

User Chart Objects, AIS Aids-to-Navigation

User Chart Objects (symbols, lines, areas, texts) can be edited at all CHARTPILOT and MULTIPILOT units. The data are stored redundantly on these units through the automatic data distribution.

The line type **Own Safety Line** and the area type **Danger High-light** are also registered by the chart monitoring. This makes the chart monitoring also possible when raster charts are used.

AIS Aids-to-Navigation are symbols for which the data are received via the AIS.


User Chart Objects and AIS Aids-to-Navigation can be displayed on all CHARTPILOT and MULTIPILOT units and all radar indicators, also together with all chart types available there.

Switching the display of the User Chart Objects on/off: In the **Chart** menu within the frame **User Chart Objects**, using the button **Visible**.

With **Converted Map Objects**, it is possible to set whether User Chart Objects that have been generated through conversion of the (Radar 9xxx) maps are displayed.

Switching the display of the AIS Aids-to-Navigation on/off: In the menu **Radar/AIS**.

Event Markers, Position Fixes

Setting an event marker : In the menu **Chart > Events**, click on the button **Drop Event** or press the function key **F5**. If the marker is not to be set at the own position, click on the **Pick** button and then at the event position in the chart. (**Adding a remark about the event:** Directly enter the text in the field **Remark** or click on **Select**, mark the remark and confirm with **OK**.) Set the marker with **OK**.


Editing/deleting remarks that can be called up with Select: In the menu **Chart > Events**, click on the button **Edit Remarks List**. Enter the remark in the input field and click on **Add**, or mark the remark in the list and click on **Delete**.

Switching the display on/off: The markers are always displayed. In the **Chart** menu, the button **Text Labels** can be used for, amongst other things, switching the display of remarks on/off.

Deleting event markers: In the menu **Chart > Events**, mark the markers in the list and click on **Delete**.


Centering the chart area on an event marker: In the menu **Chart > Events**, mark the markers in the list and click on **Show in Chart**.

This switches to the Planning display mode.

Position fixes : Similar to event markers, but in the menu **Chart > Position Fixes**. Instead of the remark, the method of position determination must be selected under **Position Fixing Method**.

Own Ship Display, Past Plots

Unless stated otherwise, all settings are made in the **Presentation** menu.

Own ship symbol : is switched on/off with the **Symbol** button. Long line of the symbol = heading. The ship-shaped symbol that appears in small range settings is displayed true to scale and in the forward direction.

Heading line, stern line: Switch on/off in the menu **Radar/AIS**.

Course and speed vector: Switch on/off with the button **Vector Length**. Set the displayed **time period** with the sliding controller located below the button. Both settings also apply to the vectors of the target symbols. **Vector symbol:** One arrow-head for motion relative to the water (WT); two arrow-heads for motion over ground (BT). The vector is not displayed if the vectors of the targets are shown relative.

Path prediction: Switch on/off with the button **Prediction**. Set the **prediction time period** with the sliding controller located below the button.

Path prediction is only displayed in the small range settings.

Past Plots

The past plot shows historical data for the own ship on the basis of the selected position sensor. The 2nd past plot shows historical data for the own ship on the basis of the 2nd position sensor; see **Part 1**, page 3, **Navigation Data**.

Setting the length of both plots: Jointly, by means of the sliding controller below **2nd Past Position**.

Setting the intervals of the time labels for both plots: Jointly, with the sliding controller below **Time Labels**.

Switching the display of both plots on/off: Separately, with the buttons **Past Position** and **2nd Past Position**.

Switching the recording and display of the time labels on/off: Jointly, with the button **Time Labels**.




Displaying Pre-planned Tracks

Pre-planned tracks are defined by geographical waypoint coordinates. This is best done at a CHARTPILOT, but they can also be edited at all radar indicators. All tracks existing in the system are available at all indicators after they are stored. Pre-planned tracks are displayed in **orange**.

Calling up track(s) for display: In the menu **Tracks > Load**, first mark the corresponding catalog, mark the tracks, then click on **OK**.

Switching on the display of the waypoint numbers and the courses: In the menu **Chart**, do not select **None** for **Text Labels**.

Switching off the display of tracks: In the menu **Tracks > Clear**, mark the tracks, then click on **Clear**.

Display of the track/waypoint data: In the data displays **Track/Control** , **Track/Schedule** , **Conning** .



Setting the ARPA and AIS Target Symbols

Unless stated otherwise, all settings are made in the menu **Radar/AIS > Targets**.

Switching the display of the target vectors on/off, and setting the vector length: Jointly with the course and speed vector of the own ship symbols; see also that section.

Switching the display of the past plots on/off: With the button **Past Positions**.

Specifying the length of the past plots: With the sliding controller **Past Position Length**.

Displaying the vectors and past plots relative to the own ship or in true motion: In the menu **Presentation > Display Mode** or in the context menu **Vector Display**  (click on the display  with MORE).

Switching the display of the target markers on/off: With the button **Target IDs**.

Selecting AIS target markers: With the buttons **Call Sign AIS** and **Ship's Name AIS**.

ARPA Targets

Unless stated otherwise, all settings are made in the menu **Radar/AIS > Targets**.

Specifying the radar indicator from which the ARPA targets are taken for display: Within the frame **ARPA Targets from**.

The indicator number is entered in the header of the System Maintenance Manager of the corresponding radar indicator; see Operating Instructions of the radar.

CHARTPILOT without AIS operation: The frame is called **Targets from**; from the selected radar indicator, the AIS targets being tracked there are also taken over.

Switching the display of the ARPA targets on/off: With the button **ARPA Targets from** or in the context menu **ARPA Targets**  (click on the display  with MORE); for CHARTPILOT without AIS operation, this also switches the display of the AIS targets on/off.

AIS Targets



CHARTPILOT with AIS operation:

Unless stated otherwise, all settings are made in the menu **Radar/AIS > Targets**.


Switching the display and processing of the AIS target data by the CHARTPILOT on/off: With the button **AIS Targets**.

CAUTION: When the display is switched off, there is no danger calculation and no automatic target acquisition of the AIS targets at the CHARTPILOT!

Switching the display of the sleeping (AIS) targets on/off: With the button **Sleeping Targets**.

Manual acquisition of AIS targets: In the menu **Radar/AIS > Targets**, click on the button **Acquire Target**, and then click on the sleeping target (symbol ) (also several in succession). Clicked sleeping targets are tracked as AIS targets (symbol ). The function is deactivated when the cursor leaves the chart area.

Automatic AIS target acquisition by means of danger calculation: For a sleeping target with danger calculation switched on, as soon as the TCPA and CPA values become less than permitted minimum, the **DANGEROUS AIS TGT** alarm appears, and target is tracked. **Setting the TCPA/CPA values:** In the menu **Alarm Settings**. **Switching the danger calculation on/off:** In the menu **Alarm Settings with Auto AIS Target Acq**.

AIS targets drawn with dashed lines are not acquired automatically. **Loss of AIS target:** If a tracked AIS target is lost, the **LOST AIS TARGET** alarm appears and the target symbol changes to a flashing .

Deleting AIS targets: In the menu **Radar/AIS > Targets**, click on the button **Cancel Target**, and then click on the AIS target(s). The deleting function is deactivated when the cursor leaves the chart area. **Deleting all AIS targets:** In the menu **Radar/AIS > Targets**, click on the button **Cancel All Targets**.

On being deleted, AIS targets become sleeping targets.

CHARTPILOT without AIS operation:

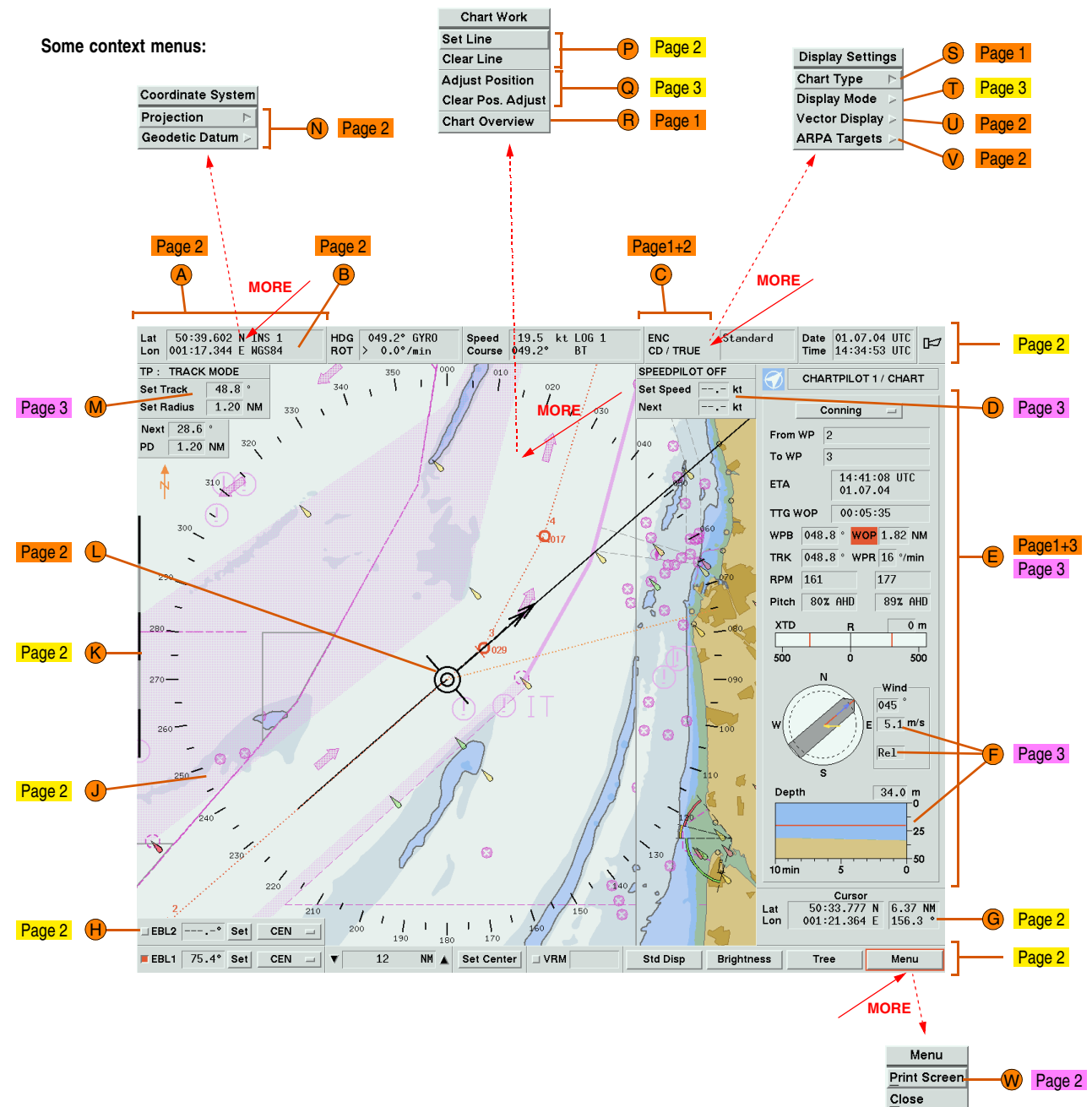
The radar selected for the transfer of the ARPA targets (see ARPA Targets) also transfers the tracked AIS targets and, if applicable, the alarms **DANGEROUS TGT** and **LOST TARGET**. The settings at the CHARTPILOT are made jointly for AIS and ARPA targets.

Trial Manoeuvres




Switching on the trial manoeuvre display: In the menu **Radar/AIS**. After clicking of **Trial Manoeuvre**, relative target vectors are switched on and past plots are switched off. A large flashing **T** is shown to indicate that the display is a trial manoeuvre.

Setting the trial manoeuvre: In the **Trial Manoeuvre** box, enter the simulated evasion course, the speed after the manoeuvre and the time delay until the manoeuvre begins.

Switching off the trial manoeuvre display: In the **Trial Manoeuvre** box, click on the **Cancel** button.




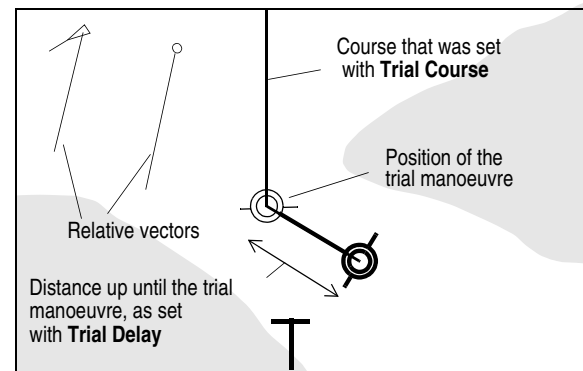
Coordinate System

It is possible to choose between several projections and geodetic datums. **Display of the current setting:**  (for the Mercator projection, the projection is not indicated). The **selection** is made in the menu **Presentation > Coordinate System** (conclude with **Apply**) or in the context menu  of the position data field .

WARNING: When using vector charts for navigation, always select **WGS84** for the geodetic datum.

Selecting the Standard Setting of the Chart

Rapid switching to the basic setting: With the button **Std Disp**  (alternatively with the function key **F8**), the chart is displayed with a pre-defined basic setting, irrespective of the present settings.



Settings for the Vector Chart and the Chart Objects

Selecting the objects to be displayed

Category (coarse selection): In the **Chart** menu, use the **Category** button to select one of the standardized categories (**Base**, **Standard**, **All**) of the display groups. If necessary, add or remove individual display groups by clicking in the menu **Chart > Visibility Options > Visibility Groups**, and confirm with **OK**.

➔ After the removal or adding of display groups, a – or + is shown additionally on the **Category** button.

Switching the display of the texts off or setting the number: In the **Chart** menu with the **Text Labels** button.

Also show objects only intended for charts with a larger scale: In the menu **Chart > Visibility Options**, switch on the function **Ignore Scale Minimum**.

Only show objects for the time set for them in the chart data: In the menu **Chart > Visibility Options**, set the button **Objects depending on Date to Within Effective Dates**.

Defining the form and type of presentation

Form of the symbols: In the menu **Chart > Visibility Options**, with the **Symbols** button.

Showing the symbols of special area objects: In the menu **Chart > Visibility Options**, click on the **Areas** button and choose **Symbolized**.

Marking of objects of the chart type ENC that were changed by official updates: In the menu **Chart > Visibility Options**, with the button **Highlight Official Updates** (**Last** = only mark the objects that changed with the last update).

Marking of objects for which additional information is available in the Info box: In the menu **Chart > Visibility Options**, switch on the **Extra Info Symbol** function.

Showing the sectors and ranges of the lights: In the menu **Chart > Visibility Options**, switch on the **Full Length Light Sector** function.

Showing the light descriptions: Only if the display of texts is switched on: In the menu **Chart > Visibility Options** with **Light Descriptions**.

Showing isolated dangers situated in the shallow water: In the menu **Chart > Visibility Options** with **Shallow Water Dangers**.

Marking non-navigable areas with a grid pattern: In the menu **Chart > Visibility Options**, switch on the **Shallow Water Pattern** function.

Defining the presentation of the depth areas and contour

The settings are made in the menu **Chart > Depth Contour** by entering the values in the appropriate fields.

The **safety contour** denotes the boundary between the navigable and non-navigable areas.

➔ The correct setting of the safety contour is particularly important because it forms a basis for chart monitoring.

If in the menu **Chart > Depth Contour** the **Depth Shades** button is set to **Four**, the non-navigable area is divided by the **shallow contour** and the navigable area by the **deep contour** into two different-coloured areas in each case.

Depth values contained in the chart that are less than the **safety depth** are marked in a prominent way.

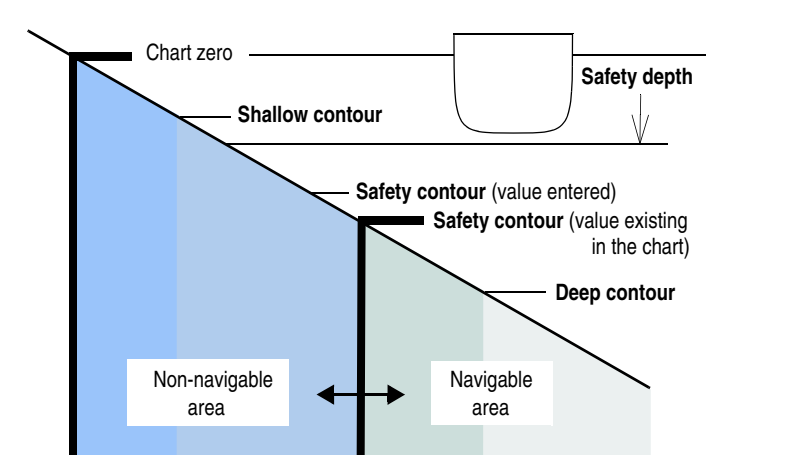
Depth values contained in the chart that are less than the **safety depth** are marked in a prominent way.

Showing the depth values of the contour lines: In the menu **Chart > Depth Contour** with **Contour Labels**.

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Vector / Raster Chart, Selection of the Type

In the case of **vector charts**, the objects (symbols, areas, lines, texts) are stored individually in electronic form, together with their geographical positions and the associated information. At the CHARTPILOT, CHARTRADAR and MULTIPLOT, the vector chart types **ENC** (official charts issued by the national hydrographic organizations), **CM-93/2** and **CM-93/3Pro** (issued by the company C-MAP) and **Own Chart** (created at the CHARTPILOT) can be used.

Raster charts are paper charts that have been scanned; here the program recognizes no objects, only the colour values of the individual pixels. At the CHARTPILOT and MULTIPLOT, raster charts of the type **ARCS** (issued by UKHO) can be used.

Only those chart types are available for which the CHARTPILOT was configured and for which the data and, if necessary, the licences/permits are present in the database of the CHARTPILOT; see **Part 4**.

Selecting the chart type: In the menu **Chart** within the frame **Chart Settings** with the button **Type**, or in the context menu **Chart Type** (click on the display **C** with **MORE**).

➔ Raster charts are chosen with **ARCS**, vector charts with all other types.

Switching the display of the chart on/off: In the **Chart** menu with **Chart Visible**.

Settings of the Raster Charts

The settings are made in the menu **Chart > Raster Chart Options**.

Marking the chart regions which are not active: If the **Shade Non-Active Areas** function is switched on in the case of a chart which has several regions (e.g. harbour plans), then the regions which currently do not contain the own ship are shaded.

Marking the chart regions that have changed through an update with black squares: Switch on the **Updated Chart Regions** function.

Automatically selecting the chart with the largest scale: Switch on the **Auto Scale** function.

The criterion for this in the Planning display mode is the centre of the chart area, and in the Monitoring display mode the area immediately ahead of the own ship.

Marking the chart regions that have changed through an update with black squares: Switch on the **Updated Chart Regions** function.

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Overview Display of the Raster Chart

If **Chart Overview** (Ⓜ) is clicked in the context menu of the chart area, the entire selected raster chart is shown, with the cursor position at the top left of the chart.

The dashed orange frame indicates the chart excerpt shown previously.

Shifting the chart excerpt: Only in Planning display mode: Click in the overall chart, position the frame that is then shown, click again.

Marking the chart regions that have changed through an update with black squares: Switch on the **Updated Chart Regions** function.

AIS Functions

Displaying the received safety messages: Reception is signalled through the alarm **NEW SAFETY MESSAGE**. In the menu **Radar/AIS > Read Message**, the messages received last are listed first, followed by those received earlier. Other messages can be displayed by marking them in the list.

Sending a message: Open the menu **Radar/AIS > Send Message**. Choose either **Broadcast** (to all) or **Addressed** (to a particular addressee). For **Addressed**: either enter the MMSI of the addressee or click on **Addressed to Target**, then click on the target in the chart area. Under **Message Type**, select the message (**User Message 1...5** are the last own messages generated under this name). The message is displayed below and can be altered. Transmit the message by clicking on **Send**.

Updating the transmitted own ship data: Enter new data in the menu **Radar/AIS > Voyage Data**.

Showing all transmitted own ship data: In the Info box on the index card **Targets**.

Long-range interrogations and AIS channel settings: See the Operating Instructions.

Data Maintenance, Data Backup

Chart data: see **Part 4**, page 1 and 2

Pre-planned Tracks

All actions take effect on all hard disk drives of the system:

Generating a catalog: In the menu **Tracks > Store**, enter a new name in the field **Selected Catalog**, click on **OK**.

Assigning a track file to a different catalog: Load the track for display and then store it in a different catalog.

Deleting a track file: In the menu **Tracks > Delete**, mark the catalog and then the track, and click on the button **Delete**.

Deleting a catalog: First delete all the files it contains or assign them to other catalogs, then mark the catalog in the menu **Tracks > Delete**, click on the button **Delete**.

Saving track files on diskette:

1. Insert the diskette into the drive.
2. Via the tree, open the menu **Backup/Restore**, there select the **Track (T)**, in the frame **Transfer Direction** the Function **From Hard Disk**, and in the frame **Diskette Format** the function **Backup Diskette**.
3. In the selection menu located in the chart area, enter the files to be backed up into the list **Selected Files** (**Add Catalogs** enters all files of the marked catalogs, **Add Files** only the files of the marked catalog that were marked under **Files**; catalog assignments are also stored).
4. In the menu **Backup/Restore**, click on the **Transfer** button, and answer the safeguard question with **Yes**. The transfer is complete when **Backup finished** appears in the **Transfer** dialog box.

Sending track files by e-mail:

1. Open the file for editing and back it up in the catalog **Import/Export**. Repeat this for all tracks to be transferred.
2. As described above, store the files of the catalog **Import/Export** to diskette; use a diskette formatted for DOS, and in step 2 select the function **DOS formatted Diskette**.
3. Load the files onto the PC and send them by e-mail.

Restoring track files (saved previously or received by e-mail) to hard disk: See the Operating Instructions.

User Chart Objects, Events, Position Fixes

Saving data to diskette: As for track files, but in step 2, instead of the function **Track (T)**, select the objects to be saved in the frame **User Objects**.

Voyage Recordings

Saving data to diskette: Via the tree, open the menu **Voyage Recording > File**, click on the **Backup** button, and continue as for track files with steps 1, 3 and 4.

System Parameterization

The settings of the CHARTPILOTS, TRACKPILOT, SPEEDPILOT and the AIS system that were performed at the service level can be **determined, printed out and saved to diskette**:

In the tree under **Utilities**, click on **System Maintenance > Configuration > View**. Under **Devices**, mark the desired components or use **Select all** to mark all components. After clicking of **OK**, the parameter are displayed. These data can be printed out with **Print**, and saved to a diskette (inserted beforehand) with **Backup**.

Determining the Software Version

The software version of the CHARTPILOT is displayed briefly when the CHARTPILOT is switched on. However, it can also be determined during normal operation: In the tree under **Utilities**, click on **System Maintenance > Version**. The software versions of the system components are displayed. The software version of the CHARTPILOT is displayed in the line **Product**: after the type of the CHARTPILOT (before **BUILD**).

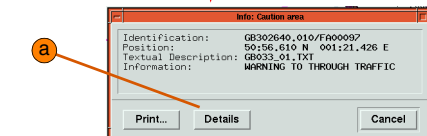
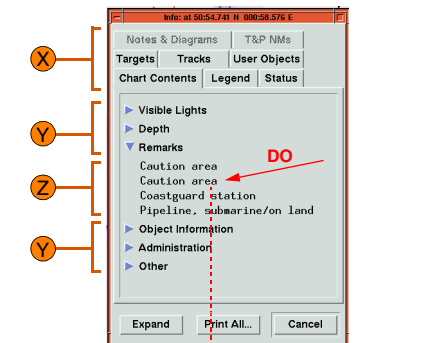
Info Box

The Info box can be used to obtain a display of the data for the displayed chart, the User Chart Objects, AIS Aids-to-Navigation, event markers, position fixes, tracks, ARPA and AIS targets, own AIS data, for vector charts the data of all objects they contain, for raster charts the notes and diagrams printed out there, as well as the Notices to Mariners issued by the UKHO.

Opening the Info box: Using the INFO key, click on the position for which the information is needed.

➔ The clicked position is marked by a circle.

Selecting data for the display: The Info box lists information for all the objects that are located at the clicked position (even if they are not displayed). Select the index card **X**, info group **Y** and object **Z** in sequence by clicking. The data box which then opens contains the data of the clicked object. If available, the button **Details** (a) can be used to display further details.



Performing Nautical Calculations

In the tree (of the Conning mode, if applicable), click on **Calculator**. With the buttons located there, menus can be called up for various calculations (for operating of these menus and further details, see the Operating Instructions):

Reckoning: Position-reckoning calculation

Rendezvous: Calculating the rendezvous point of two ships

Measured Mile: Support for the measured mile run

Sunrise & Sunset: Determining the data for sunrises and sunsets

Current Sailing: Solving current-sailing problems

Altitude & Azimuth: Determining the altitude and azimuth of fixed stars.

Generating the Pilot Card

In the tree (of the Conning mode, if applicable), click on **Pilot Card**. The Pilot Card is then shown.

Data correction, depending on the available sensors:

Draught, Displacement: In the menu **Pilot Card**, click on the button **Draughts**, correct the values for **Draught fore** and **Draught aft**, click on **Apply** (**Displacement** and **Draught midship** are calculated). After click **OK**, enter your name to log the changes.

➔ The draught values can also be entered at the MULTIPLOT (system-wide equalization)

Data of the nautical checklist: In the menu **Pilot Card**, click on the button **Nautical Checklist**, correct the values, after clicking on **OK** enter your name to log the change.

Printing the pilot card: In the menu **Pilot Card** with the button **Print**.