different waypoint.



4. You can also calculate ETA for a user defined waypoint.

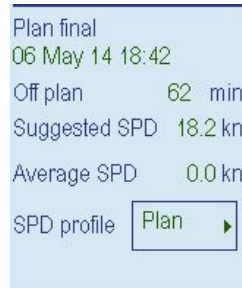


5. You can also change the final waypoint and view the distance and ETA for the new final waypoint.

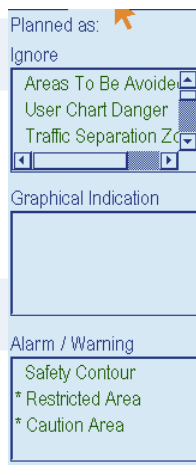




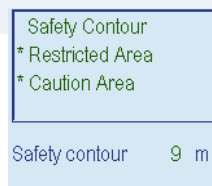
6. You have the option to see if the vessel is on schedule or behind.  
 If you have selected "Schedule" as optimisation method when creating the route plan, the ECDIS will suggest the speed necessary for arrival on time.



7. The [Alerts] page allows you to view which [Alerts] have been selected during planning.



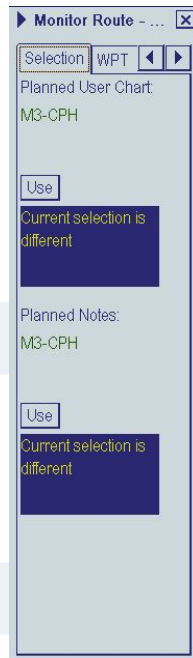
8. The [Alerts] page also allows you to see which [Safety Contour] have been used during planning.





9. The [Selection] page allows you to identify and activate the [User Chart] and [Notes] for this particular route.

If you want monitor the [User Chart] and [Notes] linked to this route, please click the [Use] button twice.



10. The [WPT] page shows position, radius of turn and ETA for each waypoint. You can read which waypoint is the next one as well.





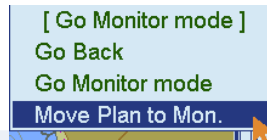
## How to monitor a planned user chart or notes

The procedure to monitor a [User Chart] or [Notes] is similar to monitoring a route.

1. When your [User Chart] is finished, please touch the blue triangle and click the [Go Monitor Mode].



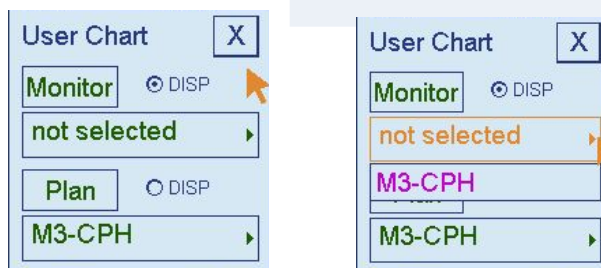
2. Click the [Move Plan to Monitor].



3. If the [User Chart] or [Notes] is not already selected, please click the [User Chart] or [Notes] button in the Sidebar.



4. Click the dropdown menu below the Monitor button and select the appropriate user chart or notes file.



5. When you have selected the proper file, click on the Monitor button to monitor that file.



## Voyage planning checklist example

**FURUNO**

FEA 2X07 ECDIS – Route Plan - Checklist

Voyage number \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_ Date \_\_\_\_\_

	YES	NO	N/A
ENC charts with Permit for the entire voyage available in the ECDIS catalogue?			
ENC Charts updated with latest Base and Update DVD/CDs/download?			
ENC Charts updated with latest AIO CD?			
ENC Charts updated with latest NIM T&Ps and NAVTEX (Manual Update)			
Viewing Dates: use [Real Date] or [Date Range] with correct start and end date for planning of your up-coming voyage			
Is the route prepared using safe settings for Draught, Safety Contour and Depth Contours in compliance with company Under Keel Clearance policy and with due regard to Squat Effect (Including Trim & Heel)?			
Safety Contour Planning: _____m			
Estimated speed for each leg entered into voyage plan?			
Channel Limits set to a minimum of 2 NM at open sea (If possible)?			
Calculated ETA in route planning tool using present departure date?			
USER CHART and NOTES created and/or updated for the voyage? Containing as a minimum the following items:			
Pilot reporting points?			
Mandatory reporting points?			
Point Of No Return for narrow passages?			
Contingency anchorages?			
No Go areas (Using Channel Limits and User Danger Areas in User Chart)?			
Conspicuous targets for position fixing and Cross Checking reference?			
Parallel Index?			
Areas with high speed vessels?			
It is recommended to check to Route Plan using IMO AII, when the Route Plan check is completed, the operator should re-select the Company approved Chart Display with all relevant settings.			
Is the Route Plan checked both visually and using the ECDIS's automatic check function? – as recommended?			
Is the Route Plan rectified for Safety Contour alerts? – as recommended?			
Route plan checked together with User Chart & Notes using voyage specific Safety Contour?			
Print Passage Plan Report?			
Chart Alert setting used for planning the route:	Alarm	Ind.	Off
Areas To be avoided			
User Chart Danger			
Traffic Separation Zone			
Inshore Traffic Zone			
Restricted Area			
Caution area			
Offshore Production Area			
Military Practice area			
Seaplane Landing Area			
Submarine Transit Lane			
Anchorage Area			
Marine Farm/Aquaculture area			
PSSA Area			

Navigation Officer of the watch

Route Plan checked by Master  
(if applicable)

\_\_\_\_\_

\_\_\_\_\_

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Z:\FEBO\INSTC - N-drev\INSTC CERTIFIED + STCW\TST FEA\TST FEA 06.5007 Drawings and Manuals\06 File in material\02 Checklist\FEA ECDIS Route Plan Checklist 4.0.docx



## Change Of Watch checklist example

**FURUNO**

FEA 2X07 ECDIS – Pre-Monitor and change of watch - Checklist

Voyage number \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_ Date \_\_\_\_\_

	YES	NO	N/A
Is Chart Viewing date set to Real Date?			
Is the ENC Charts updated with latest available NtM T&Ps and NAVTEX			
Is the Route Plan checked both visually and using the ECDIS's automatic check function before going to monitor mode – as recommended?			
Please write the name of the present Route Plan(s) to be used for this voyage			
Route Plan: _____			
Route Plan: _____			
Route Plan: _____			
Please write the name of the present User Chart(s) to be used for this voyage			
Route Plan: _____			
Route Plan: _____			
Route Plan: _____			
Please write the name of the present Note(s) to be used for this voyage			
Route Plan: _____			
Route Plan: _____			
Route Plan: _____			
Is the Route plan in monitor mode?			
Is the User Chart in monitor mode?			
Is the Note in monitor mode?			
Is the Chart Display set up according to company policy (Please see ECDIS Chart Display Setup Report)			
Is the Check Alert active?			
Is GPS1 input checked and found in order?			
Is GPS2 input checked and found in order?			
Is Gyro1 input checked and found in order?			
Is Gyro2 input checked and found in order?			
Is Speed Log input checked and found in order?			
Is AIS input checked and found in order?			
Is Radar Overlay checked and found in order?			
Voyages lasting more than one week	Date	Week	
If available: ENC Charts updated with latest Base and Update DVD/CDs/download?			
If available: ENC Charts updated with latest AIO CD?			
ENC Charts updated with latest NtM T&Ps and NAVTEX (Manual Update)			

Navigation Officer of the watch

Master

(If applicable)

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## Vessel information "S/S Martha"

**PILOT CARD  
 &  
 WHEEL HOUSE POSTER**

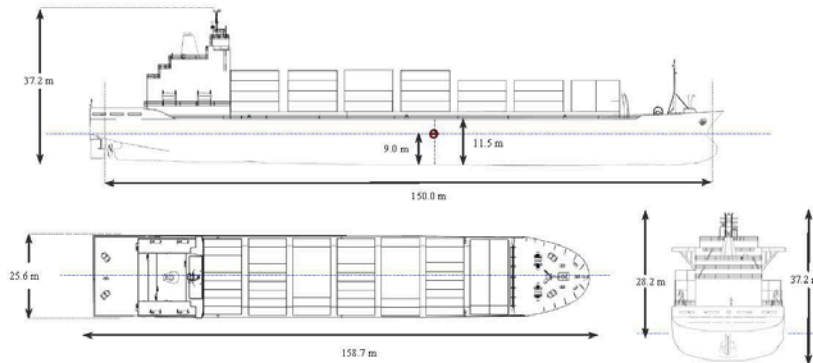


Page : 1 of 7  
 Version : 02/12  
 Revision : 01/12  
 Date : 09/02/12



### SHIP'S PARTICULARS

Name: S/S Martha	Call Sign: VRU7/ LASL4/3E117	MMSI: 355074000
Length (O.A): 158.7 m	Length (B.P): 150.0 m	Beam: 25.6 m
Propulsion:	Diesel, Single Right Hand FPP	Power: 9730 KW
Steering:	Rudder Type: Semi balanced, Max Angle: 35°	
Thruster:	Bow Thruster x 1 / 670 KW	Stern Thruster: None
BALLAST	Displacement: 9235 MT	Deadweight: 2818 MT
PARTLY LOADED	Displacement: 16980 MT	Deadweight: 10560 MT
LOADED	Displacement : 21735 MT	Deadweight: 15316 MT
		Draft (F): 4.73 m (A): 7.40 m
		Draft (F): 6.50 m (A): 7.80 m
		Draft (F): 9.0 m (A): 9.0 m



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**PILOT CARD  
 &  
 WHEEL HOUSE POSTER**



Page : 2 of 7  
 Version : 02/12  
 Revision : 01/12  
 Date : 09/02/12

**MANOEUVRING DATA**

*Draught at which the Manoeuvring data were obtained*

Trial Drafts			
	BALLAST	PARTLY LOADED	LOADED
Forward	4.7 m	6.50 m	9.0 m
Aft	7.4 m	7.80 m	9.0 m

ANCHOR DETAILS			
	Type of Anchor	No. of shackles	Max. rate of heaving (min/shackle)
Port	Admiralty	11	2m 33s
Starboard	Admiralty	11	2m 33s
Stern			
(1shackle = 27.5 m)			

STEERING PARTICULARS			
No. of rudder(s)	1	Rudder type	Semi Spade
Max rudder angle	35 °		
Min speed to maintain course propeller stopped		3.0 knots	
Rudder angle for neutral effect	1 °		

Manoeuvring speed tables (trial or estimated*)			
Engine Order	RPM/Pitch Setting	Speed(Knots)	
		Loaded	Ballast
Full sea speed(NFA)	105.0	21.90	23.00
Full ahead	73	15.30	15.90
Half ahead	56	11.70	12.20
Slow ahead	46	9.60	10.00
Dead slow ahead	34	7.00	7.40
Dead slow astern	-34	Time limit astern	No Limit min
Slow astern	-46	Max no. of consecutive starts	11
Half astern	-56	Astern power	70 % ahead
Full astern	-73	Crash Stop Time	350 sec

TURN DATA						
	Ballast		Partially Loaded		Loaded	
	Port	Starboard	Port	Starboard	Port	Starboard
Advance (90°)	640.0 m	643.0 m	629.0 m	633.0 m	649.0 m	647.0 m
Transfer (90°)	262.0 m	268.7 m	283.6 m	294.8 m	288.0 m	297.0 m
Tactical Dia. (180°)	616.0 m	632.6 m	628.1 m	648.8 m	645.0m	666.0 m

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**ARI**  
SIMULATION

Page : 3 of 4  
Version : 02/12  
Revision : 01/12  
Date : 09/02/12

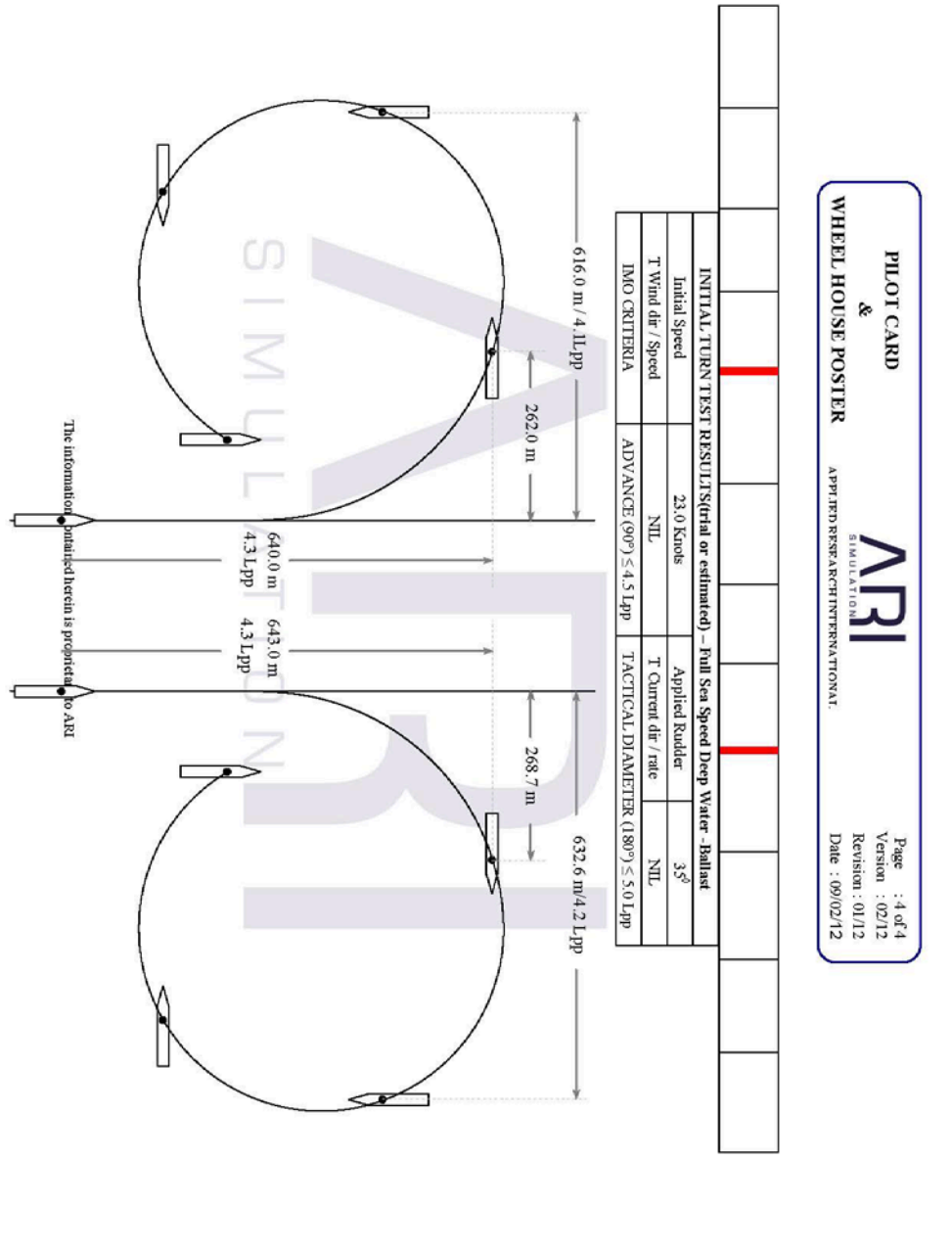
**PILOT CARD  
&  
WHEEL HOUSE POSTER**

## STOPPING CHARACTERISTICS

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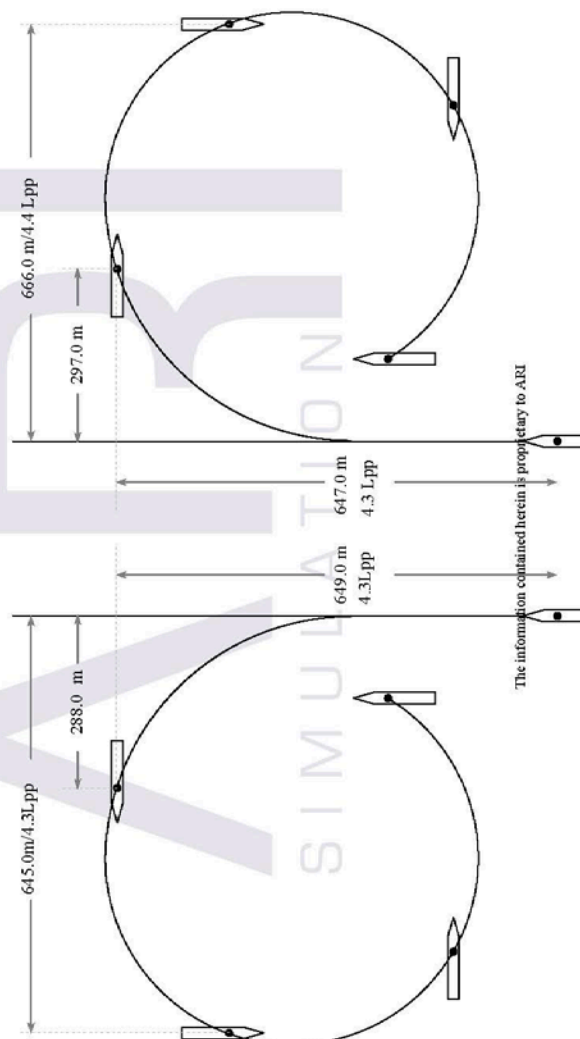
Page : 5 of 4  
 Version : 02/12  
 Revision : 01/12  
 Date : 09/02/12

**ARI**  
 SIMULATION

APPLIED RESEARCH INTERNATIONAL

**PILOT CARD  
 &  
 WHEEL HOUSE POSTER**

INITIAL TURN TEST RESULT (trial or estimated) - Full Sea Speed Deep Water - Loaded				
Initial Speed	21.90 Knots	Applied Rudder	35°	
T Wind dir / Speed	NIL	T Current dir / rate	NIL	
IMO CRITERIA	ADVANCE (90°) ≤ 4.5 Lpp	TACTICAL DIAMETER (180°) ≤ 5.0 Lpp		





## Route planning exercise Arrival Felixstowe

In this exercise you're at planning a route using the vessel information from the containership "S/S MARTHA". The vessel information is found in your training manual. Use the voyage planning checklist in the training manual before starting your route plan

The voyage is an arrival at the Port of Felixstowe in United Kingdom.  
 The Planned route must start at Sunk Head Tower (51°45'N - 001°32'E) and end at Berth no. 4 located at the Trinity Container Terminal.

1. CREATE a ROUTE PLAN for this passage, following any official traffic separation schemes.

The route is to be named using ARR.FLXSTW + your last name.

2. Use the following settings when planning the route:

- Safety contour: Draft plus 20%      Safety depth: Draft plus 20%

3. Calculate the START POS° to Pier ETA, based on the route plan: ETD is the day after tomorrow at 1000 UTC

- What is the Passage time: \_\_\_\_\_ and ETA: \_\_\_\_\_

Dredging operations are taking place south of Harwich Channel between buoy number 4 and number 8. The area is considered a dangerous area.

4. Create a USER CHART covering this area and name it using FLXSTW + your last name

5. Create the following Notes:

- Call Sunk VTS and London VTS where it is necessary.

6. Create a note for the User Chart area you have created in objective no. 4: "Dredging operations in progress - all ships keep clear from 0800UTC to 1900UTC"

7. The berth is available at 12:30, calculate the planned speed to arrive the berth in due time.

8. Link the USER CHART (and Notes) to the route plan

9. Check the route automatically, using the Alerts setup from your Voyage planning checklist. Correct any problems.

10. Create backup copies of the route plan and user chart (and notes) on the USB memory stick.



## Route planning exercise Felixstowe to Algeciras Part 1 of 3

In this exercise you're at planning a route using the vessel information from the containership "S/S MARTHA". The vessel information is found in your training manual.  
 Use the voyage planning checklist in the training manual before starting your route plan

This exercise is in 3 parts: Departure, Transfer and Arrival.

You must select an appropriate chart folio (ENC or RNC) for each part of the exercise.  
 The folio should contain official vector charts where available.

The first part of the voyage is the departure from the Port of Felixstowe in United Kingdom.

The Planned route starts at Berth no. 4 located in the Trinity Container Terminal and ends at the radio-call-in-point CALDOVREP located in the English Channel south of the buoy "Mid Falls" in pos. 51°18.00N 001°43.6E .

ETD is on Sunday at 1115 LOCAL (-1)

1. CREATE a ROUTE PLAN for this passage, following any official Traffic Separation Schemes.

The route must be named FLXSTWX + your last name.

2. Use the following settings when planning the route:

- Safety contour: Draft plus 20%      Safety depth: Draft plus 20%

3. Calculate the "pier to Reporting point" ETA, based on the route plan:

- Passage time: \_\_\_\_\_ ETA: \_\_\_\_\_

Dredging operations are taking place south of Harwich Channel between buoy number 4 and number 8. The area is considered a dangerous area.

4. Create a USER CHART covering this area and name it FLXSTWX + your last name.

5. Create the following Notes:

- For the USER CHART you have CREATED in objective no. 4: "Dredging operations in progress - all ships keep clear from 0800UTC to 1900UTC"

6. Link the USER CHART (and Notes) to the route plan

7. Check the route automatically, using the Alerts setup from your Voyage planning checklist. Correct any problems.

8. Create a backup copy of the Route Plan, the User Chart (and Notes) on the USB



## Route planning exercise Felixstowe to Algeciras Part 2 of 3

In this exercise you're at planning a route using the vessel information from the containership "S/S MARTHA". The vessel information is found in your training manual. Use the voyage planning checklist in the training manual before starting your route plan

You must select an appropriate chart folio (ENC or RNC) for each part of the exercise. The folio should contain official vector charts where available.

The second part of the voyage is the transfer from the radio-call-in-point CALDOVREP to Gibraltar.

The CALDOVREP is located in the English Channel south of the buoy "Mid Falls" pos. 51°18.00N 001°43.6E.

The last way point of the transfer must be located at the radio-call-in-line GIBREP In pos. 36°00.00N 005°58.00W.

1. CREATE a ROUTE PLAN for this passage, following any official Traffic Separation Schemes.  
 The route must be named CHNNLGIB + your last name.

2. Use the following settings when planning:

- Safety contour: Draft plus 20%      Safety depth: Draft plus 20%

3. Calculate the Reporting Point to Reporting Point ETA. Use the arrival time to CALDOVREP from exercise 1 to calculate ETA GIBREP.

ETD: \_\_\_\_\_ Passage time: \_\_\_\_\_ ETA: \_\_\_\_\_

Display the "Radio channels" and "Reporting points" on the chart.

Create the following Notes:

Call Ushant VTS (located NW off Port of Brest in France)  
 Call Finisterre VTS (located NW off Portugal)  
 Call GIBREP in Strait of Gibraltar

4. What is the main VHF channel to Ushant VTS: Channel: \_\_\_\_\_

5. Link the USER CHART (and Notes) to the route plan

6. Check the route automatically, using the Alerts setup from your Voyage planning checklist. Correct any problems.

7. Create a backup copy of the Route Plan, the User Chart and the Notes on the USB Memory device.



## Route planning exercise Felixstowe to Algeciras Part 3 of 3

In this exercise you're at planning a route using the vessel information from the containership "S/S MARTHA". The vessel information is found in your training manual.  
Use the voyage planning checklist in the training manual before starting your route plan

You must select an appropriate chart folio (ENC or RNC) for each part of the exercise.  
The folio should contain official vector charts where available.

The third part of the voyage is the arrival at Algeciras.

The route stretches from the radio-call-in-line GIBREP at pos. 36°00.00N - 005°58.00W to berth in the Port of Algeciras at the "Terminal De Contenedores - Muelle Juan Carlos 1 Sur" in pos° 36°08'20N – 005°26'10E .

1. CREATE a ROUTE PLAN for this passage, following any official Traffic Separation Schemes.

The route must be named GIBALG+ your last name.

Use the following settings when planning:

- Safety contour: Draft plus 20%      Safety depth: Draft plus 20%

2. Calculate the "Reporting Point to Pier" ETA, based on the arrival time from Exercise 2

3. ETD: \_\_\_\_\_ Passage time: \_\_\_\_\_ ETA: \_\_\_\_\_

4. Create a USER CHART showing the east bound lane of the TSS and name it GIBALG

5. Create the following Notes:

- Call engine room when entering the Traffic Separation Scheme.
- Call master 4 NM before the precautionary area.
- Call Algeciras pilot before entering Bahia de Algeciras.

6. Link the USER CHART (and Notes) to the routeplan

7. Check the route automatically, using the Alerts setup from your Voyage planning checklist. Correct any problems.

8. Save the routeplan.

Now you have created the three separate routes, you must create a fourth route and merge the first three routes into the new route.

9. The fourth route must be named FELIXALG Voyage 1021 + your last name.



10. Check the route automatically, using the Alerts setup from your Voyage planning checklist. Correct any problems.

Write down from the route plan check, which alert(s), if any, were displayed when the plan was checked? Why were they displayed?

11. Warning(s):

---

12. Reasons:

---

13. Enter the ETD from exercise 1 :

- Date: \_\_\_\_\_ Time: \_\_\_\_\_ Zone: \_\_\_\_\_

14. What is the ETA at the final waypoint? \_\_\_\_\_

15. What is the Course, Distance and Duration of the leg between WP 4 and WP 5

- Course: \_\_\_\_\_ Dist.: \_\_\_\_\_ Duration: \_\_\_\_\_

16. What is the total number of waypoints? \_\_\_\_\_

17. What is the total distance and duration of the route plan?

- Distance: \_\_\_\_\_ Duration: \_\_\_\_\_

18. Create a new User Chart named "FELIXALG Voyage 1021"

19. Merge the three User Charts (and Notes) that you have created for the previous parts of the exercise into this new note.

20. Check the new Route Plan again and correct any problems.

21. Create a backup copy of the Route Plan, the User Chart and the Notes on the USB

22. Change the name of your new Route Plan to: "FELIXALG Voyage 1021 + your initials".

23. Change the name of your new User Chart to: "FELIXALG Voyage 1021 + your initials".



Last page of document

FEA