FT NavVision®

Navigation Manual

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3. Tables

Geen gegevens voor lijst met afbeeldingen gevonden.

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4. References

Not applicable.

5. Introduction

FT NavVision® has a separate viewer for navigational purposes. It comes with a map combined with several NMEA data and AIS and autopilot as optional issues. This manual is to give you a brief introduction of the viewer.

6. Safety instructions

:

This section provides only a summary of the most important safety requirements and notes, which will be mentioned in the individual sections. To protect your health and prevent damage to the devices, it is essential to read and carefully follow the safety instructions.

The indications NOTE, CAUTION and WARNING have the following significance:

NOTE:
An operating procedure, practice or condition etc., which it is essential to emphasize.

CAUTION

An operating procedure, practise or condition etc., which, if not strictly observed, may damage or destroy equipment.

WARNING

An operating procedure, practise or condition etc., which, if not carefully observed may result in personal injury or loss of life.

7. Revision history

Revisions issued since publication.

Issue	Date	Revision	Reason
1.0	January 29, 2013		initial release

8. Navigation

8.1 World (viewer)

Figure 8-1: World button (typical)

Once the button *"World"* (World viewer) on the taskbar (see Figure 8-1) is clicked, a global chart is shown, including all active charts that are present on your system and imported into FT NavVision®. In addition, two extra buttons appear on the taskbar i.e.:

- World instruments
- World tools

Once selected, there are four (4) toolbars shown on the right-hand side of the screen. If you wish to change a toolbar, simply click on the arrow right of the toolbar's label. A pull down menu will appear, from which you can select the desired toolbar. Activate the desired toolbar by simply clicking on it. If you prefer full screen navigation than de-click the button once again. A total screen will be available for navigation.

:Via a keypad it is possible to use the zoom-in and zoom-out functions.

Cursor

The cursor can be moved all over the chart/screen and has multiple functions:

1. To zoom in and out (via keyboard - ALT + O and ALT + I)
2. To point at a position
3. To show additional information as available in the C-map charts

4. To be used to open windows
5. To setup waypoints and routes.

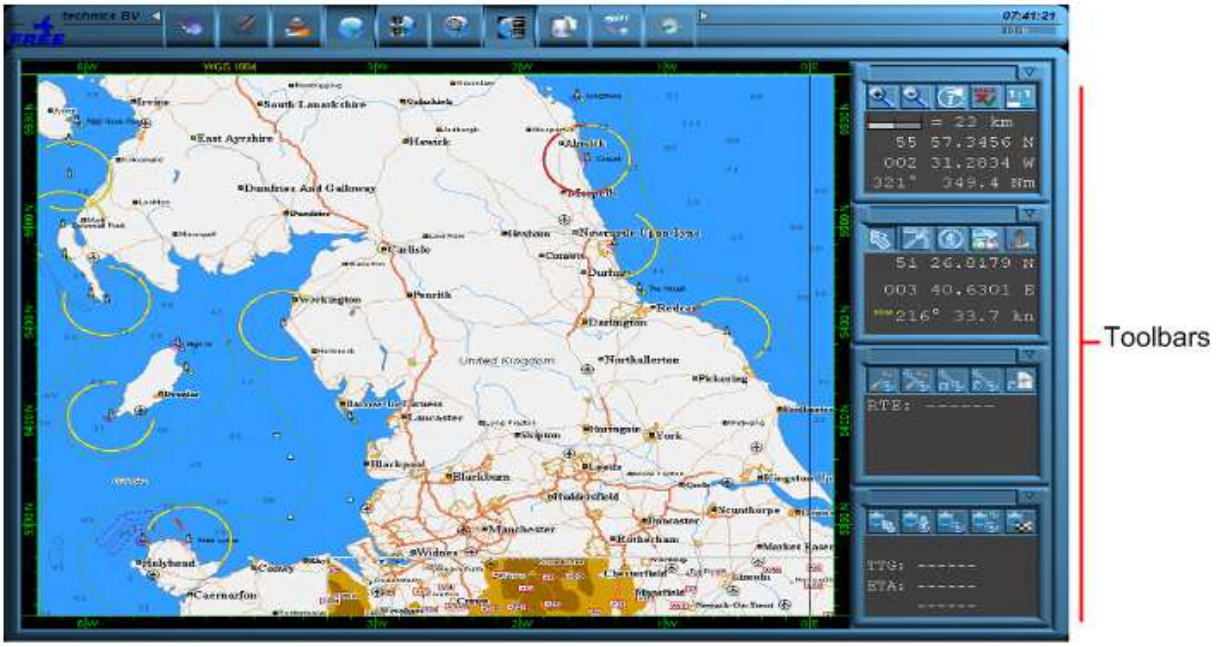

Figure 8-2: World button and toolbars (typical)

The World viewer comes with the following toolbars:

- Zoom
- GPS data
- GPS waypoint
- Waypoints
- Autopilot
- ETA
- Tools
- Track

8.2 Toolbar Zoom

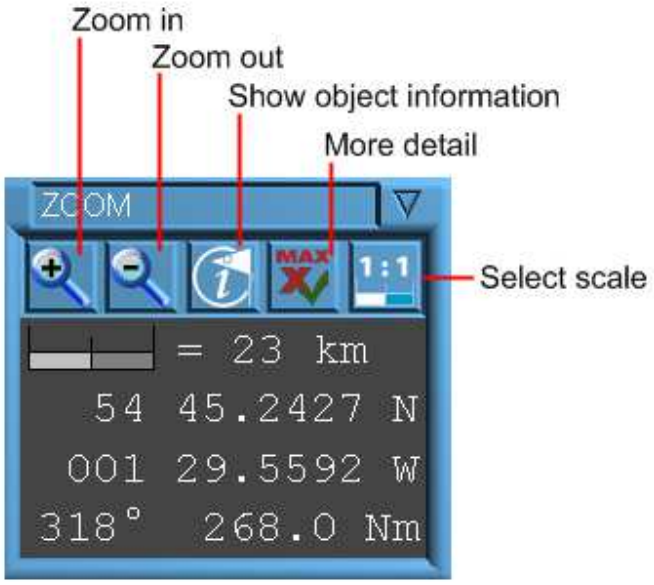

Figure 8-3: Toolbar zoom (typical)

The toolbar *"Zoom"* (see Figure 8-3) supports quicker and easier movement across the World viewer. The buttons are arranged as follows:

Zoom in

Use this button to step in the chart of the World viewer in single steps. Each click on the button performs a zoom.

Zoom out

This button does the opposite of the *"Zoom in"* button, but its use is the same. Each click on the button lets you step out, giving a wider overview.

Show item information

The *"Show item information"* button (see Figure 8-4) has the following functions:

1. Move the cursor over an object; short information will be shown in the window zoom.
2. Click on any chart object, symbol or area to display the data of the concerning item or area (see Figure 8-5). This data includes information such as: navigation lights, piloting info, yacht clubs and marinas, current streams, depths, hazard/warning areas, marine parks, fishing grounds, Points-of-Interest (POI) etc.
   The item information appears when moving the cursor on the particular chart object.
3. When clicked on e.g. a photo camera on the chart, the concerning photo with relevant information is shown (i.e. harbour entrance or other objects).

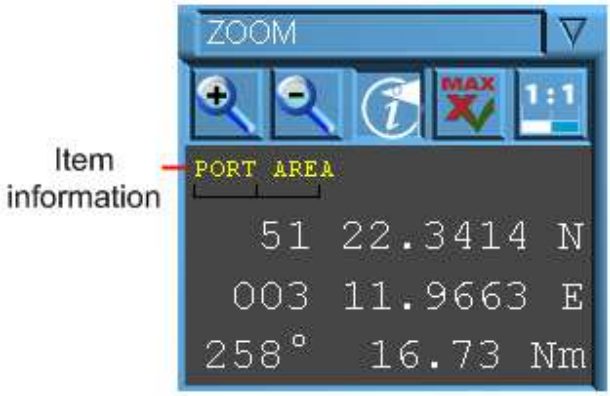

Figure 8-4: Item information

There is a vast amount of data embedded into the C-Map charts. Cartographic, nautical or POI (Points-of-Interest) symbols drawn on the chart are the *"Gateway"* to the embedded data.
For example, full port/marina details are displayed by clicking on the marina chart symbol (see Figure 8-5).

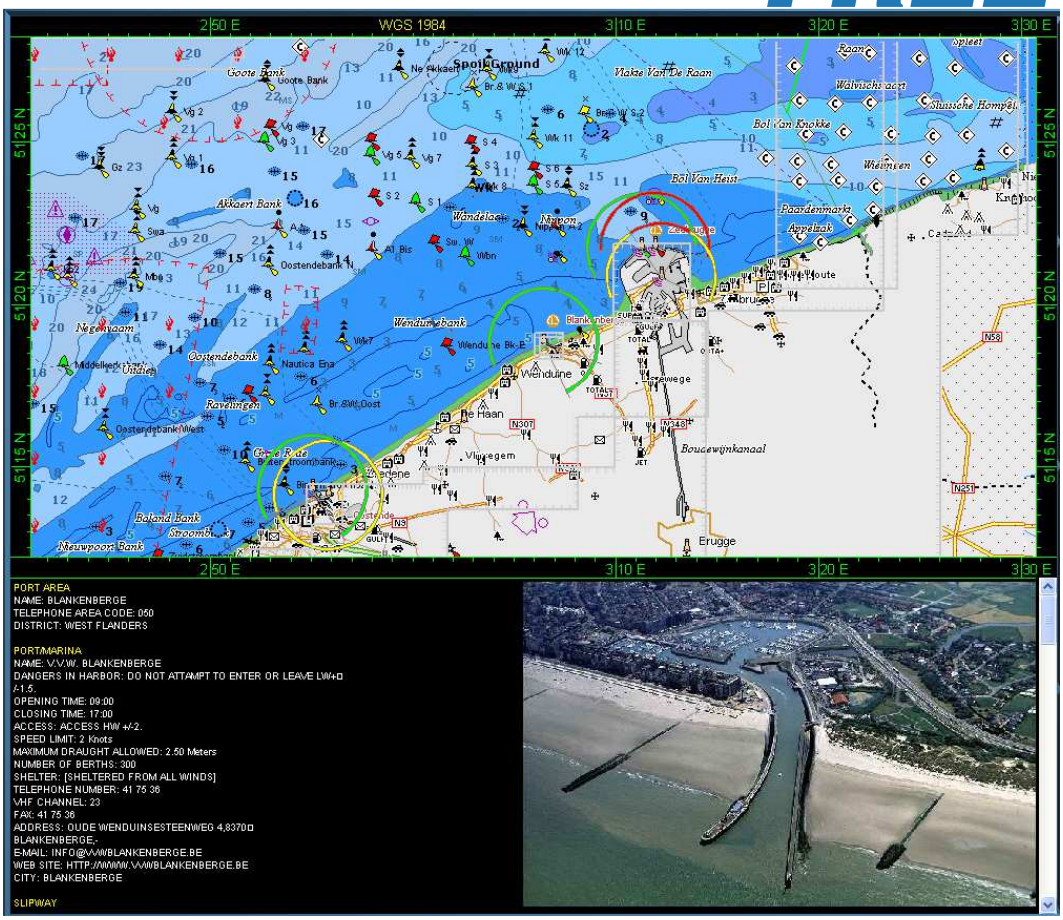

Figure 8-5: Port area information (typical)

More detail[1]

Use this button to change the degree of chart detail. By clicking the button you activate the display of additional detail on the charts. A second click de-activates the additional detail.

Select scale

Use this button to select the desired chart scale into predefined steps. Click on the button to activate a pull down menu. Click on one of the scales you wish to have on screen. Clicking on the item World, the whole world will be shown on the screen.

[1] Active by default

8.3 Toolbar GPS data

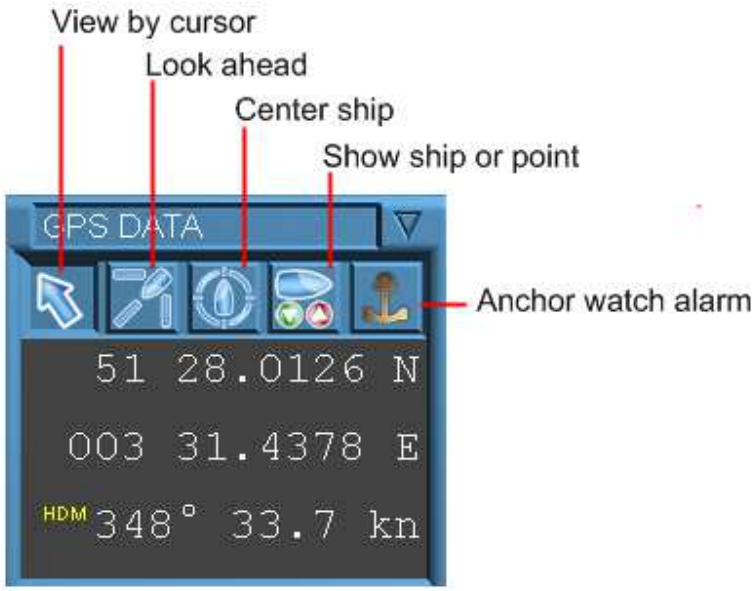

Figure 8-6: Toolbar GPS (typical)

View by cursor

With the *"View by cursor"* button (see Figure 8-6), the chart can be moved freely in every direction. The cursor has the following functions:

1. To move the chart to the left:
   Go to the right chart edge, click and hold the left mouse button. To move to other directions, use the other chart edges (zoom out by clicking).
2. Move the chart by mouse click: click with the left cursor on a point of the chart. This point becomes the center of the screen.
3. Move the chart by mouse click and zoom out: click on a point on the chart with the right mouse button. That point will be the center of the chart and the chart will be zoomed out (one default step).
4. Zoom in by mouse: left click and hold on a point of the chart, move the mouse diagonally over the screen to form a square. If the mouse button is released, that square will be nearly full screen.

NOTE:
Following the procedure above may put the vessel out of sight.

Look ahead

The *"Look ahead"* button (see Figure 8-6) when enabled shows what is ahead of the vessel. The vessel shown on the chart can be positioned in eight (8) directions. This allows you to anticipate on unforeseen situations.

:Take into consideration that the zoom function is based on the above mentioned situation.

Center ship
The *"Center ship"* button (see Figure 8-6) is used to centre the ship's position.

NOTE:
Take into consideration that the zoom function is based on the above mentioned situation (vessel remains on the centre of the screen).

Show ship or point
The "Show ship or point" button (see Figure 8-6) is used to set a number of preferences. The following settings are possible:

Setting	Description
Ship	
Off	Ship's position is indicated as a cross (necessary to use when operating in an area where many other ships are active)
On (default)	Ship's position is indicated in the shape of a vessel.
Perpendicular line	
Off	Perpendicular line is switched off (not visible)
On (default)	To set the length of the heading line to be time-dependent, as well as enable or disable the crosshairs.
Heading line	
Off	Heading line switched off (not visible)
Time dependent	The line extending in the direction of a heading can be set to time-dependent. The time to be set indicates the time of arrival at the far end of the heading line (between OFF and max. 3 hrs).
Range rings	
Off (default)	Range rings switched off (not visible)
Distance dependent	The *"Range rings"* setting shows a set of concentric circles (4x) labelled by distance from the central. Range rings set to 0.2 NM[2] = labelled distances of 0.2 NM.

[2] NM = Nautical Mile

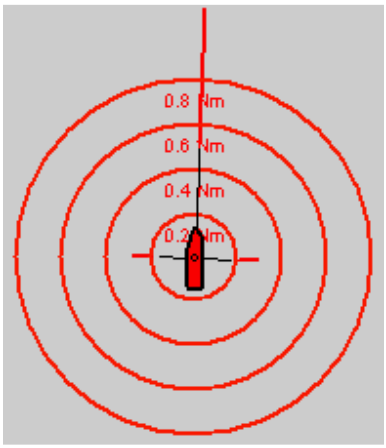

Figure 8-7: Range rings set at 0.2 NM (typical)

Anchor watch alarm

This facility (see Figure 8-6) attempts to offer automatic warning of the observing vessel. If a known stationary target (chain mark) is acquired and designated as such then an *"Anchor alarm"* (see Figure 8-8) will be activated if the designated target moves more than a preset distance from the marked position. If the stationary target appears to move, then it must be due to the observing vessel dragging her anchor.

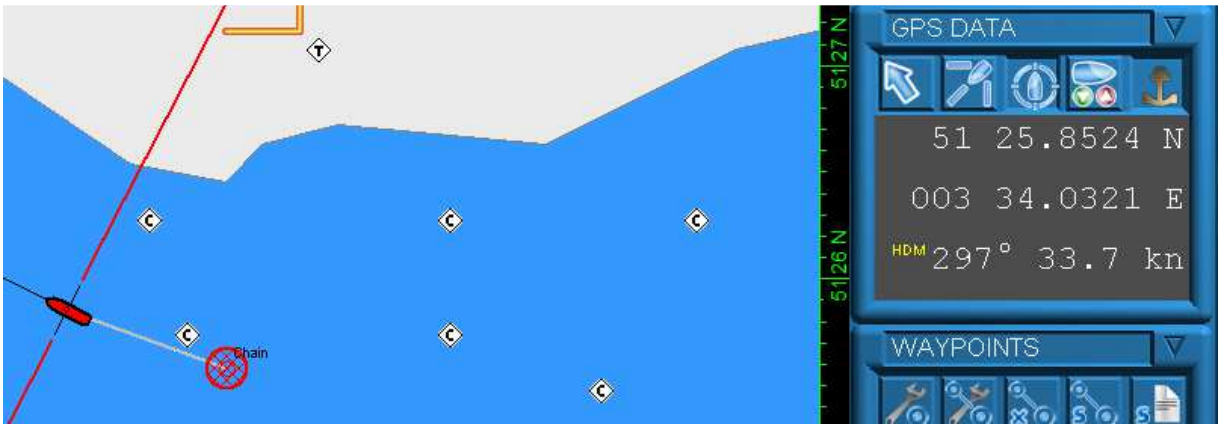

Figure 8-8: Anchor watch alarm

8.4 Toolbar Waypoints

The *"Waypoints"* toolbar (see Figure 8-9) in FT NavVision® is a tool for placing a waypoint directly on the chart surface. Select the *"Edit waypoints"* button on the *"Waypoints"* toolbar to enable the waypoint mode. Waypoints placed onto the chart are directly stored into a waypoint file. Individual or groups of waypoints can be saved to their own file for grouping purposes.

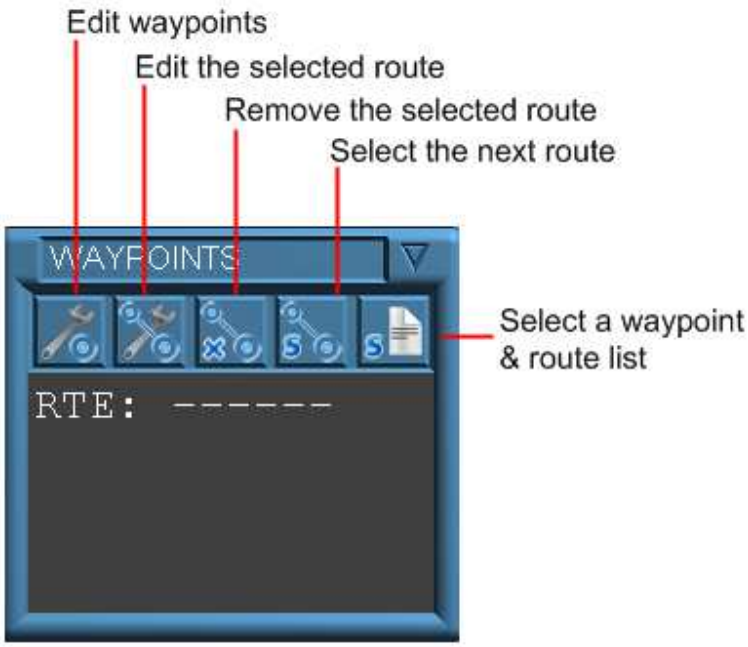

Figure 8-9: Toolbar waypoints (typical)

8.4.1 Edit waypoints

Detail	Description
Add waypoint	Select the *"Edit waypoint"* button, left-click on the chart to place a waypoint at that position.
Delete waypoint	Select the *"Edit waypoint"* button, right-click on the waypoint you wish to delete.
Move waypoint	An existing waypoint can be repositioned easily. Select the *"Edit waypoint"* button, left-click and hold a specific waypoint to drag the waypoint to a new location.

8.4.2 Edit the selected route

Detail	Description
Add waypoint in route	Select the *"Edit the selected route"* button (see Figure 8-9), click the left mouse button, and touch the waypoint of your choice being the first in the route incl. all others of your choice.
Move a waypoint in a route	Right click the mouse button on the waypoint to be moved and hold. Then move the cursor to a point on the chart you wish to.
Remove waypoint in route	Within a route, waypoints cannot be removed without the use of the *"Waypoint tool"* (see Figure 8-10). However waypoints on screen, not used in one of the routes can be simply removed, by means of right clicking the particular waypoint.
Remove all waypoints in route	Select the *"Remove the selected route"* button to delete the selected route. Once deleted the route data will also be deleted in the *"Waypoint tool"*.

Figure 8-10: Waypoint tool

8.4.3 Remove the selected route

The *"Remove the selected route"* button (see Figure 8-9) allows you to remove the current route. Once a route is set, click this button to remove the selected route.

NOTE:
Removing an active route is not possible.

8.4.4 Select the next route

Within a waypoint group it is possible to have more than one route to be selected. The *"Select the next route"* button (see Figure 8-9) is used to display the number, comments or description of a waypoint. By repeatedly clicking this button, you cycle through the waypoint's number, first comment, second comment or description, provided these are entered in the waypoint manager.

8.4.5 Select a waypoint & route list

Clicking the *"Select a waypoint & route list"* button (see Figure 8-9) activates a previously created waypoint or route list (see Figure 8-11). Simply click on the waypoint or route list. The autopilot will then steer the vessel towards this waypoint or route list setting. If you wish to de-activate any of these settings, click the button once more.

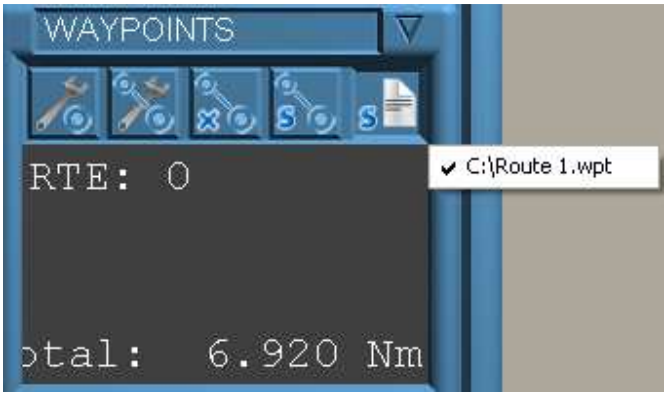

Figure 8-11: Route list (typical)

8.5 Waypoint tool

Clicking the *"Waypoint tool"* (WPT) button (see Figure 8-12) opens the *"Waypoint manager"*.

The *"Waypoint manager"* is based on a database where waypoints can be stored. The *"Waypoint manager"* automatically detects the GPS's you may have installed[3]. In this way, it is virtually impossible to send incorrect data to the GPS.

The *"Waypoint manager"* creates the possibility to transfer waypoints between GPS's without conflicts.

FT NavVision® features several GPS-presets, based on brand and GPS type. If your GPS does not appear in the list, you might try to use the *"Unknown GPS"* option by using the *"Select GPS"* button.

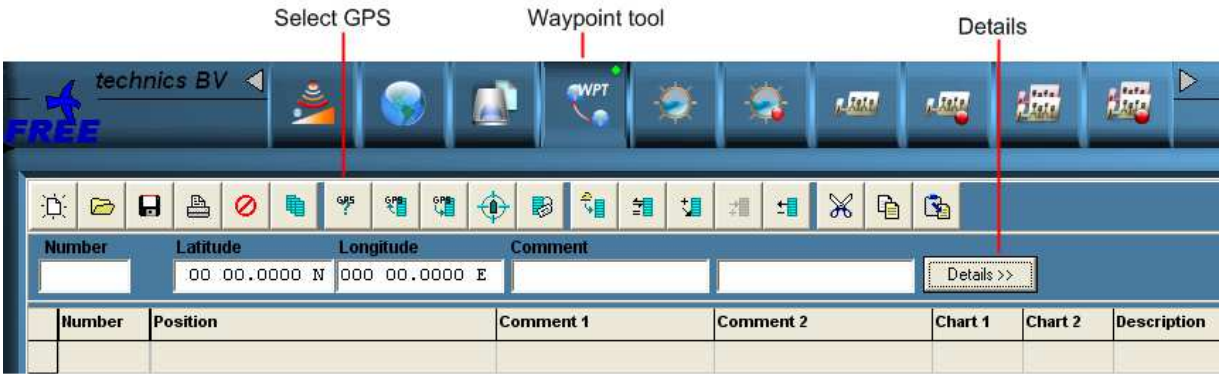

Figure 8-12: Waypoint tool

[3] Depending on the GPS receiver, the maximum length can either be 10 or 11 characters. When no GPS is specified, the limit of 11 characters is used.

As already mentioned, you are able to transfer waypoints between GPS's, using the computer as a relay station. Data that is unnecessary or unsuited for the receiving GPS is left out.
When you collect data from a GPS, it can always be supplemented by additional data. This combination can then be sent to the GPS in question, or any other GPS. It's also possible to print all GPS-data.

When a variety of data is used (i.e. uppercase, lowercase or both) and the GPS can not handle this data properly, FT NavVision® rewrites the data (i.e. text), to enable the receiving GPS to correctly interpret the text properly.

The wishes of wreck divers/fishermen have also been taken into account. A specific area (under *"Details>>"*) has been reserved for this matter. This enables you to easily store and find relevant information about the wrecks.

8.6 Waypoint manager toolbar

The toolbar buttons of the *"Waypoint manager"* refer to the various functions and tools for waypoint management.

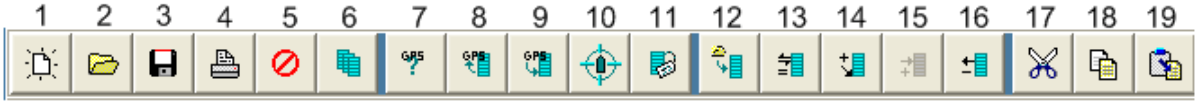

Figure 8-13: Toolbar

8.6.1 Waypoint manager toolbar functions

- Create a new file (1)
  Create a new waypoint list
- Open a file (2)
  Open an existing waypoint list
- Save (3)
  Save waypoint list
- Print waypoint data (4) (see 8.6.4)
  Print waypoint list and wreck data
- Close (5)
  Close active waypoint list
- Select list (6)
  Select an already opened waypoint list
- Select GPS (7)
  Select used GPS
- Send (8) (see 8.6.6)
  Transmit active waypoint list to GPS
- Receive (9) (see 8.6.7)
  Receive waypoints from GPS and place them in the waypoint list
- Detect current position (10) (see 8.7)
  Determine exact position using the GPS

- Properties (11) (see)
  Save the properties of the waypoint list
- Append (12)
  When clicked, you can select a file where to read the waypoint data from. The data from this file will be appended to the current list. When waypoints with the same name (number) are available, the method of appending depends on the settings made in the *"Properties"* window, selectable on the waypoint tool taskbar.
- Modify (13)
  Modify selected waypoint with the data from the input fields (see Figure 8-14) and numerically sort the waypoint list again. If waypoint already exists it will be overwritten.
- Add (14)
  Add a waypoint with the data from the input fields to the waypoint list. If waypoint number already exists it will be overwritten.
- Insert (15)
  Insert a waypoint with the data from the input fields in the waypoint list and numerically sort the waypoints again. Will only work when *"Renumber waypoints automatically"* (see 8.7.1) is enabled.
- Delete (16)
  Remove selected waypoint(s) from the waypoint list.
- Cut (17)
  Remove data from the input fields
- Copy (18)
  Place selected data on clipboard
- Paste (19)
  Add data from clipboard.

8.6.2 Waypoint input fields

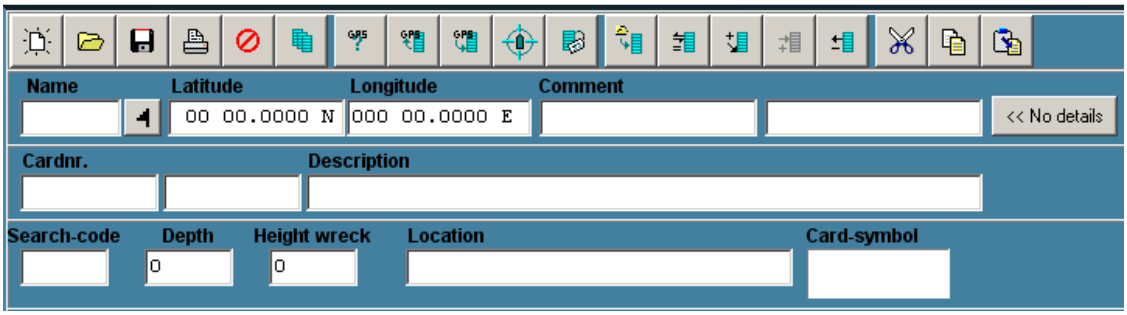

Figure 8-14: Waypoint input fields (typical)

Input-fields are divided into two groups: *"Waypoint data"* and *"Wreck data"* (see Figure 8-14). Waypoint data is made up of the *"Name"*, *"Latitude"* and *"Longitude"* (position), *"Comment"*, *"Cardnr."* and *"Description"*.
Wreck data is made up of a *"Search-code"*, *"Depth"*, *"Height wreck"*, *"Location"* and *"Card-symbol"*. To view the wreck data, click the *"Detail"* button. To hide the data, click

the *"No Detail"* button.
The waypoint list is shown in a matrix directly below the toolbar. The list can be edited as follows:

Detail	Description
Change column width	Place the left mouse pointer on the line between two columns. The pointer will change to a double-headed arrow. Click with the left mouse button and drag the double-headed arrow to the right to widen the column or to the left to make it narrower. Follow these same steps to change the width of other columns.
Remove multiple waypoints	• Click and hold the left mouse pointer on a waypoint cell then drag the mouse over a block of waypoints. Use the *"Delete"*-button to delete the block of waypoints. • Use the arrow keys, while simultaneously holding the shift-key to select an entire block of waypoints. Use the Delete-button to delete the block of waypoints.
Copy and paste multiple waypoints	• Click and hold the left mouse pointer on a waypoint cell then drag the mouse over a block of waypoints. Use buttons (18 and 19, Figure 8-13) to copy/paste the entire block • Use the arrow keys, while simultaneously holding the shift-key to select an entire block of waypoints. Via the copy and paste icons
Edit a waypoint	Click on the waypoint with the left mouse pointer. The data belonging to this waypoint is then loaded into the input-fields, where you can edit them to suit your needs, using the *"Edit"*, *"Add"* and *"Insert"* functions. Using the scrollbars, you can move across the waypoint list both horizontally and vertically.

8.6.3 Edit waypoint list

Waypoint-files can be opened or saved using the *"Open"* (2, Figure 8-13), *"Add"* (14) or *"Save"* (3) functions. Waypoint-files have a *".WPT"* extension.
Additionally, you can import and export *"Comma Separated Values"* (CSV) files. The only rule a CSV-file has to comply with is that its first line holds the columns' names. Accepted column names are:

- Name = waypoint-number
- Latitude = latitudinal position
- Longitude = longitudinal position
- Comment 1 = primary GPS-comment (limited number of characters allowed)
- Comment 2 = secondary GPS-comment (limited number of characters allowed)
- Cardnr. =
- Description = description of waypoint (limited number of characters allowed)

- Search-code = search code for wrecks
- Depth = depth of the wreck
- Height wreck = altitude of waypoint or wreck
- Chart 1 = primary chart holding the waypoint
- Chart 2 = secondary chart holding the waypoint
- Location = description of wreck's location
- Symbol = symbol (0 – 9)

8.6.4 Print waypoint list

By clicking on the *"Print"* button (4, Figure 8-15) a print preview of the waypoint-list is shown. Using the Page Up and Page Down buttons on your keyboard various pages can be viewed. Waypoint-lists can be printed in two separate ways. At the bottom-left of the screen you can choose between a print-out of the position-data or wreck-data. Upon selection of either one, the correct list is immediately shown as preview.
To obtain a better view, you can zoom in and out using the zoom-buttons. The zoom range is between 30% and 100%.
When the print-preview is as you want it to be, simply click on the *"Print"* button to pull up the Print dialogue-box. To close the window, press OK.

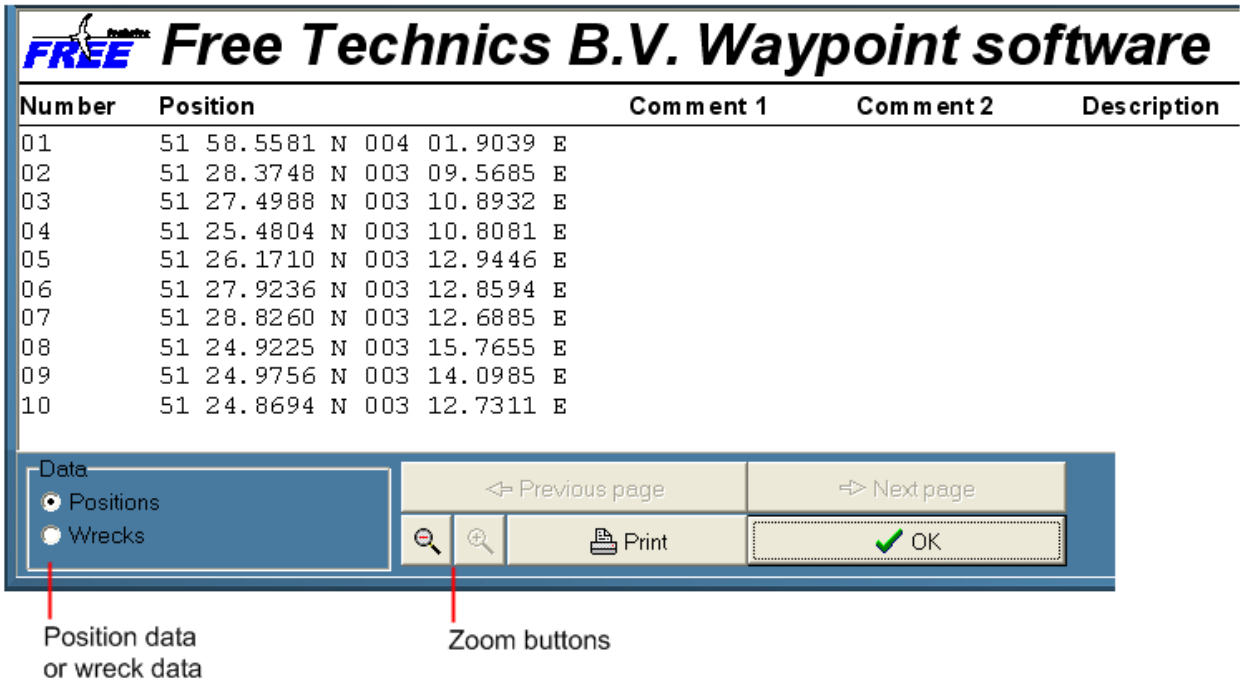

Figure 8-15: Print preview (typical)

8.6.5 Sending and receiving waypoints

Please note that the data input and data output of an MLR GPS should be set to *"Waypoints"*.

:MLR FX 312 and MLR FX 412 models need to have data input set to NMEA183 and data output to "Waypoints + RTES".

A small terminal window shows information about the communication with the GPS. Received and sent waypoints are automatically shown in this window.

8.6.6 Sending waypoints to a GPS

Click on the *"Send"* button (8, Figure 8-13) to select a GPS, simultaneously a *"Warning communication"* menu appears. After having checked your GPS connection, press OK.

Via the *"Sending waypoints"* menu (see Figure 8-16) select whether to send all waypoint to the GPS, or just a selection. When you choose a selection, you need to define the waypoints to be sent. It is also possible to have the route information to be sent as well. Click the *"To GPS"* button in order to send the waypoints.

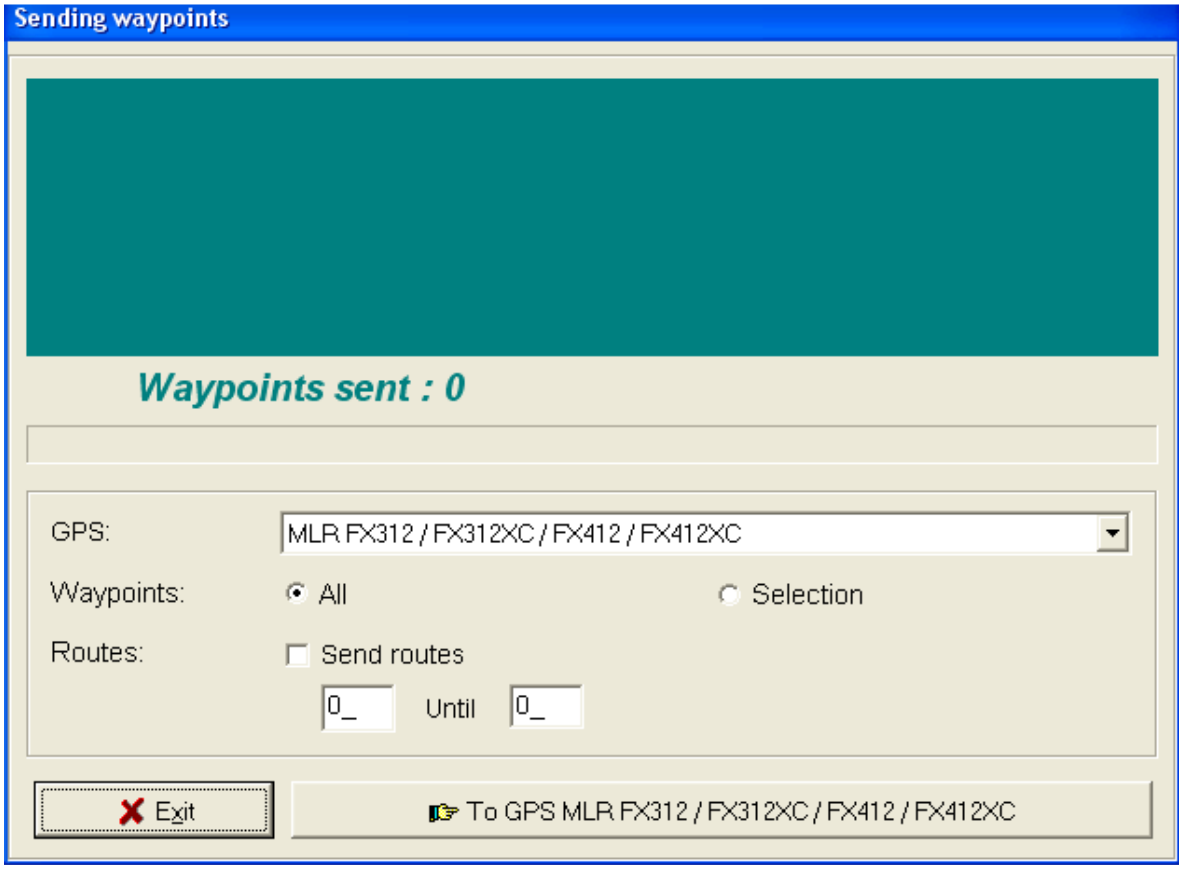

Figure 8-16: Sending waypoints (typical)

8.6.7 Receiving waypoints from a GPS

Click on the *"Receive"* button (9, Figure 8-9) to select a GPS, simultaneously a *"Warning communication"* menu appears. After having checked your GPS connection, press OK. Once the correct GPS is selected, the *"Receive from GPS"* button (see Figure 8-17) turns active. Upon clicking this button, the received waypoints will be added to the active waypoint-list.

You can now enter whether or not waypoint with the same number should be overwritten or not. To do this, simply check or uncheck the *"Overwrite existing waypoints"* checkbox. Also, you can enter whether or not to receive routes as well. Click the *"Receive from GPS"* button in order to receive waypoints.

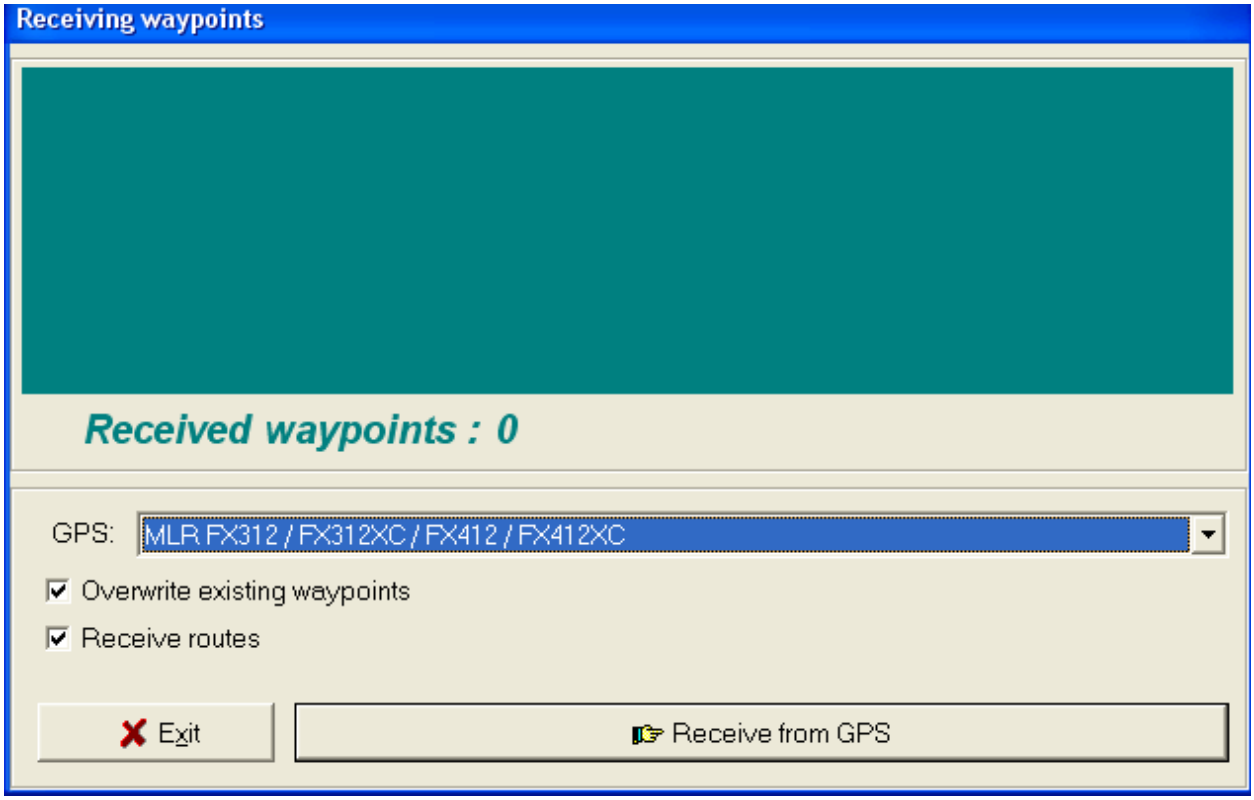

Figure 8-17: Receiving waypoints (typical)

8.7 Accurate position acquirement

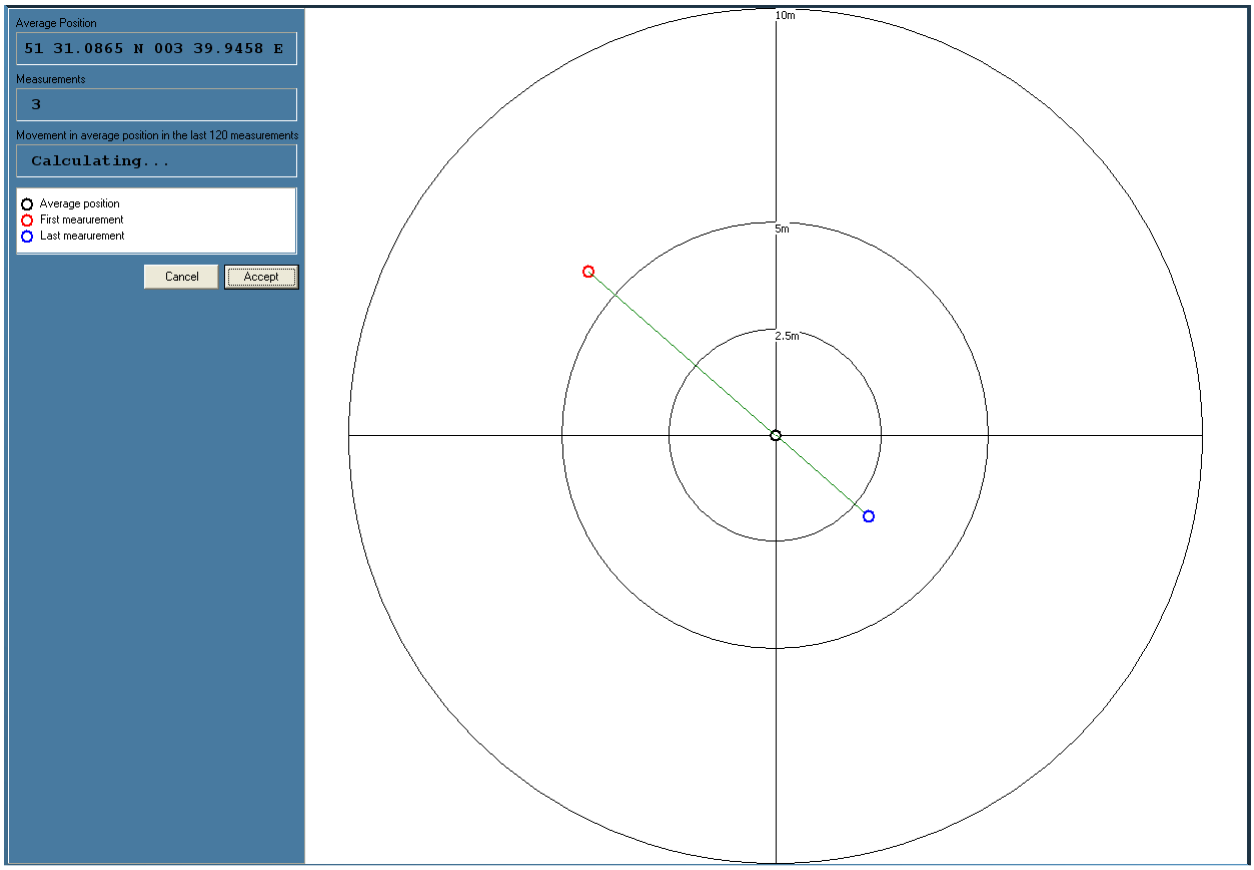

Figure 8-18: Detect current position (typical)

Via the *"Detect current position"* button (10, Figure 8-13) an accurate position-readout can be acquired. When the position is shown correctly, simply click *"Accept"*. To close the window, click the *"Cancel"* button.

8.7.1 Properties waypoint list

The waypoint list's properties can be set using the *"Properties"* button (11, Figure 8-13). The following options can be set:

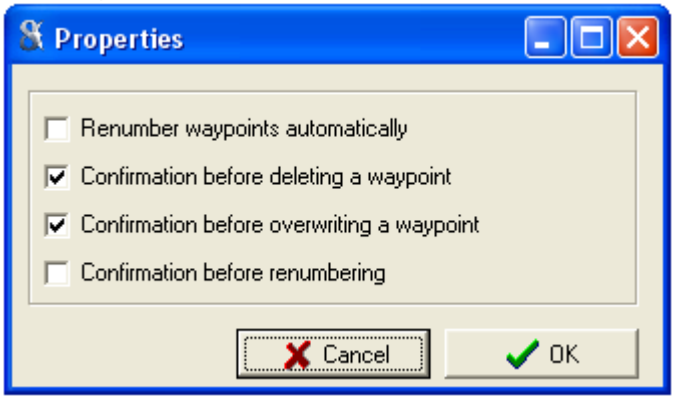

Figure 8-19: Properties (typical)

- **Renumber waypoints automatically**
  Waypoints are automatically numbered, starting with 0. When a waypoint is removed or inserted, the waypoint list is renumbered. This means waypoints do NOT have a fixed number.
- **Confirmation before deleting a waypoint**
  Ask for confirmation before actually deleting a waypoint.
- **Confirmation before overwriting a waypoint**
  Ask for confirmation before overwriting a waypoint with the same number.
- **Confirmation before renumbering**
  Ask for confirmation before a waypoint is assigned a new number upon waypoint list renumbering.

Configure as needed, and click OK.

8.7.2 Cut, copy and paste waypoints

Cutting, copying or pasting (17, 18, 19, Figure 8-13) waypoints (or data) is useful when a specific item is used more than once in the same waypoint list.
Enter the recurring data once, select it by using your mouse pointer and choose *"Cut"* or *"Copy"*. The *"Cut"* function removes the selected items and places these on the clipboard. The *"Copy"* function does the same, but does not remove the data. In both cases, the *"Paste"* function places the previously selected data on the spot you choose.

8.8 Toolbar Autopilot

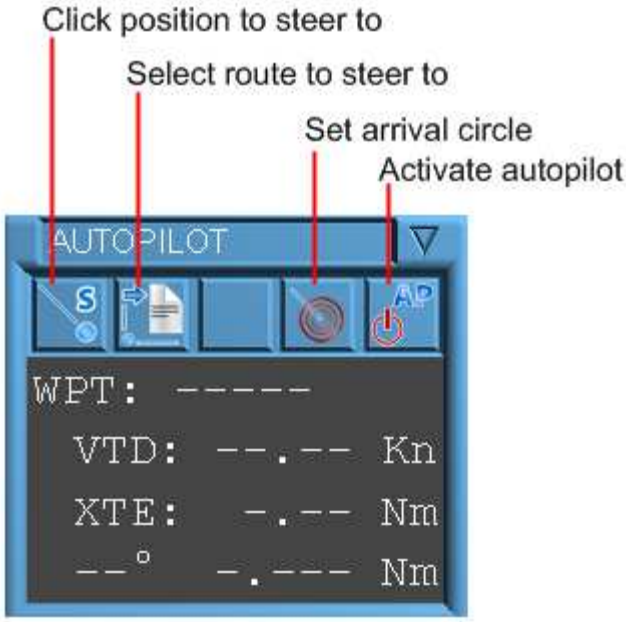

Figure 8-20: Toolbar autopilot

The toolbar *"Autopilot[4]"* is used to control the autopilot, and to sail the route you want. The buttons are arranged as follows:

[4] WPT = waypoint / VTD = velocity to destination / XTE = cross track error

8.8.1 Click position to steer to

This is the simplest function of this toolbar. A click on the *"Click position to steer to"* button (see Figure 8-20) followed by a click on the charts creates a temporary waypoint AP0001 (see Figure 8-21), and selects it for the autopilot.
A green line denotes the route to be sailed. It is good practice to check the route for any low depths or other hazards before activating the autopilot by clicking the *"Activate Autopilot"* button.
When the *"Activate Autopilot"* button is clicked, the autopilot will start sailing towards the selected waypoint.

:This only works when the autopilot is set to "Track" mode.

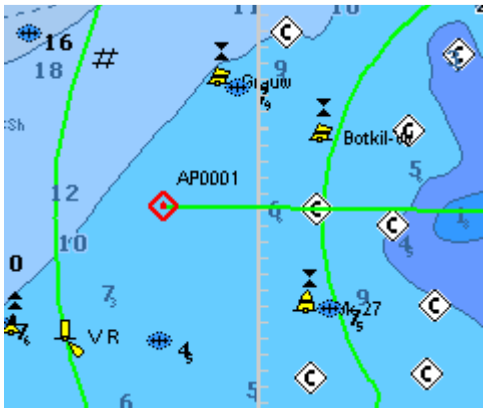

Figure 8-21: Temporary waypoint (typical)

8.8.2 Select route to steer to

The *"Select route to steer to"* button (see Figure 8-20) is used to direct the autopilot to a selected waypoint. Click the button, and then click on any one of the present waypoints. A new, temporary waypoint with the name of the selected waypoint is created and selected for the autopilot.
A green line denotes the route to be sailed. It is good practice to check the route for low depths or other hazards before activating the autopilot by clicking the *"Activate Autopilot"* button.
When the *"Activate Autopilot"* button is clicked, the autopilot will start sailing towards the selected waypoint (see Figure 8-22).

:This only works when the autopilot is set to "Track" mode.

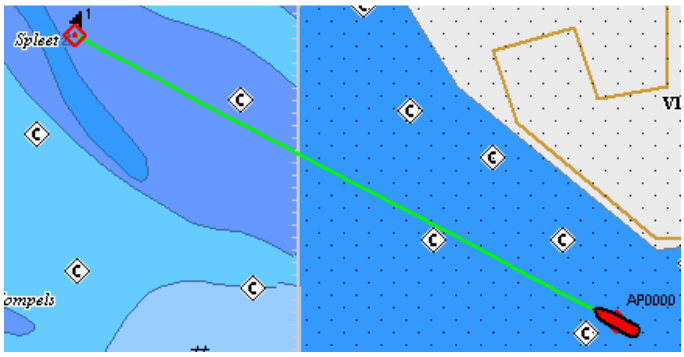

Figure 8-22: Select route to steer to (typical)

8.8.3 Set arrival circle

The arrival circle within you should pass a waypoint can be selected using the *"Set arrival circle"* button (see Figure 8-20). An arrival radius of between 0.05 NM - 2.00 NM (92 m - 3704 m) can be selected. The circle has a default radius of 0.25 NM (456 m). A green circle around the vessel (see Figure 8-23) denotes the arrival circle's radius. The circle turns red when the autopilot is activated. When the arrival-circle overlaps with the next waypoint (see Figure 8-24), the circle is filled with either a green pattern (autopilot off) or a red pattern (autopilot on).

Also, you can switch the arrival-circle off with the *"off"* option. In this case, the route must pass the next waypoint through the middle of it.

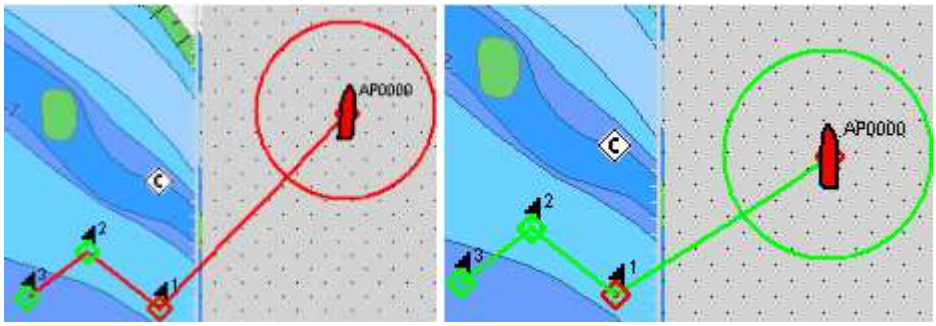

Figure 8-23: Arrival circle – green/red (with and without autopilot on)

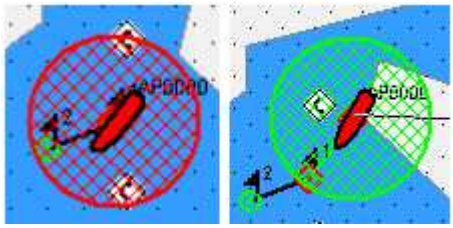

Figure 8-24: Arrival circle (overlap with next waypoint)

8.8.4 Activate autopilot

A green line denotes the route to be sailed. It is good practice to check the route for any low depths or other hazards before activating the autopilot by clicking the *"Activate Autopilot"* button (see Figure 8-20). When the *"Activate Autopilot"* button is clicked, the autopilot will start sailing towards the selected route.

:This only works when the autopilot is set to "Track" mode.

When the route is made up of more than one waypoint, the autopilot will automatically switch to the next waypoint. Stop the autopilot by simply clicking the *"Activate Autopilot"* button again.

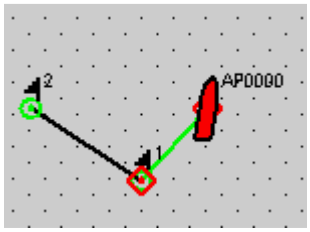

Figure 8-25: Activate autopilot (typical)

8.9 Toolbar ETA

The Estimated Time of Arrival (ETA) is the approximate hour at which a vessel is expected to reach a particular location (time needed to travel from the present position to a chosen position).

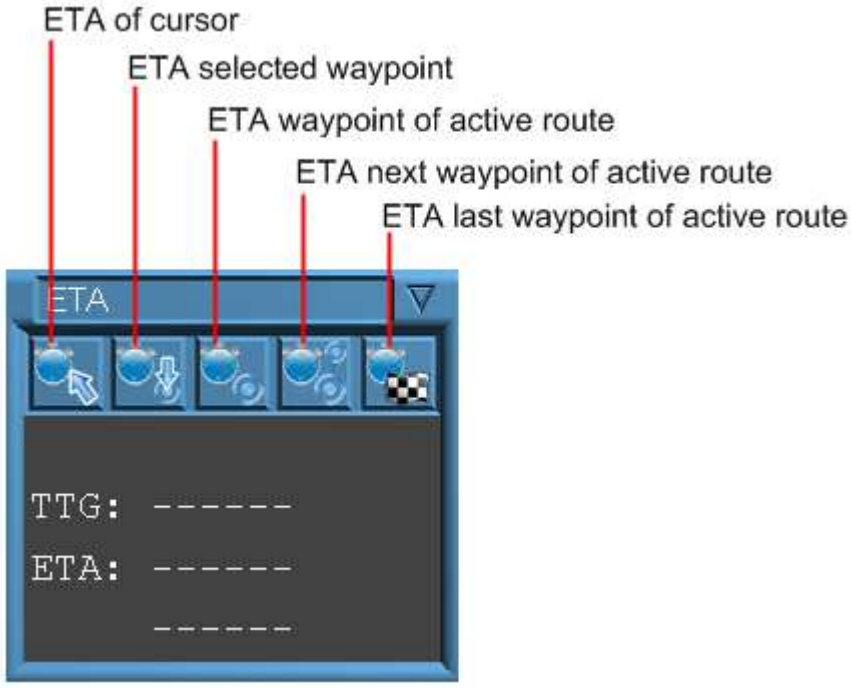

Figure 8-26: Toolbar ETA

8.9.1 ETA of cursor
Estimated arrival time at the cursor position.

8.9.2 ETA selected waypoint
Estimated arrival time at the selected waypoint.

8.9.3 ETA waypoint of active route
Estimated arrival time at the waypoint of active route.

8.9.4 ETA next waypoint of active route
Estimated arrival time at the next waypoint (of active route).

8.9.5 ETA last waypoint of active route
Estimated arrival time at the last waypoint (of active route).

8.10 Toolbar Tools

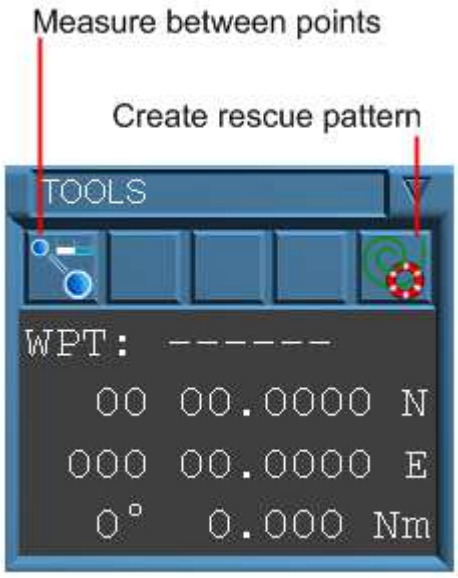

Figure 8-27: Toolbar tools

This toolbar (see Figure 8-27) can be used to perform calculations with the World viewer. This toolbar has less functionality than the others, namely the following:

8.10.1 Measure between points
First, activate measurement by clicking the *"Measure between points"* button (see Figure 8-27). The next click on the chart defines the first point for measurement. Next, click on another point on the chart to define the second point for measurement.
The waypoint number and its coordinates are shown in the toolbar's information frame. Distance and heading between the two other points are shown as well.

Every other point that is selected (clicked), shows the direction to a particular point last clicked, together with the total distance between all clicked points.
Click the *"Measure between points"* button again to deactivate the measurement.

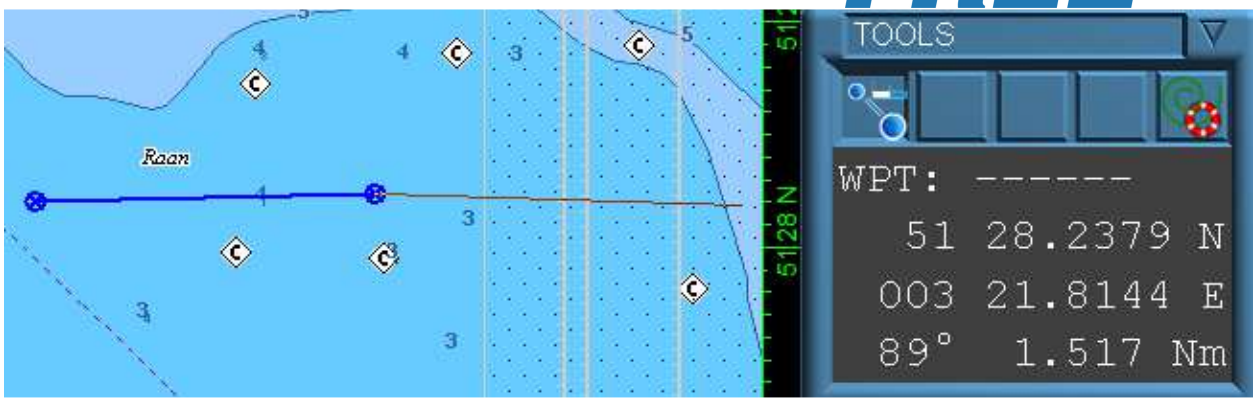

Figure 8-28: Measure distance between waypoints (typical)

8.10.2 Create rescue pattern (optional)

The *"Create rescue pattern"* button (see Figure 8-27) is used to create a rescue pattern in order to search for a missing person. The following options are available:
Start position:

- GPS
- Cursor

Select the relevant interval between circles (see Figure 8-29) and/or click on the fields *"Drift course"* and *"Drift speed"* to set the appropriate setting (see Figure 8-30).

Figure 8-29: Interval between circles

Figure 8-30: Set drift course and speed

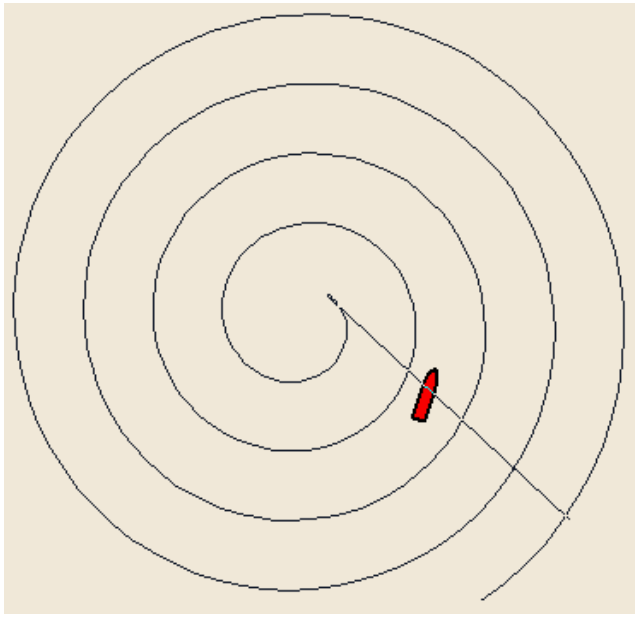

Figure 8-31: Interval between circles

8.11 Toolbar Track

FT NavVision® has the possibility to save and display tracks. To do this, select the button *"World"* > *"World Tools"* (see chapter 8.1), and go to toolbar *"Track"* (see Figure 8-32). The track information is shown as a yellow line on the chart.

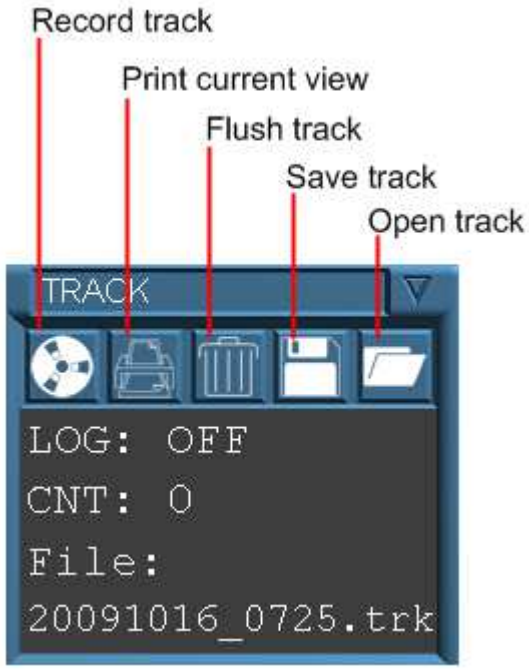

Figure 8-32: Toolbar track

The toolbar *"Track"* comprises of five buttons.

8.11.1 Record track

When activated a sample with the current position is recorded every five seconds.

8.11.2 Print current view

Print current view (chart) with track information.

8.11.3 Flush track

Delete all samples in the current file.

8.11.4 Save track

Save a track. When selected, a popup window will show requesting the filename for the track samples to be saved to.

8.11.5 Open track

Open a previously recorded track. This facilitates route information taken in the past.

8.12 AIS (optional)

When an AIS receiver is connected, the data can be shown on the map. You will see all the ships that are sending data as green ships on the map (see).

To see specific information on a ship just click it with your mouse. In the right pane the AIS-window will appear with all relevant information. If you want to close the data-window, just click with your mouse in the AIS-window to make it disappear.

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