

Model **FMD-3200/FMD-3200-BB/FMD-3300**

**Controls**

The system can be operated with the controls or the trackball module. The procedures in this operator's guide use the trackball module.



**BRILL knob**  
 Rotate: Adjusts the brilliance of FURUNO or Hatteland monitor.  
 Push: Selects a color palette.

**A/C RAIN, A/C SEA knob**  
 No use.

**GAIN knob**  
 No use.

**Status LED**

The color and state of the LED change according to alert status.  
**OFF:** Heater on CPU board is on.  
**Green, lighting:** Normal operation status; no alerts generated.  
**Red, flashing rapidly:** Alert not acknowledged nor rectified.  
**Red, flashing slowly:** Alert not acknowledged, but rectified.  
**Red, lighting:** SYSTEM FAIL or acknowledged but not rectified alert.

**Rotary encoder for VRM**

Adjusts the active VRM.  
**VRM1, VRM2**  
 Activates, deactivates respective VRM.

**POWER key**

Turns the system on or off. (This key may or may not control monitor on/off depending on monitor setting.)

**USB port (under cover)**

Connects a USB flash drive.

**Rotary encoder for EBL**

Adjusts the active EBL.  
**EBL1, EBL2**  
 Activates, deactivates respective EBL.

**ALARM ACK key**

Acknowledges alerts; silences the audio alarm.

**InstantAccess knob**

Accesses functions on the InstantAccess bar.  
**Rotate:** Selects item.  
**Push:** Confirms selection.

**ESC key**

Goes back one step in current InstantAccess bar operation.



**Trackball module**

Operates like a PC mouse.

**Keyboard**

A keyboard for entering alphanumeric data.

**MFD key**

Toggles operating modes.

**UNDO key**

Undoes the last operation, when creating a route or user chart.

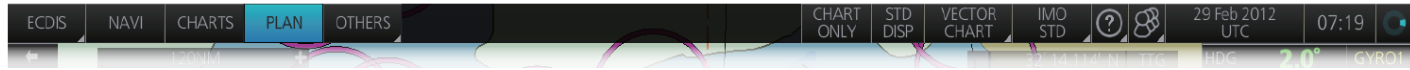
**RANGE key**

Selects a chart scale.

<b>VIEW/HIDE</b>	<b>VIEW/HIDE key</b> Shows, hides EBLs, Instant Access bar, Overlay/NAV Tools box, VRMs, Route Information box.
<b>ACQ/ACT</b>	<b>ACQ/ACT key</b> Activates selected sleeping AIS target.
<b>TARGET DATA</b>	<b>TARGET DATA key</b> Displays the detailed target data for selected TT, AIS target.
<b>TARGET CANCEL</b>	<b>TARGET CANCEL key</b> Sleeps selected activated AIS target.

# Display Layout

Status bar (See page 3.)



InstantAccess bar

(See page 4.)



Upper section

Lower section

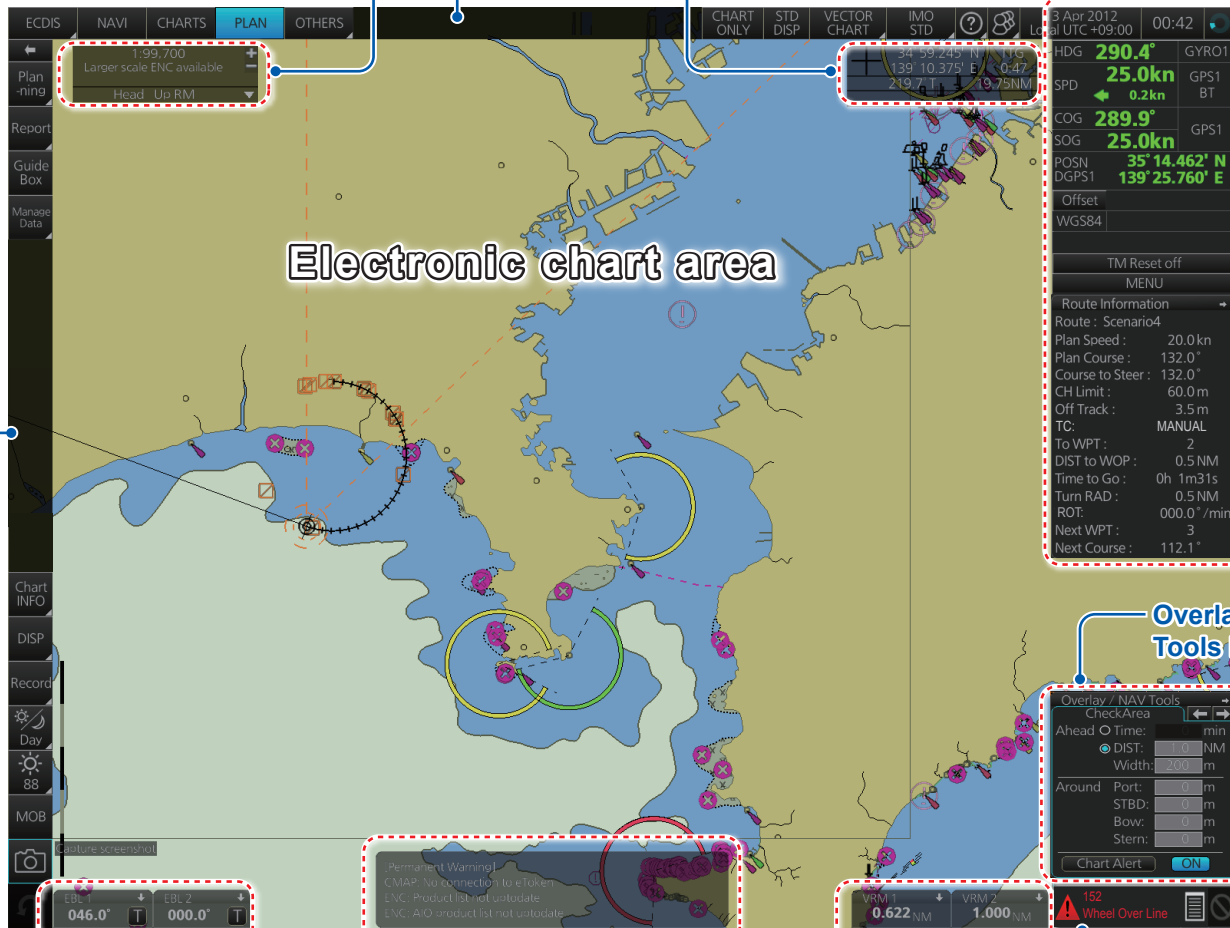
Chart scale/presentation mode box



Cursor position box



Electronic chart area



Sensor information box

HDG	2.0°	GYRO1
SPD	-19.8kn	GPS1
	← 1.5kn	BT
COG	186.3°	GPS1
SOG	19.9kn	
POSN	33° 59.343' N	
DGPS1	134° 47.327' E	

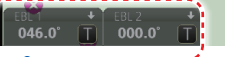
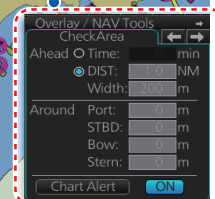
Own ship functions box

Offset
WGS84
TM/CU Reset

Route information box

Route Information
Route : Scenario4
Plan Speed : 20.0 kn
Plan Course : 132.0°
Course to Steer : 132.0°
CH Limit : 60.0 m
Off Track : 3.5 m
TC: MANUAL
To WPT : 2
DIST to WOP : 0.5 NM
Time to Go : 0h 1m31s
ROT: 0.5 NM
Turn Rate : 000.0° /min
Next WPT : 3
Next Course : 112.1°

Overlay/NAV Tools box



EBL1 box, EBL2 box



Permanent warnings box



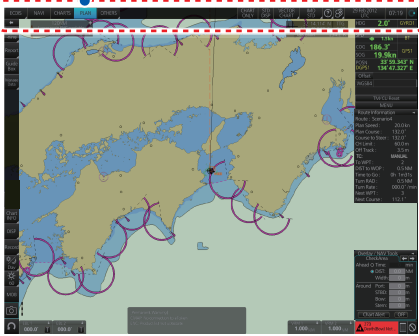
VRM1 box, VRM2 box

Alert box



## Status Bar

Status bar

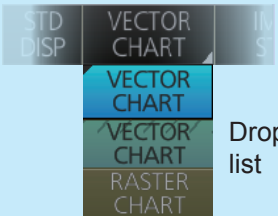


### How to open a drop-down list

Indicates a drop-down list.



Click button



Drop-down list



**OTHERS:** Sets system in standby; plays back data (AMS off).

**PLAN:** Selects the Voyage planning mode.

**CHARTS:** Selects the Chart maintenance mode.

**NAVI:** Selects the Voyage navigation mode.

**Operating mode:** Selects an operating mode, ECDIS, Conning or AMS (option).



**Chart priority:**  
Selects which chart type to display, vector or raster, when both are available.

**User profiles, Settings menu:**  
Manages user profiles; opens the Setting menu.

**Spinner:**  
Rotates clockwise if the system is working properly.

**STD DISP:**  
Restores IMO standard display.

**Chart database:**  
Displays the operator's manual, ECDIS program no. and system information.

**Date:**  
Displays the date; selects the time to use, local or UTC.

**Time:**  
Time (local or UTC).

**CHART ONLY:**  
Shows only the chart, when left button is pressed and held down.

**Chart database:**  
Selects the pre-defined presentations of ENC content: IMO BASE, IMO STD or IMO ALL.

# Instant Access Bar

## Upper section (by operating mode)

### Voyage navigation mode

**MSG:** Opens the Message dialog box to manage AIS Safety and NAVTEX messages.

**Manual Update:** Inserts chart update symbols manually.

**Mini Conning:** Shows, hides the mini conning display.

**Weather Overlay:** Shows, hides the weather overlay.

**Instant Track:** Creates temporary track to return to or deviate from monitored route.

**TCS:** Shows or hides the Track Control Status window.

**Go AW, Go SEA:** Activates respective autopilot steering mode.

\* Not shown with Autopilot FAP-2000.

### Chart maintenance mode

**AUTO Load:** Starts automatic installation of the chart data (CD or DVD ROM).

**Manage Charts:** Manages chart cells (grouping, deleting, etc.).

**Cell Status:** Shows the chart catalog to get info about charts installed in the system.

**License:** Manages chart licenses.

**Public Key:** Manages public keys.

**Sync Config:** Selects ECDIS units to synchronize.

**Sync Status:** Displays sync status; does sync status functions.

**Reconvert:** Reconverts outdated SENC charts to the corresponding current ones.

### Voyage planning mode

**Report:** See reports on waypoints and voyage planning related routes and user charts.

**Plan-ning:** Creates a route (see page 5).  
User Chart: Creates a user chart (see page 7).

**Guide Box:** Provides range and bearing information between the last waypoint and the cursor position when creating a route.

**Manage Data:** Deletes, imports routes and user charts; exports routes and route data.

## Lower section

**SET:** Shows, hides chart features; sets chart alerts.

**TWO DISP:** Splits the screen in two, horizontally or vertically.

**AIO:** Displays Admiralty Information Overlay.

**Chart Legend:** Finds data about current chart.

**Viewing Dates:** Sets "display date" and "approved until" dates.

**Chart 1:** Provides overview of ECDIS chart symbols.

**Chart INFO:** Shows, hides software keyboard.

**DISP:** Selects a color palette.

**Record:** Records user/position events to the event log; accesses various logs.

**Day:** Adjusts brilliance of FURUNO or Hatteland-monitor.

**86:** Marks man overboard position.

**MOB:** Takes a screenshot.

**Camera icon:** Undoes past action (route, user chart).



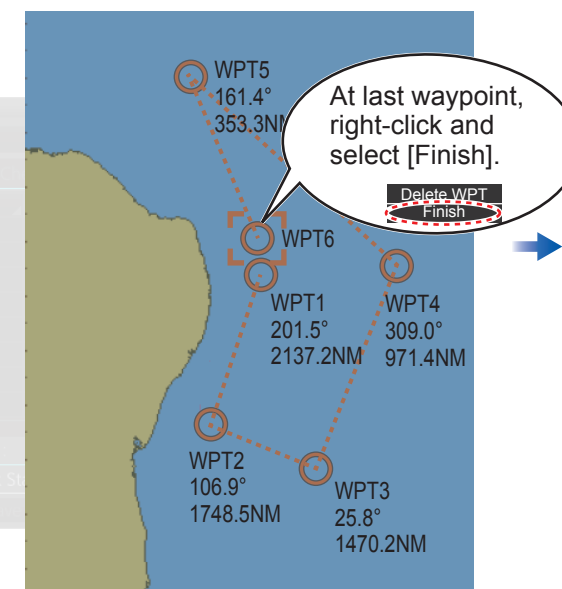
# Routes

## How to create a route

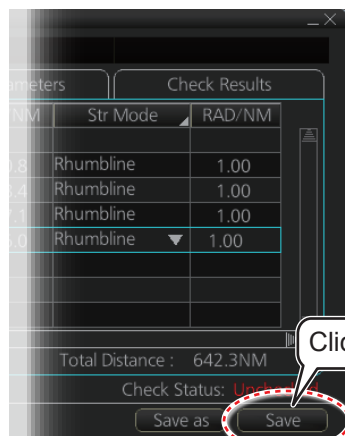
PLAN

Plan-ning

Route



Continue entering waypoints.



# Routes (con't.)

## How to select a route to navigate

Route Information  
Route: Scenario4  
Plan Speed: 20.0kn  
Plan Course: 2  
Course to Steer: 2  
CH Limit: 0.5NM  
Off Track: 0.5NM  
To WPT: 2  
DIST to WOP: 0.5 NM  
Time to Go: 0h 1m31s  
Turn RAD: 0.5 NM  
ROT: 000.0° /min  
Next WPT: 3  
Next Course: 112.1°

Select NAVI mode; right click [Route].

Select Route  
Move to Plan  
Route INFO

Click [Select Route].

Select Route  
Filter:  Planned Route  Instant Track

ID	Name	Date
14	2ntitled1	25 Apr 2014
15	Untitled1	14 Nov 2014
17	Untitled1a	07 Nov 2014
16	Untitled2	06 Nov 2014
13	route1	28 Oct 2014
7	route11	13 Mar 2014

Total WPTs: 4  
Start WPT: 36° 53.396' N 133° 59.390' E

Select a route.

Select Route  
Filter:  Planned Route  Instant Track

ID	Name	Date
14	2ntitled1	25 Apr 2014
15	Untitled1	14 Nov 2014
17	Untitled1a	07 Nov 2014
16	Untitled2	06 Nov 2014
13	route1	28 Oct 2014
7	route11	13 Mar 2014

Total WPTs: 4  
Total DIST: 177.5NM  
Start WPT: 36° 53.396' N 133° 59.390' E

Route selected.

Click [Open].

To stop navigating a route:



## How to view route waypoint information

Route Information  
Route: Scenario4  
Plan Speed: 20.0kn  
Plan Course: 2  
Course to Steer: 2  
CH Limit: 0.5NM  
Off Track: 0.5NM  
To WPT: 2  
DIST to WOP: 0.5 NM  
Time to Go: 0h 1m31s  
Turn RAD: 0.5 NM  
ROT: 000.0° /min  
Next WPT: 3  
Next Course: 112.1°

Select NAVI mode; right click [Route].

Select Route  
Unselect  
Move to Plan  
Route INFO

Click [Route Info].

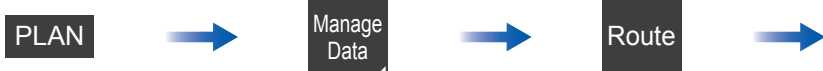
Route Information  
Route: AAAAAA  
Waypoints  
User Chart

WPT	Name	Latitude	Longitude	ETA	Plan SPD
1		34.263° E			
2		33.949° E		14:01 15 Nov 2012	20.0
3		61° 44.404' N 024° 34.105' E		15:15 15 Nov 2012	20.0
4		61° 44.404' N 024° 15.779' E		16:15 15 Nov 2012	20.0

Total WPTs: 4  
Total Distance: 60.5NM

Click [Waypoints] tab.

## How to delete a route



Route Data Management  
Filter:  Planned Route  Instant Track

ID	Name	Date
4	2ntitled1	25 Apr 2014
5	Untitled1	14 Nov 2014
17	Untitled1a	07 Nov 2014
16	Untitled2	06 Nov 2014
13	route1	28 Oct 2014
7	route11	13 Mar 2014

Total WPTs: 4  
Start WPT: 36° 53.396' N 133° 59.390' E  
Total DIST: 177.5NM  
Final WPT: 36° 53.396' N 133° 59.390' E

1 Check route(s) to delete.

2 Click [Delete].

# User Charts

## How to create a user chart



Click object to draw.

- Tidal:**
  - Predicted
  - Current
- Line:**
  - Coast
  - Route
  - Nav
  - Depth
- Clearing Line:**
  - NMT
  - NLT

- Area**
- Circle**
- Label**
  - Label
  - Point

### How to draw a line

(1) Click (2) Click (3) Click

(4) Right click; select [Finish].

### How to draw a circle

(1) Click

(2) Move cursor; double click.

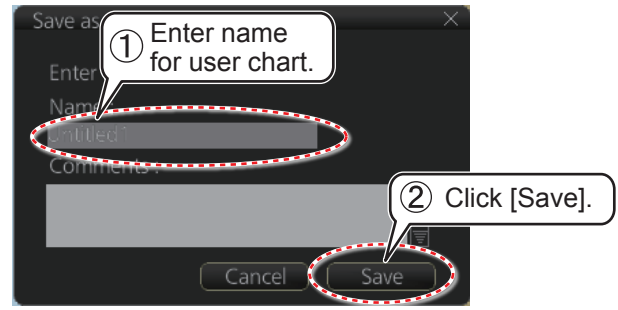
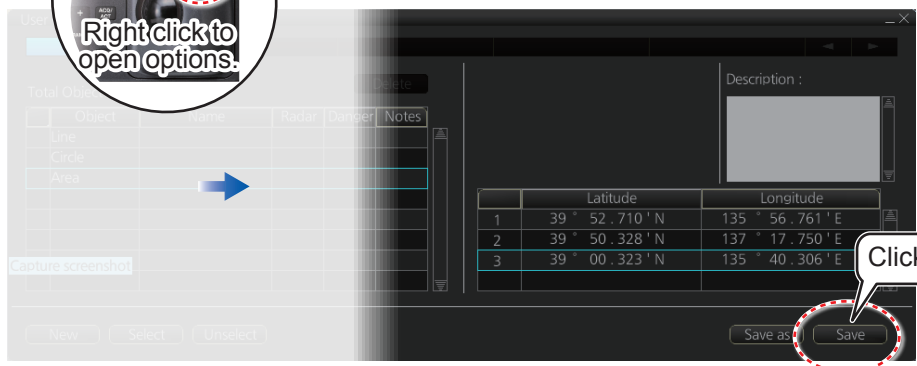
(4) Right click; select [Finish].

### How to draw an area

(1) Click (2) Click (3) Click

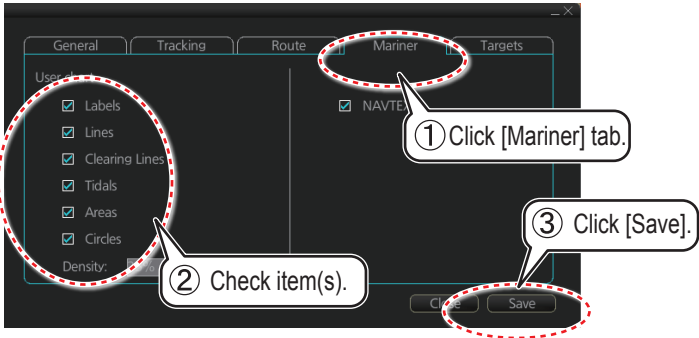
(4) Right click; select [Finish].

Example objects

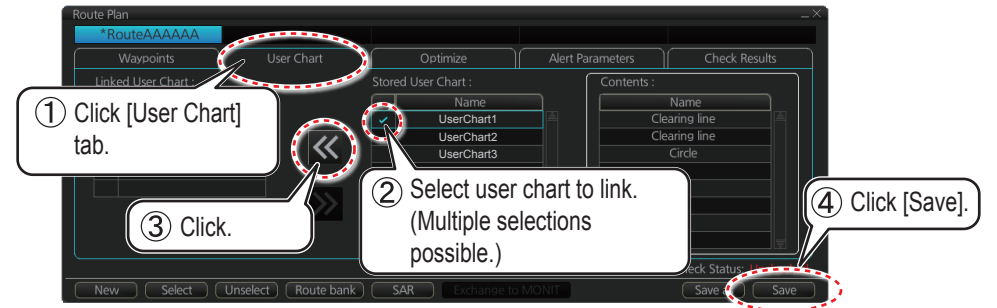
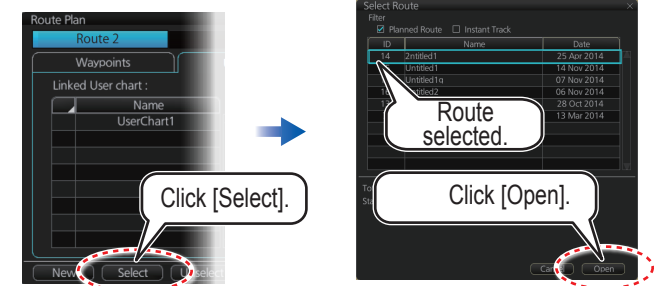


# User Charts(con't)

## How to select objects to display in user chart

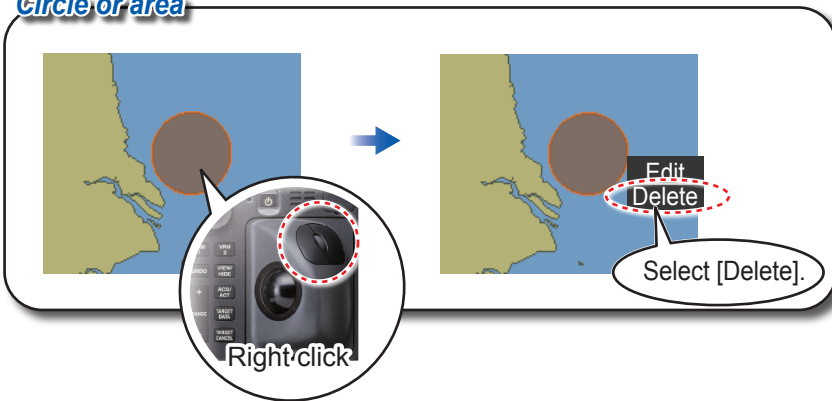


## How to link a user chart to a route

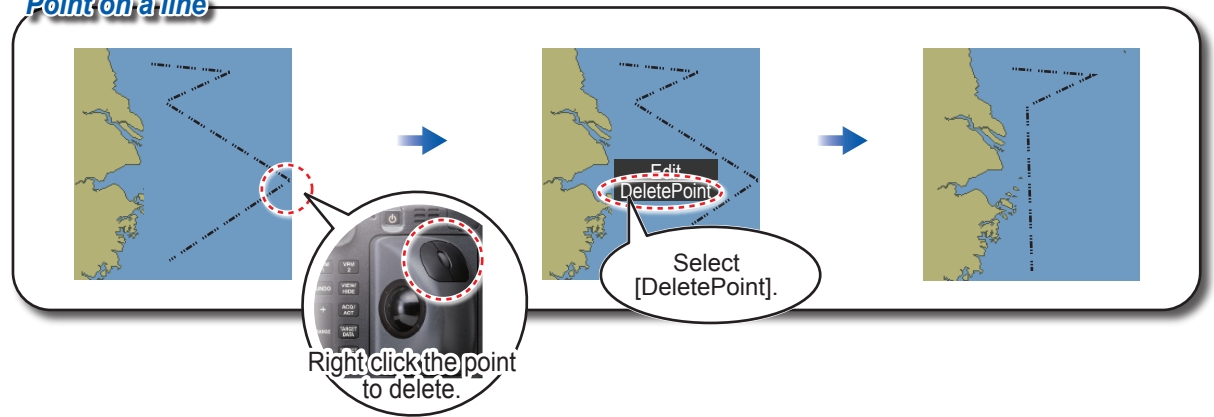


## How to delete objects from a user chart

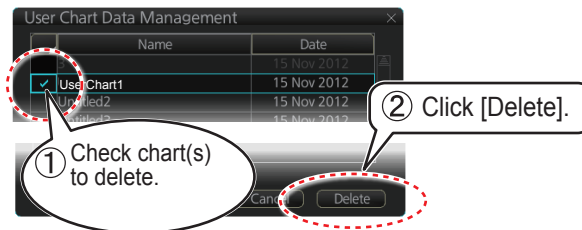
### Circle or area



### Point on a line



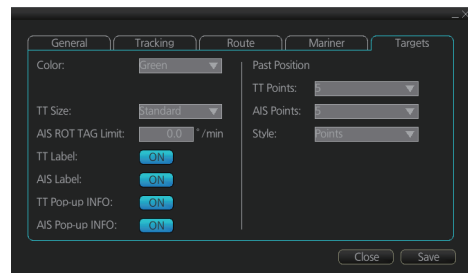
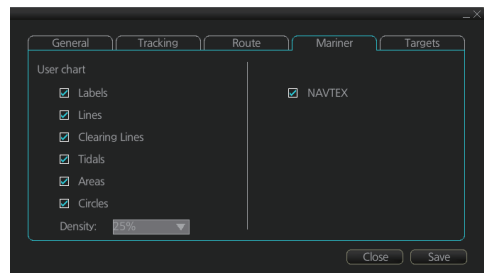
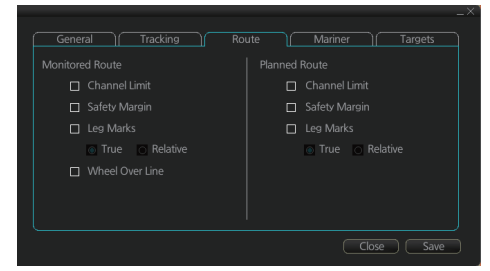
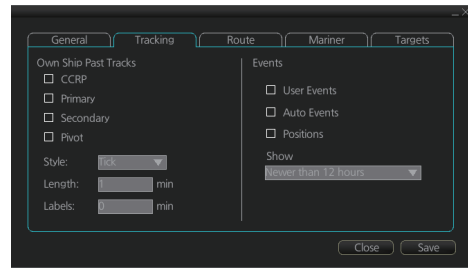
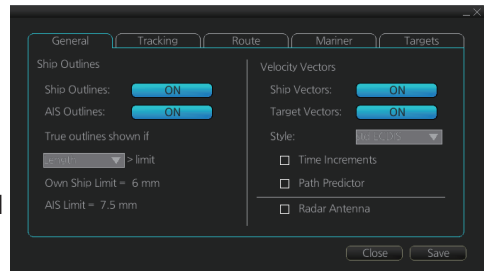
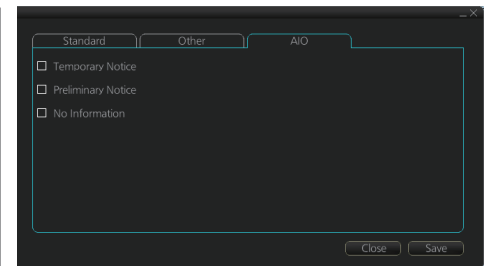
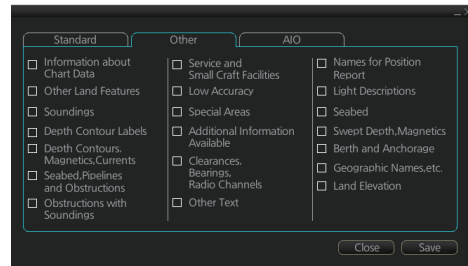
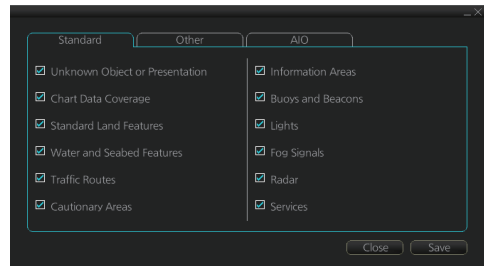
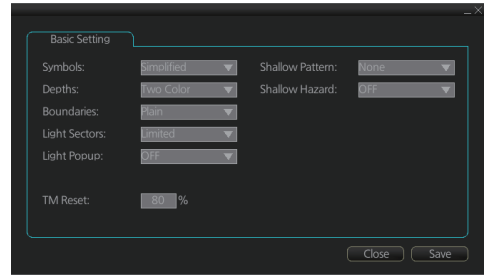
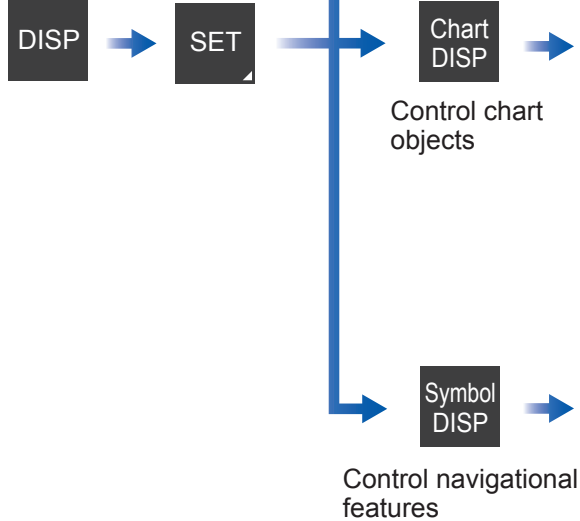
## How to delete user charts





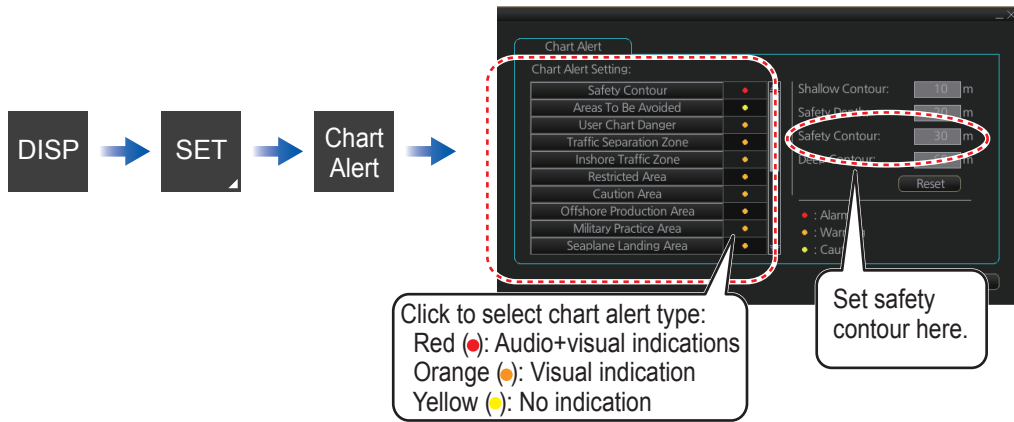
# Chart Operations

## How to control visibility of chart objects

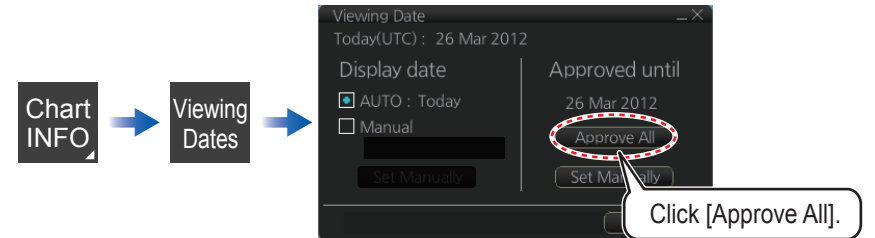


## Chart Operations (con't.)

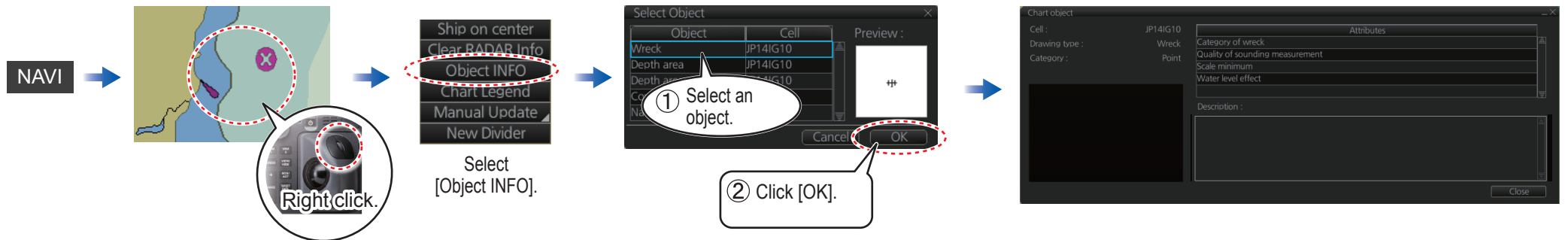
### How to set safety contours and chart alerts



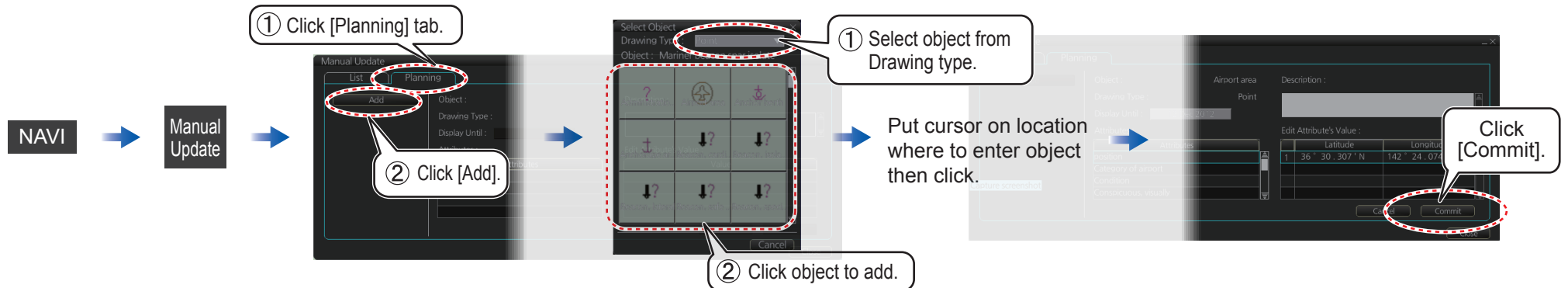
### How to set Display date and Approved until dates



### How to find chart object information (ENC chart)



### How to manually insert a "new" chart object



# TT/AIS Operations

## How to find target info

Click a target to show its information.

**TT Info** window showing target data:

- Title bar: TT Info
- TT No.: TT 06
- Bearing: BRG 102.9 °T
- Range: RNG 7.800 NM
- Course over ground: COG 270.0 °T
- Speed over ground: SOG 10.0 kn
- CPA: CPA 0.100 NM
- TCPA: TCPA 00:06
- Bow crossing range: BCR \*\*\* NM
- Bow crossing time: BCT \*\*\*

**TT symbols (main)**

Symbol (Color)	Name
● (Green)	Past position marker
○ (Green)	Target under acquisition
○ (Green)	Acquired target

**AIS Info** window showing target data:

- Title bar: AIS Info
- MMSI: MMSI 000001003
- Vessel name: VESSEL B
- Bearing: BRG 141.5 °T
- Range: RNG 74.57 NM
- Course over ground: COG 90.0 °T
- Speed over ground: SOG 14.0 kn
- CPA: CPA 28.58 NM
- TCPA: TCPA -79:29
- Bow crossing range: BCR 104.0 NM
- Bow crossing time: BCT >99:59
- Position: 34° 17.923' N, 140° 39.636' E
- HDG: 90.0 °T
- ROT: +0.0° /min
- NAV status: Underway using engine

**AIS symbols (main)**

Symbol (Color)	Name
● (Green)	Past position marker
△ (Green)	Sleeping AIS target
△ <sup>ABC</sup> (Green)	Activated AIS target

## How to set up TT and AIS on the TT/AIS page in Overlay/NAV Tools box

**Overlay / NAV Tools** settings:

- Shows, hides TT display: TT (OFF)
- Shows, hides AIS display: AIS (FUNC OFF)
- Enables, disables TT/AIS CPA/TCPA alarm: CPA/TCPA (0.5NM OFF 3min)
- Sets TT/AIS lost target alarm conditions: Lost TGT (ALL)
- Select past position point interval (time): Past POSN (30sec REL)
- Selects reference for TT/AIS past position display: TT Source (ANT\_1)
- Sets TT/AIS vector time: Vector (3min REL)
- Selects TT/AIS vector reference: Vector (ex. TT)
- Sets CPA and TCPA conditions for TT/AIS CPA/TCPA alarm: AUTO ACT FILT (0.5NM 3min)
- Sets conditions for automatic activation of AIS targets whose CPA is within CPA/TCPA setting: AUTO ACT FILT
- Check to select radar echo source also as TT source: SYNC. ANT (checked)
- Select TT source - radar antenna or TTM data: TT Source (ANT\_1)
- Set reference position in TTM sentence to CCRP or antenna: CCRP

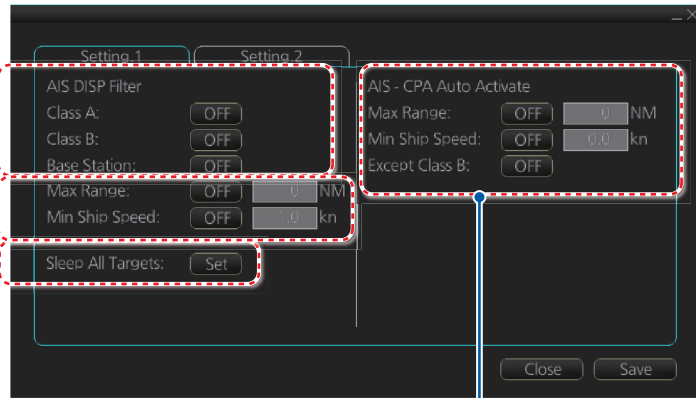
## TT/AIS Operations (con't)

Open the menu, select TT/AIS Setting and then Setting.1 or Setting.2 as appropriate.

### AIS filter, how to sleep all AIS targets, auto activation of AIS targets by CPA

Filters AIS targets by target category.

Filters AIS targets by range, speed.  
Sleeps all activated AIS targets.

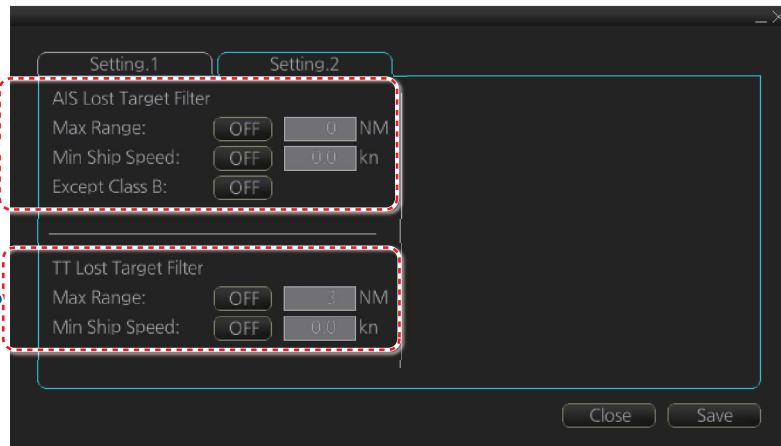


Sets the conditions to activate an AIS target when its CPA is within the CPA alarm setting.

### AIS and TT lost target filters

Sets the conditions for the AIS lost target filter.

Sets the conditions for the TT lost target filter.



## Radar Overlay

- Activates, deactivates the radar overlay.
- Adjusts the picture gain.
- Sets the degree of transparency for the overlay.
- Sets the item to display when a chart object and a radar echo share the same position.
- Selects the antenna to feed the radar echo data.
- Status of the radar echo data, "OK" or "No Data".



## Alert Icons and Their Meanings

Icon	Alert state	Icon description
<b>Alert priority: Alarm</b>		
	Not acknowledged, Not rectified	Red triangle with black loudspeaker in center of triangle. Flashing every 0.5 s.
	Not acknowledged, Not rectified Buzzer temporarily silenced.	Red triangle with crossed out black loudspeaker in center of triangle. Flashing every 0.5 s.
	Acknowledged, Not rectified	Red triangle with black exclamation point in center of triangle.
	Not acknowledged, Rectified	Red triangle with black check mark in center of triangle. Lights 3 s, off 1 s, repeat.
<b>Alert priority: Warning</b>		
	Not acknowledged, Not rectified	Yellow-orange circle with black loudspeaker in center of circle. Flashing every 0.5 s.
	Not acknowledged, Not rectified Buzzer temporarily silenced	Yellow-orange circle with crossed out black loudspeaker in center of circle. Flashing every 0.5 s.
	Acknowledged, Not rectified	Yellow-orange circle with black exclamation point in center of circle.
	Not acknowledged, Rectified	Yellow-orange circle with black check mark in center of circle. Lights 3 s, off 1 s, repeat.
<b>Alert priority: Caution</b>		
	Caution	Steadily displayed yellow square with black exclamation point in center of square.