TP Swiss Sea License
Version 4.0

Users Guide

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Contents

1 Introduction

TP Permis Mer Suisse is software to help prepare for the Permis Mer exam published by ScanNav, with the participation of André Néméta for the Permis Hauturier Français version, and Richard Jaquemet (Nautischool) for adaptation to the specificities of the Swiss Sea License. It is distributed in Switzerland by the company Nautischool, the original version "TP Permis Hauturier" being distributed in France by the Vagnon network.

The TP Permis Mer uses the technological base of the complete ScanNav navigation software and therefore takes up the fundamentals in terms of ergonomics.

The practical work normally carried out with the protractor rule is easily checked on the SHOM card n° FR6966 present on the screen, the manipulations are carried out using the mouse and the keyboard. A simulator provides dynamic visualization.

This software provides assistance both to instructors as a teaching tool and to students to practice calculating headings and routes and generally operations carried out on the map in order to prepare for the Sea License exam.

It partly meets the requirements of the " **Ordinance on the Swiss certificate of competence for driving yachts at sea** " allowing:

- Reading the nautical chart (the map can be used with its frames and cartridge)
- To make a point from bearings or bearings
- To identify lighthouses and other characteristic points
- To calculate a heading or a route taking into account the deviation of the compass, the magnetic declination of the location, the drift due to the wind, and the currents.
- To visualize the relationships between the surface route (Rs), the current (Ct) and the bottom route (Rf).

2 legal information

The FR6966 card included was scanned from SHOM card n° 6966 (INT 1706), reproduction authorization n°45/2009.

PLEASE NOTE: this map, intended exclusively for exercises, is not kept up to date and should not be used for navigation.

No guarantee is given that ***TP Permis Mer Suisse*** is error-free or meets your needs. Despite the fact that everything has been done to avoid it, it is possible to encounter some bugs or inconsistencies. However, if you report your problems or requests for changes to us, we will study a solution to remedy them.

3 Commissioning _

3.1   Required configuration

TP Permis Mer Suisse works on any PC configuration with Windows ® from XP to the latest versions (Windows 11 to date). Since version 4.0, PCs running Linux and Macs are also supported by first installing the Wine tool. See more details on the document available online at the following link: Wine_Installation.pdf

A mouse with a wheel is recommended but not obligatory.

3.2   Installation and licensing

IMPORTANT: the product number necessary for registering the license was provided to you by email if you ordered online, or is written on the box in the CD-ROM case (ID number) **if** you acquired it on physical media.

The software must be activated with this code, otherwise it will be in demo mode.

Refer to the installation guide describing the complete software installation and activation procedure.

As the software and accompanying documentation are updated periodically, it is recommended to check whether a more recent version is available on the ScanNav website (http://www.scannav.com).

You can check the version number as well as the correct registration of the software via the "Help? » →"About TP Permis Mer Suisse":

The link at the bottom left of this window allows you to check if a newer version is available.
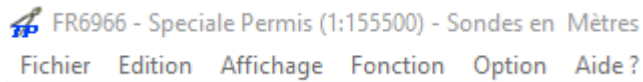
NOTE: You can have a friend try the software on their computer without having to register it. To do this, simply install it from the CD-ROM without registering the license. The software will run in demonstration mode for a period of one month, with some restrictions (all features are active).

4   Reference of menus and tools

This chapter briefly describes the entries in each menu, associating the toolbar button where applicable. When a keyboard shortcut is available for the function, it is indicated to the right of the menu.

4.1   General layout of the toolbar

The different tools are accessible from the top menu bar:

FR6966 - Speciale Permis (1:155500) - Sondes en Mètres

Fichier   Edition   Affichage   Fonction   Option   Aide ?

Or from the buttons on the icon bar:

The toolbar can be configured by right-clicking on it to bring up a context menu

4.1.1 Icon size

You can adapt the size of the menu bar buttons, allowing for better readability, particularly on tablets and other Ultra High Definition screens. Use the " **Button Size** " entry from the context menu, the following window appears. Initial settings depend on your screen resolution.

Taille des boutons Taille des Icones ———[ ]————— 24 Marges Horizontales ——[ ]——————— 15 Marges Verticales ——[ ]——————— 11 Epaisseur bordures ——[ ]————————— 2 ☐ Boutons en relief ☐ Couleur boutons actifs [ ] [Appliquer à tous] [Valeurs par défaut] [Fermer]	The displayed values are indicated in pixels. - Icon size: Move the slider to the right to enlarge the icons. - Horizontal and vertical margins: increases the space around the icons, without enlarging the latter. Allows you to enlarge the size of the buttons, keeping the icon at its original size. - Border Thickness: Allows you to configure the thickness of the borders of pressed buttons to better distinguish them.

- Raised buttons: By default the toolbars have a "flat" appearance (no relief between each icon). Check this box to regain the "buttons" appearance of the toolbar as it was in previous versions.

- Active button color: Allows you to assign a different color to the background of pressed buttons in order to distinguish them even better.

- Default values: allows you to return to the default values configured during installation. These values depend on the screen resolution, in order to offer adapted parameters according to your configuration.

- Apply to all: allows you to apply the current settings to all toolbars, for a consistent appearance, which avoids having to make the settings for each toolbar independently.

Preferences " entry in the "Options" menu to configure the size of the dialogs.

4.1.2 Interface configuration

The toolbar can be placed wherever you want, on one of the four edges of the screen, or as an independent window. Thus, each user can place the tools at their convenience. Use the " **Move toolbar** " entry from the context menu, or click on the edge of it (anywhere except in a button) with the left mouse button to move it where you want. It will automatically place itself horizontally or vertically, depending on whether you move it to a horizontal or vertical edge of the window.

Since version 4.0, toolbars are memorized by screen configuration. You can therefore have a different configuration in portrait or landscape mode on tablets.

Customize ” entry in the menu opens the dialog box below which allows you to add or remove buttons. To reset the toolbar to how it is by default, simply select the "Reset" entry from the same menu.
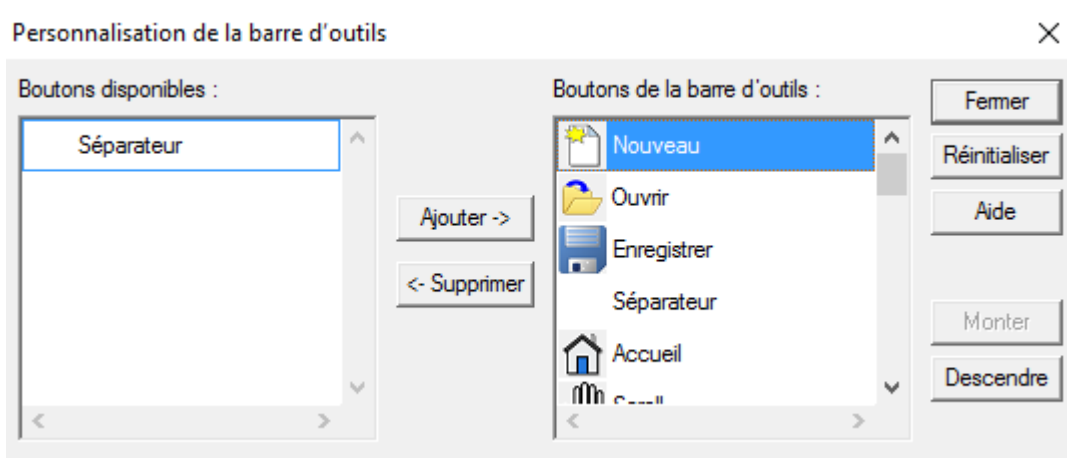
The list on the right represents the buttons present in the toolbar, and the list on the left those which can be added there. You can add or remove buttons from the toolbar by selecting them and using the "Add" or "Remove" buttons. The order of the buttons in the toolbar can be changed by selecting a button and moving it using the "Move up" or "Down" buttons. You can also move them directly by clicking on them and moving them up or down while holding down the mouse button. "Reset" restores the list of buttons present in the toolbar as it was when the dialog was opened.
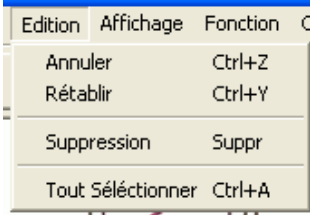
You also have the possibility of adding fully personalized toolbars, which allows you to divide the interface into different toolbars. To do this, use the " **Personal Bars ”** entry in the context menu to add/remove toolbars which you can then configure as the main toolbar.

4.2   File menu

Brings together all the functions relating to exercise recording:

	New		Create a new blank exercise
	Open		Load a previously saved exercise
	Save		Records the current exercise
	Import		Allows you to load an exercise from a file in any directory
	Export		Allows you to save the current exercise to a file in any directory
	To leave		Exit the application

4.3   Edit menu

	Cancel	Undoes the last change made
	Restore	Reverted to last undone change
	Deletion	Delete all selected items
	Select all	Selects all objects on the screen

4.4 View Menu

This menu allows you to configure the workspace, as well as the map view and the elements displayed:

Reset tools	Restores the default icon bar
Toolbar	Show/hide the main toolbar
Standard scale	Show/hide the toolbar scale tool
Personal Bars	Opens the personal toolbar configuration window
Status Bar	Shows/Hides the bottom bar, with boat position, cursor, bearing and distance information
Waypoints, routes...	Show/Hide all object layers on the map
Layers…	Opens the layer management window
Object Library	Opens the list of objects in a dedicated window
Zoom in/out	Allows you to zoom in or out one level. See also chapter 5.1: Navigation in the map
Scale 1	map scan scale

View a position...	Allows you to center the display at a given position and scale. See chapter 5.1: Navigation in the map
Return to home view	Displays the geographical area defined in the home view on the screen
Set as home view	The current view becomes the view that will be displayed when the software opens (home view)
Reset Home View	Restores factory-configured home view
Full screen	Switches to full screen view. Use the "Ctrl"F11 key combination on the keyboard to switch from one mode to another

4.5 Menu Function

The Function menu allows you to change the main tool, which will determine the action performed by clicking on the map. Each tool is detailed below in a separate chapter.

	Shift	🖐	To move the map on the screen
	Zoom	🔍	To zoom in or out on the map
	Selection	⬚	To select objects
	Distances and bearings	⛵	Distances and bearings between 2 points
	Routes and capes	↗	For calculations of ground course, surface course, and headings.
	Bearing Lines	⌐	To create permanent bearings

Waypoints	⊕	To create waypoints	**Roads**	⋏	To create routes
Danger zones	⬡	To create alarm zones	**Notes**	**A**	To create annotations

Transformation of Roads…	⬡	Allows you to modify the different objects created previously

4.6   Option menu

The Option menu has various display and setting options:

	NMEA simulator	SIMU	Allows you to control a virtual boat
	Grid		Displays a configurable grid
	Faith line…	⌐	To configure the heading line and the appearance of the boat on the screen
	Info Bubbles	i	An information window is displayed when the cursor is positioned over an object
	Hide non-navigable areas		Allows you to show or hide the card frame

Center the boat	Moving the boat in simulation mode results in a recentering of the map

The **Cursor, Geodetic System, and Declination entries** open the following submenus:

| **Cursor**		**Geodetic system**	
	Allows you to change the appearance of the cursor and display a virtual thumb under the cursor		Allows you to define the geodetic system in which the coordinates and grid will be displayed

		The Declination can be calculated automatically by the software, or entered in order to meet the prerequisites of the exercises

From version 4.0 it is possible to vary the size of dialogues in order to facilitate interactions on tablets or very high resolution screens. Simply double-click on the dialog title bar to switch them to magnified mode, and double-click again to return them to standard mode. The " **Preferences** " entry also allows you to resize other elements.

By checking the "tablet mode" box, all dialogs open in magnified mode by default. The double-click is then reversed. The "magnification factor" field is the multiplier factor for the size of the dialogues. The default is 1.5, which displays dialogs at 1.5 times their original size. You can enter a value between "1.1" (10% larger), and "2" (2 times larger).
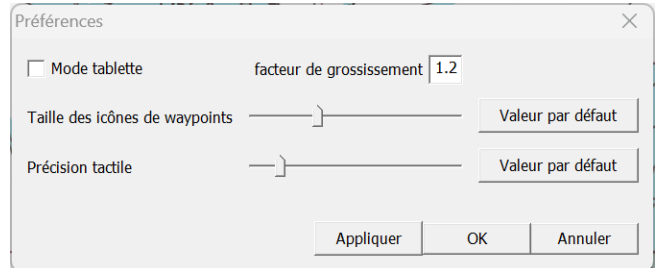
The size of waypoint symbols can be increased or decreased by moving the slider to the right or left

Tactile precision allows you to adjust the precision of pointing objects to take into account different pointing methods.

Generally speaking, the default sizes of the different elements (text, icons, repeaters) are automatically initialized according to the screen resolution (ie they are enlarged on Ultra HD screens).

Icon size " chapter described above.

4.7 "Help?" menu »

	Choice of language	Allows you to choose the interface language, available in French (default), English, Spanish, German, and partially in Italian
	Help topics	Show this document
	Getting started	Displays the getting started document written by Richard Jaquemet (Nautischool)
	About	Publisher and license information

Registration / License Application	Allows you to activate the license if this was not done during installation (refer to the installation guide)
Warranty Limitations	Shows the publisher's liability limits
Check for updates	Allows you to check if software or license updates are available on the server. This possibility is also provided by the "About" dialog.

5 Using the tools

5.1 Principles of movement and zooming in the map

In order to master the software, it is important to know the principles of movement to navigate within the map on the screen by moving and zooming in or out. This can be done in different ways and will thus satisfy several ways of working.

5.1.1 Using the mouse

A mouse equipped with a central wheel will allow you to move and change zoom levels just by manipulating the wheel, which avoids having to change current tools when you want to change view:

- **Doing roll the wheel** forwards (or backwards), you zoom in (or backwards) on the point where the cursor is located, this being at the same time refocused on the screen.
- **By pressing the wheel vertically** without rotating it (like a simple button), and by moving the mouse, you move the map view accordingly.
- **The left** mouse button will have actions that depend on the selected tool (among those listed in the "function" menu).
- **The right** mouse button is reserved for activating a context menu which will bring up different possibilities depending on the object under the cursor.

5.1.2 Using the keyboard keys

You can also use the keyboard to move or zoom in on the map:

- **Keyboard arrows** to move up, down, left or right.
- **Next Page** " and " **Previous Page "** keys to zoom in or out from the center of the map
- **+** " and " **– "** keys as well as " **p** " and " **m** " can be used to zoom in or out

5.1.3 Use of tools 🖐and 🔍

Moving with the tool 🖐: click on the map with the left mouse button and move the mouse without releasing the button to move the view on the screen.

Zoom with the tool 🔍:

- Click on the map with the left mouse button and move the mouse without releasing the button to define a rectangular area on the screen. Releasing the button will enlarge this area to fill the screen.
- A single click with the left button on the map without defining a rectangle will zoom by a factor of 2, centering the new view on the clicked point. The zoom will be in, or out with the " **Ctrl** " key on the keyboard pressed.

These 2 tools can be selected temporarily with the **F2** (for 🖐) and **F4** (for 🔍) keys pressed without having to go and select them by clicking on them. The previously selected tool will revert to the tool as soon as the F2 or F4 key is released.

5.1.4 Use on touch screens

Touchscreen interfaces provide comfort, but also some shortcomings compared to the mouse or touchpad, such as the presence of different buttons. These are replaced by "Gestures" performed with the fingers:

Long Press : Replaces clicking with the right mouse button. Place your finger and leave it motionless in the same place for one to 2 seconds, then raise it to see the context menu appear, or any other operation associated with the right button.

Pinch Zoom : to replace the mouse wheel, zooming in and out is done with 2 fingers, spreading your fingers apart to zoom in, and bringing them together to zoom out.

 Moving : To move the map on the screen regardless of the tool selected, use 2 fingers, moving them together.

5.1.5 Visible Area Tool

The visible area tool consists of a non-blocking window that can be left open to facilitate its reuse. To open it, use the "Display" menu => "View a position".

This tool allows you to display in ScanNav a view centered on a precise position and scale

Enter the central position and the display scale, then click on the "Apply" button
- The position entry unit can be indicated in Decimal Degrees, Degrees/Minutes, or Degrees/Minutes/Seconds.
- The scale can be indicated in standard cartographic scale, or in distance between the right and left of the screen.

 This button allows you to fill the fields with the current values of the view displayed in ScanNav

This button allows you to create a waypoint at the position of the current values

5.1.6 Using map thumbnails

Thumbnails associated with maps can be displayed in a floating window and used to quickly navigate to specific locations on maps. To display a thumbnail, use the context menu in the main window that appears when you right-click on a map. Thumbnail windows can be resized. A red rectangle indicates the area of the map viewed in the main window. If this frame is invisible, the main window is outside the map coverage, or the area is too small or too large to be meaningful.

When you click on a point on a thumbnail, the main window displays the corresponding map with that point centered on the screen. If you leave the mouse button pressed while moving, the behavior differs depending on the current mode (see below).

A context menu appears when you click the right mouse button. The following entries are present:

- **1st Plane: if you check this entry, the window will always remain** ⁱⁿ the foreground (other windows will never move in front of it).
- **Scale 1:** if you select this entry, the map is displayed at scale 1 in the main window, centered on the point where you clicked to open the menu.
- **Properties:** you open the map properties dialog window.
- **Zoom mode** (default) **:** if you leave the left mouse button pressed while moving, you define a rectangle on the screen, and by releasing the button, the main window will adapt its zoom level to contain the defined area.
- **Movement mode** : if you leave the left mouse button pressed while moving, the main window follows this movement.
  You can choose alternate mode temporarily by holding down the "Ctrl" key on the keyboard at the same time as you click in the thumbnail.

When you move the mouse in the thumbnail, it is as if you are moving it in the main window. This allows you, for example, to know the distance (approximate due to the resolution of the thumbnail) from a completely opposite point on the map, without having to move there.

5.1.7 Other methods

- The scale tool in the toolbar [1: 25000 ▼] allows you to go directly to a given scale, by choosing a value from the list or by filling in any value.
- By clicking on the **interior margins** of the window: by bringing the cursor closer to the edges of the window, it changes into a double arrow oriented towards North, South, East, West, NE, NW, SE, or SW depending on the edge or corner. By clicking with the left mouse button, you will move one 10th ^{of} the screen in this direction.
- Via the " **Zoom In** " and " **Zoom Out** " entries in the "Display" menu (zoom relative to the center of the screen) or the context menu (right-click on the map) for zooming centered on a specific point.
- You can also use the **button** 🏠 to return to the home view, or the "scale 1" entry IN the "View" menu to restore a zoom level corresponding to the map scan scale.

5.2   Distances and Bearings Tool

This tool is the default tool that allows you to perform basic operations. The following information is permanently displayed in the status bar at the bottom of the screen:

- The position of the boat
- The position of the point under the cursor (bitter)
- The bearing and distance of the landmark from the boat.

When this tool is selected, if you click on a point on the map, the information relating to the boat's position is replaced by that of this point, until the next click. This allows you to note distances and headings to follow on the map.

The information displayed is configurable, and you can also display it in a separate window in a more readable way.

When this tool is active and the NMEA simulator window is open, if you double-click on a point on the map, the boat will position itself on that point.

5.3 Headings and Routes Tool

Typical sea license exercise. This tool allows you to calculate in stages a ground course from the compass heading or vice versa, by entering the different parameters taken into account in the calculation, the 3 vectors ground course, surface course, and current being in represented on the map on the screen.
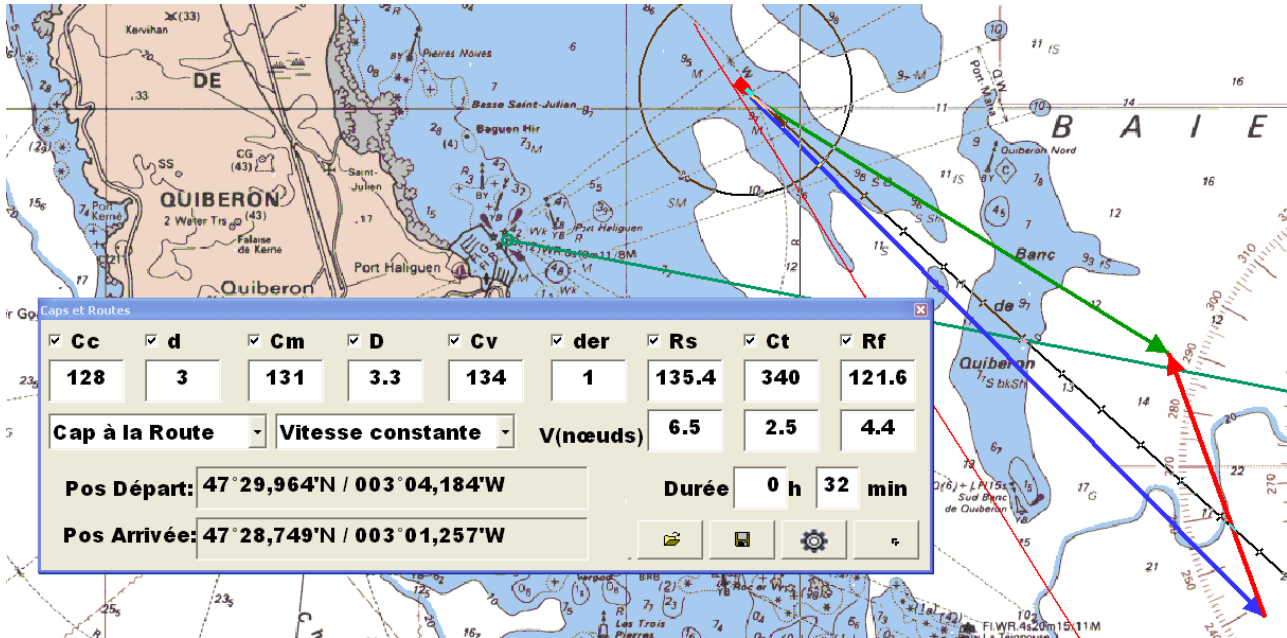
The calculation window can be enlarged using the button   or by double-clicking in an empty area. This makes it more readable, especially when projected on a screen.

Each exercise can be saved, and it is possible to call up exercises already recorded using the 2 buttons   and . All objects (Waypoints, routes, etc.) are also saved in the exercises.

Each parameter can be hidden and revealed throughout the exercise using check boxes.

The data taken into account are as follows:

- **Cc** :   Compass heading
- **d** :   Compass deviation
- **Cm** :   Magnetic heading = Cc + d
- **D** :   Declination
- **CV** :   True heading = Cm + D
- **der** :   Wind drift
- **Rs** :   Road surface = Cv + der ➔ materialized on the map with the **Blue Vector**
- **Ct** :   Current ➔ materialized on the map with the **Red Vector**
- **Rf** :   Ground route = Rs + Ct ➔ marked on the map with the **Green Vector**

The speeds of Rs Ct and Rf are expressed in knots.

The values **d** , **D** , **der** , and **Ct** are fixed values entered by the user (referenced as "fixed parameters" in the remainder of this chapter).

The other values can be entered, and are dynamically modified as the other parameters are modified.

Each time a field is modified, the Ground Route and Surface Route vectors are recalculated and displayed on the screen.

The user can draw the Ground Route or the Surface Route on the screen (see 5.1.1), which recalculates the other fields and updates them in the dialog window.

- Click on the map with the left button and "drag" the vector while leaving the button pressed.
- A simple click on the map allows you to position only the starting position, without changing other parameters.
- By clicking on the final end of the vector already defined, this allows you to change its destination, without changing the starting point.

5.3.1 "Heading for the Road" versus. "Road to Cape Town"

- **Heading to Course mode:** use this mode to calculate the Course to Course from a compass heading.
    - Changing a fixed parameter will change the route and not the heading.
    - When plotting on screen, the user draws the Road surface vector.

- **Course to Heading mode:** use this mode to calculate the compass heading based on a given ground course.
    - Changing a fixed parameter will change the Compass Heading and not the course.
    - When plotting on screen, the user draws the Road background vector.

5.3.2 "Constant speed" versus "Constant duration"

- **"Constant speed" mode:** by drawing longer or shorter vectors, the duration will be modified to reflect the distance traveled at constant speed. It is possible to set either the surface speed or the ground speed.
- **"Constant Duration" Mode:** By drawing vectors of shorter or longer length, the duration will not change, but the speeds will be modified to reflect the speed needed to travel the defined distance in that set amount of time.
- **"Duration & Constant Speed" mode:** In this mode, Speed (surface or bottom) and Duration are both fixed. The vectors are therefore constrained in distance, depending on the heading and the current.

5.3.3 advanced settings

This button gives access to 3 additional options:

- **Fixed duration triangle representation:** When this option is checked, the 3 current vectors/surface route/bottom route represent a fixed duration. The route background vector is then extended by a thinner line to indicate the total duration. If the total duration of the exercise is shorter than the fixed duration, it is superimposed with a thin yellow line. Examples with a fixed duration of 1 hour:

Exercise duration: 1h30	Exercise duration: 0h30
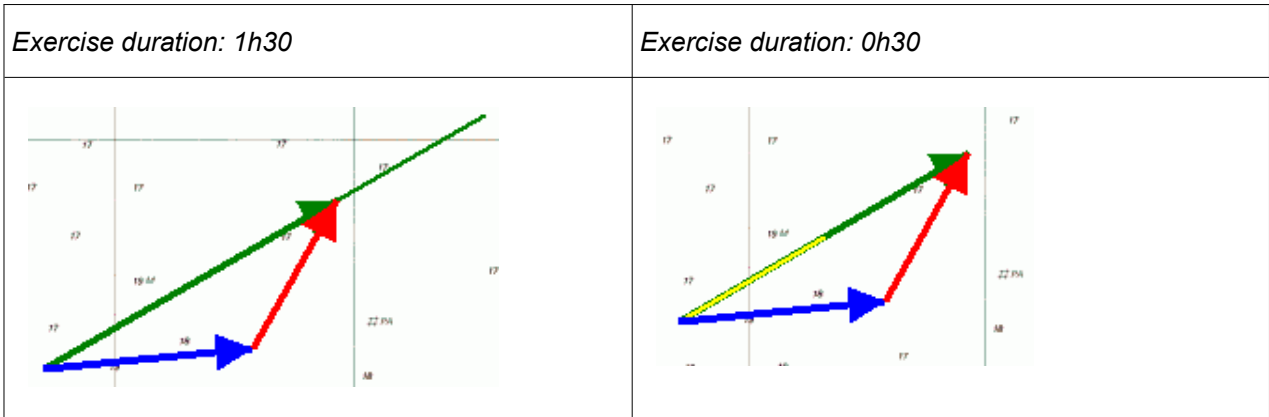
- **Show triangle permanently:** Determines whether or not the "heading and routes" triangle remains displayed when the user is on a different tool.
- **Line thickness** : To configure the thickness of the line used to represent the arrows.

5.4   Bearings Tool

This tool allows you to create permanent bearing lines. Click on the map on the landmark and move the cursor while holding the mouse down, then release at the end of the bearing line.

The dialog window below allows you to refine the settings and define the display parameters, such as the type and thickness of the line and its color.

You can also click on the point and release right away, then set the bearing angle and segment length (in nautical miles). In this case, the values are initialized at the bearing relative to the boat's position.

The angle display can be expressed in true or magnetic bearing and/or inverted with the choice "Bearing" or "Inverse Rel"

It is also possible to invert the bearing via the "Invert" button, ie the end of the line becomes the bearing point.
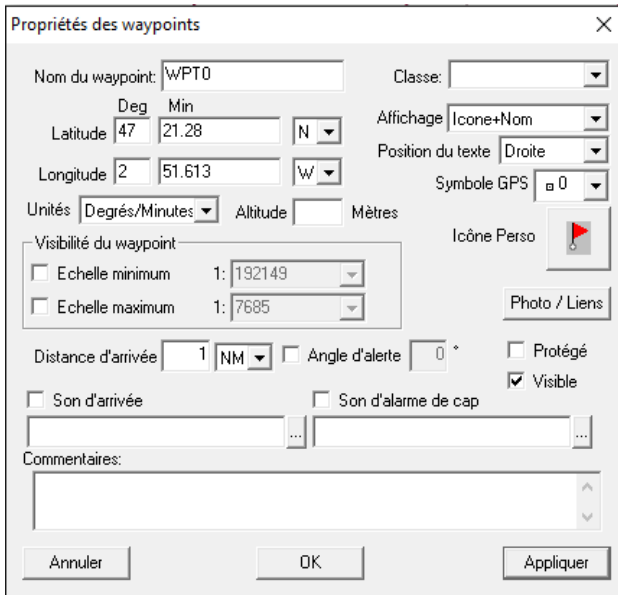
You can subsequently modify a bearing by opening its properties window, or by using the modifications tool:
● click toward the center of the segment to move the bearing;
● click on one of the 2 ends to change the bearing.

5.5   Creating Waypoints

A mouse click at the desired location marks the point and opens an information window to construct this waypoint (or waypoint).

This dialog box is also displayed when right-clicking on an existing Waypoint and selecting the "Properties" entry from the drop-down menu. The fields to fill out are as follows:

● Name: waypoint name.

● Class: allows you to classify objects into classes, to apply common actions to them (see "Layer manager").

● Comments: any comment assigned to the waypoint. This can, for example, be the characteristics of a fire, etc.

● Position: it is expressed in latitude / longitude. You can choose the unit: degrees, degrees / minutes or degrees / minutes / seconds. It is initialized with the point clicked on the map but can be modified afterwards.

- **Waypoint visibility** : allows TP to define a scale zone outside of which the waypoint will not be visible. This makes it possible to avoid overloading a map, especially when you zoom out and the waypoints defined on detailed maps end up superimposed to become unreadable.

- If a **ladder minimum** is indicated (box checked) this means that after a certain number of zooms **out** (i.e. the less detailed the map is), the waypoint will no longer be displayed

- If a **maximum scale** is indicated (box checked) this means that after a certain number of zooms **in** (i.e. the more details requested), the waypoint will no longer be displayed. (this allows you to display different waypoints on a large and small scale)
Values are shown in standard scale factor.

- When creating waypoints, the boxes are unchecked by default (so waypoints always visible) and minimum and maximum scale values are pre-populated according to the current display scale to correspond to a display 5 times larger detailed or 5 times less detailed (if we check the corresponding box).

- **Display :** allows you to define how the waypoint will be displayed on the screen. You can choose :

  1. The type of symbol to display which can be:
     - a generic symbol;
     - the symbol corresponding to the GPS symbol number: today only the basic Garmin symbols are present (corresponding to the Garmin 12);
     - a customizable icon;
     - no symbol.

  2. Whether or not you display the waypoint name.

- **Text position :** If you choose to display the waypoint name, you can set here to display it to the left, right, above or below the symbol.

- **GPS symbol :** Allows you to assign the GPS symbol number associated with the waypoint.

- **Personal icon:** allows you to choose the icon you would like to display in the software to represent the waypoint (if "Icon" is selected in display mode). By clicking on this button, a new window opens allowing you to choose an icon from a list representing buoys, or other marks, with an area to view them (see " Waypoint Icons " below).

- **Photo / Links:** it is possible to associate a photo with a waypoint. The photo is then displayed on the screen when the cursor is hovered over the waypoint and the tooltips are activated.

- The photo is displayed at maximum size. To see it in its original dimensions, just click on it, it will open with the associated Windows application.
- It is possible to put any type of active link in place of a photo. If it is not an image, it will of course not be displayed in the tooltip, but by clicking on the tooltip, the associated application will be launched. Small examples:
  - "c:\video\sequence.avi" will open Windows Media Player or other avi-related application to play the "sequence.avi" movie on the screen;
  - "http://www.scannav.com" will open the Internet explorer on the ScanNav site;
  - etc.

The following parameters are linked to alerts and are only useful when navigating with ScanNav but have been left in order to maintain interoperability and possibly carry out tests with the simulator:

- **Arrival distance:** defines the distance to the waypoint from the moment the alert is triggered.
- **Alert angle:** defines the angle between the heading and the bearing of the waypoint beyond which the alarm is triggered. This value is only taken into account if the corresponding box is checked.
- **Arrival and heading alarm sounds:** You can set alarm sounds that will play when you arrive near the waypoint, or when you stray too far from the heading to reach this waypoint (and the waypoint is "Active") "). To define a sound, check the corresponding box and enter a ".wav" sound file name in the input field. You can fetch a sound file from your hard drive using the button ⌷ adjacent to the input area. A list of sound files comes standard with Windows in the "Media" directory ("c:\Windows\Media" or "c:\Winnt\Media" depending on the system).

5.6   Creating Routes

This tool allows you to create routes.

- **Either directly on the screen:** By clicking with the left mouse button on the map, you will start creating a route, each additional click creating a new stage. If you click on an existing waypoint, it is added to the route, otherwise a new waypoint is created. To complete the route, simply press the "Enter" key on the keyboard, or double-click on the final step. Clicking with the right mouse button will delete the last step, and pressing the "Esc" key on the keyboard will cancel the creation of the route. If you double-click on the map before you have even started creating a route, you will return to creating a waypoint defined in the previous paragraph.

- **Either by choosing the waypoints** from an existing list: to do this, click on the tool ⋏ twice .

In both cases, the following dialog appears:
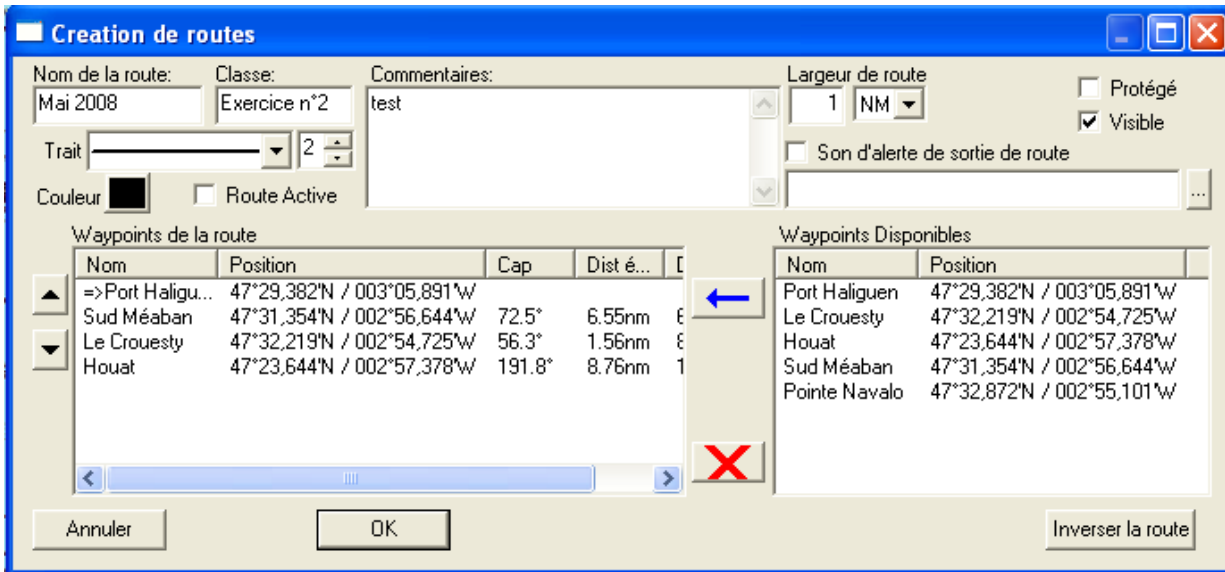
This dialog window is also displayed when you right-click in the map (or in the route list of the objects window) on an existing route and select the "Properties" entry from the drop-down menu. The fields to fill out are as follows:

- As for the definition of waypoints, enter the name of the route and possibly a class and a comment.
- Road width (mainly useful with ScanNav in navigation mode): This is the width of the road corridor. If you exit this corridor, an alarm will be triggered. The active route corridor is visualized on the map by a shaded area. The value entered is that of the "half corridor", that is to say that if you enter a value of 1 mile, the alarm will be triggered if you deviate by more than a mile from either side and other side of the road, which means the corridor will be 2 miles. This value can be entered in nautical miles (NM), kilometers (KM) or meters (M).
- If you checked "Active Route", this is the route currently monitored by the simulator. You can only have one route active at any given time. If you set an alert sound, it will play if you leave the active road corridor defined in "road width".
- You choose waypoints in the list on the right, and we add them to the list of waypoints of the route (on the left), either by clicking on the blue arrow, or by double-clicking on the element to add to the list. These are added at the end of the road.
- You can change a waypoint(s) position in the route by selecting them, and moving them up or down using the left arrows.
- By clicking in the left list with the right button, you bring up a menu acting on the selected elements.
- You can delete waypoints from the route by selecting them from the list on the left, and clicking on the red cross, or by typing the "Delete" key on the keyboard, or by using the context menu.
- You can set the active waypoint by double-clicking an item in the list (or via the context menu). He is then represented with an arrow in front.
- You can sort the available waypoints (right list):
    - By name: click on the name column header.
    - By position: select a waypoint in one of the 2 lists, and click on the header of the "position" column of the list on the right. Items will be sorted based on the distance to the previously selected waypoint.
- The "Heading" and "Leg Distance" information in the list on the left represents the heading and distance from the previous waypoint, and the "Total Distance" information represents

the total distance from the first waypoint on the route.
- It is possible to assign a speed to each segment and a passing date to each point:
    - Click on the speed of an already selected road segment (highlighted in blue) to change its value, ETE (Estimated Time Enroute) and ETA (Estimated Time of Arrival). expected arrival") are then recalculated. You can change the speed of several segments at once using multi-line selection.
    - Click on the date of a selected waypoint to be able to modify it, the ETAs of the other points are then recalculated.
- The window can be enlarged like Windows windows supporting this functionality: either by clicking on one of the edges to enlarge it, or by clicking on the square at the top right to switch it to full screen mode. This allows you to have a larger number of waypoints visible.
- To change the display ratio of the list on the left and that on the right, simply click anywhere in the background of the dialog window (gray area), and move the cursor to the left or the right.
- You can then extract information about road segments to create a notation indicating the road segment information (see " Creating Notes " below).

5.7   Creation of Danger Zones

When this tool is selected, you can define a danger zone by clicking with the left mouse button on the map several successive points to outline the danger zone. Each click creates a new segment. To finish defining the danger zone, simply press the "Enter" key on the keyboard, or double-click on the end point. Clicking with the right mouse button deletes the last segment, and pressing the "Esc" key on the keyboard cancels the creation of the zone.

When you have finished defining the zone, the following dialog appears. This dialog box is also displayed when you right-click in the map (or in the Areas list in the Objects window) on an existing area and select the "Properties" entry from the drop-down menu.
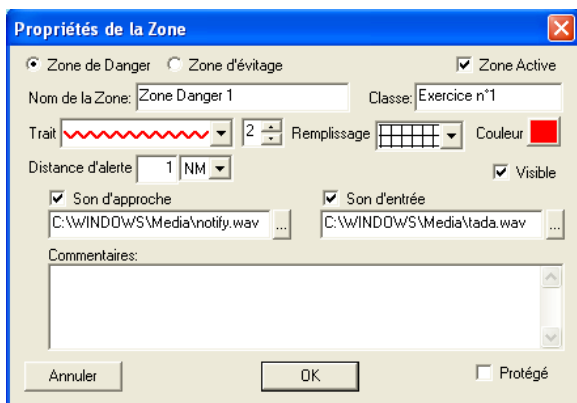
The fields to fill out are as follows:
As for the definition of routes and waypoints, you must enter the name of the danger zone and possibly a class and a comment.
"Active zone" determines whether or not you monitor this zone. Unlike routes and waypoints, there can be several "active" zones.
Alert distance: This is the distance of the boat from the closest point in the area from which an approach alarm is triggered. This measurement can be expressed in nautical miles (NM), kilometers (KM) or meters (M).

The approach sound will be played if you approach within the distance defined above, and the entry sound will be played if the boat enters the area.

You can also create a circular area with the same tool:
- If the danger zone has only 2 points, the first point will be the center, and the defined segment the radius of the zone.
- If the danger zone only has one point (double-click on the map), a circular zone is created centered on the point, with a radius initialized to the last anchorage zone value

Avoidance zone : zone created by a circle at the location where you click with the mouse, the radius is configurable. This zone works in reverse to the danger zone, it is normally used to
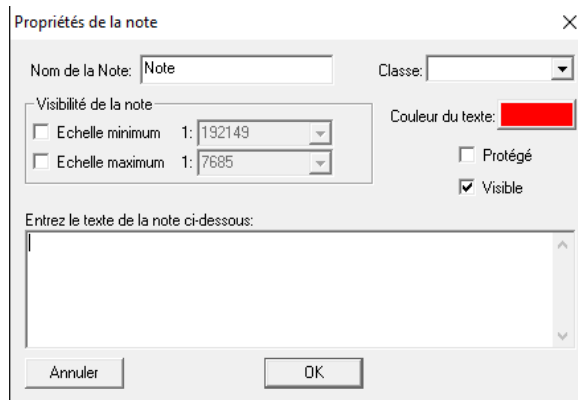
monitor a possible anchor slippage at anchor.

You can transform a danger zone into an anchorage zone, and vice versa, by toggling the "avoidance zone" or "danger zone" option in the zone properties dialog box. A test can be carried out with the simulator.

5.8   Creating Notes$A$

This tool allows you to add annotations to maps.

the tool A pressed, click on a location on the map where you want to insert a note. The following dialog window opens:

As with waypoints, you must give the note a name, and possibly a class. Then fill in the text that will be displayed in the area provided. You can choose the color of the text, as well as limit visibility to a given scale like for waypoints.

A note is not assigned to a particular map, but to a geographic point. It will be displayed independently of the map below.

A special use allows you to create a note automatically filled with information from a route segment. Click on a road segment with the right mouse button, and choose one of the 2 menu entries "Annotation" or "Reverse annotation" depending on the desired direction. A new note is automatically created where you clicked. It includes the following information that you can modify or complete before validation:
- Name of the segment (consisting of the name of the 2 waypoints).
- The course to take.
- The distance of the stage.

5.9   Transformation of Roads etc.

This tool allows you to modify routes or danger zones, or move isolated waypoints:

- By clicking with the left mouse button on a waypoint, waypoint, or zone definition point, you can move it (press the button, move the mouse, and release the button).
- You can also add a waypoint or an area definition point. To do this, simply click on a segment of the road or area while holding down the "Ctrl" key on the keyboard.
- And to delete a waypoint or zone definition point, click on it while holding down the "Shift" key on the keyboard.

6 Advanced use of objects

6.1 Layer Manager

Layers allow you to display or hide the different objects superimposed on the map by family.
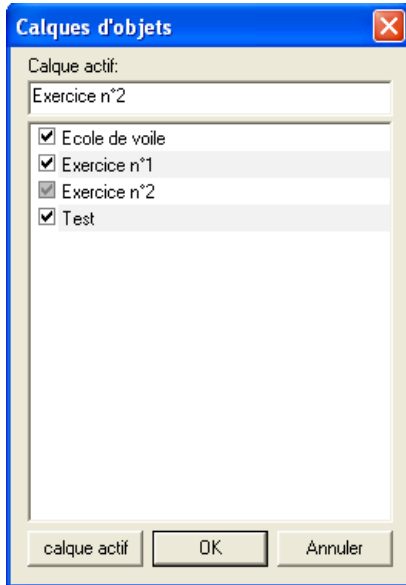
It is important to use the "class" for the objects used in order to group them into families (exercises, dates, or other).

Layer management allows you to define an active layer where all new objects created will be classified, using the first field in the dialog box. All you have to do is enter a name in the input field.

This can be the name of an existing layer or a new name. To assign it to an existing name, you can also select the name from the list (ie highlight it in blue), then click on the "active layer" button. You can also perform the same operation by double-clicking the entry.

Using the check boxes in front of each name allows you to show/hide the objects belonging to the class. A third grayed state (like the "Exercise no. 2" line) means that only part of the objects of this class is visible (unchecked box in the object library).

You can activate/deactivate several layers at the same time by using the "Ctrl" or "Shift" keys on the keyboard to select several entries before clicking on the check boxes.

Note: The "Cancel" button cancels the modification of the active layer, but not the modifications of visible / invisible layers.

6.2   Object Library

The Object Library contains all waypoints, routes, bearings, zones, notes and tracks.
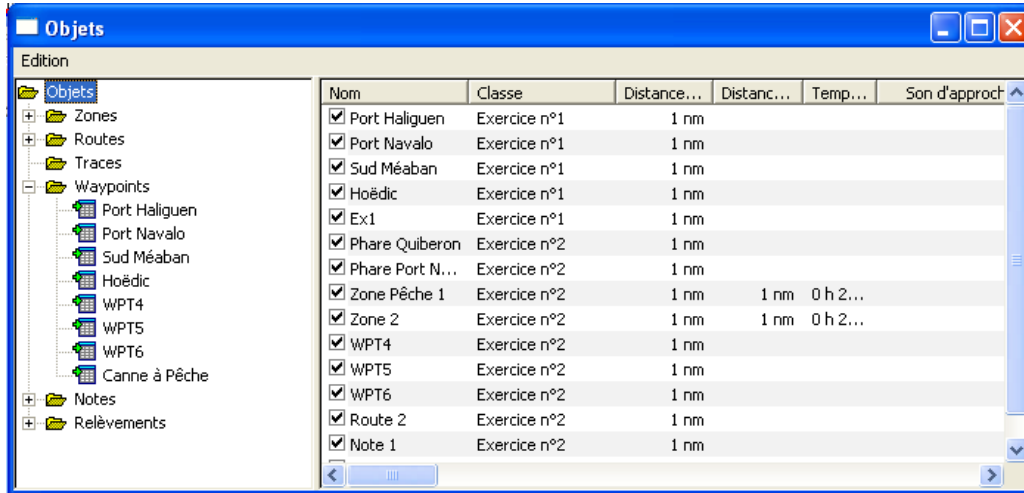

In the left part, six "directories" correspond to the 6 different types of objects (Danger Zones, Routes, Tracks, Waypoints, Notes, and Bearings). By clicking on one of these chapters, we obtain in the right part the list of objects of this type, with different information depending on the type of object. If we open one of the Routes or Tracks chapters (by clicking on +), we obtain the list of routes or tracks in the left part, and if we click on one of these routes or tracks, we obtain the list of waypoints or reference points. trace in the right part. You can consult, among other things, the information on the tracks automatically created by the simulator.

The list of objects in the right part is composed as follows:

- Checkbox: checked if the object is "active", i.e. visible on the map.
- name : you can change it like you rename a file in Explorer (click on it when it is selected, and type the new name).
- List of properties dependent on the type of objects in the list.

You can sort the objects by property criterion by clicking on the header of each column. It is thus easy to group all the elements of the same class to manipulate them together (see also the chapter on layers).

The "Edit" menu allows you to perform various operations. It is also available by clicking in the right list with the right mouse button.
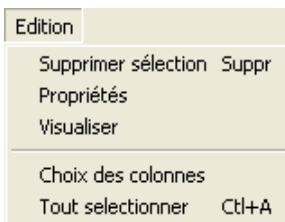
- Delete: deletes all selected items
- Properties: opens the properties window of the selected elements.
- View: centers the display of the main window on this object (or the group of selected objects).
- Choice of columns: opens a dialog box which allows you to configure the columns displayed, as well as their order of appearance. The available columns depend on the type of objects selected in the left part.

6.3   Waypoints Icons

The "Personal Icon" button in the properties window allows you to assign a specific icon to a waypoint by opening the following dialog:
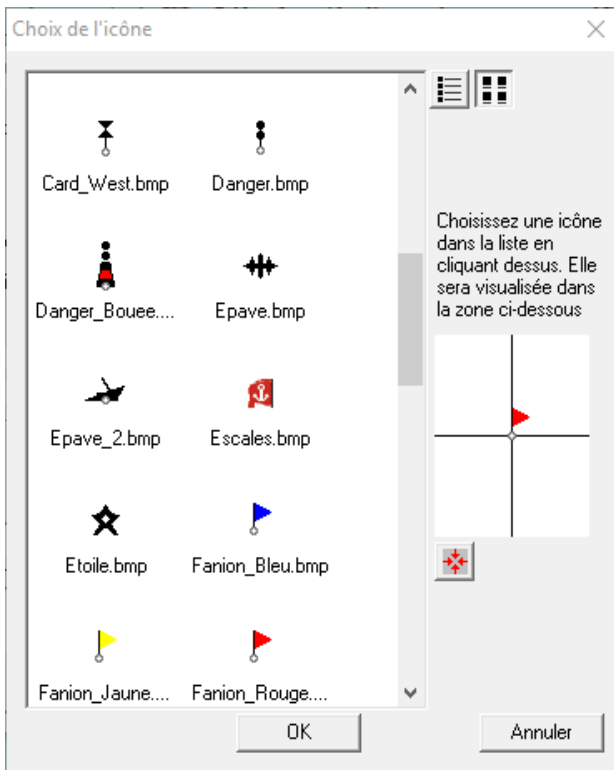
By clicking on one of the names in the list, the corresponding icon is displayed. The viewing area has a cross in its center, the center of this cross representing the "hot spot" of the icon, that is to say the point of the symbol which will be exactly at the requested position.

If the button is pressed, the viewing area becomes active, and by clicking on a point in the image, you can redefine its "hot spot". The icon then repositions itself in the viewing area by centering the image on the new defined point, and the "Apply" button appears. The modification will only be effective if you press the "Apply" button. If you re-select an image from the list before then, the modification is canceled.
WARNING: if you modify the alignment of an icon, this affects all waypoints using this symbol.

You can add your own icons to the list. To do this, simply add image files, preferably in PNG format (in order to take transparency into account) to the "Icons" directory of the **TP Permis Mer Suisse** installation directory .

Images in BMP format are also supported. 16 color (4 bits) or monochrome (1 bit) files allow you to use a transparent color, the other formats being opaque:

For monochrome bitmaps, only black pixels will be displayed, white ones will be transparent.

For 16-color bitmaps, one color is reserved for the transparent color. This is designated by the color of the first pixel at the top left of the image (which is therefore necessarily transparent). So you can only use 15 colors to define the image.

To define the "hot point" of the new icon, that is to say the point of the symbol which must be at the requested position, you then simply have to use the method described above when

selecting a Custom icon using the button .

6.4   Grouped waypoint properties

When you view the properties of several waypoints at the same time (for example all waypoints on a route, or several waypoints selected in the "Objects" window), the waypoint name entry field is replaced by a drop-down list. This has as many entries as there are waypoints

concerned plus a special "All WPs" at the
top of the list. If you select this, only fields
that may be common to several
waypoints are editable, and the changes
made will be applied to all waypoints in
the list. To modify only one of the
waypoints in the list, you must first select
it from this list.

6.5 Trace properties

You can view the properties of the traces through the context menu by clicking on them with the right mouse button in the main window or the objects window. The following dialog window appears:
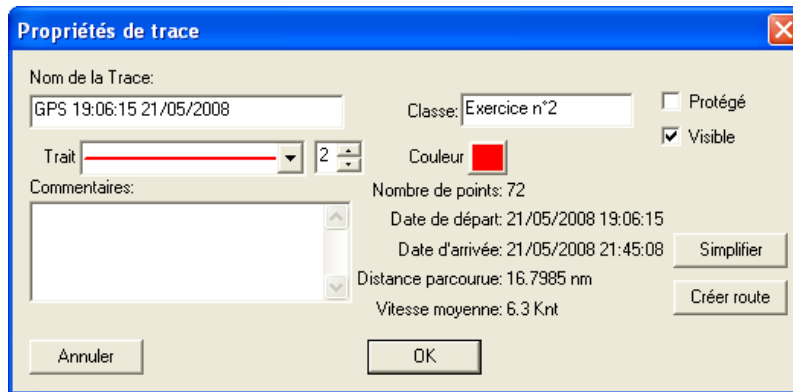
In addition to the general information on the track, you can simplify this track to make it lighter, or create a route from it (essentially useful in real conditions with ScanNav).

Simplification is done based on several criteria: change of course, distance traveled and time elapsed.

7 Miscellaneous

7.1 NMEA simulator

By clicking on this button, a dialog window appears, allowing you to activate the simulator and modify its parameters.
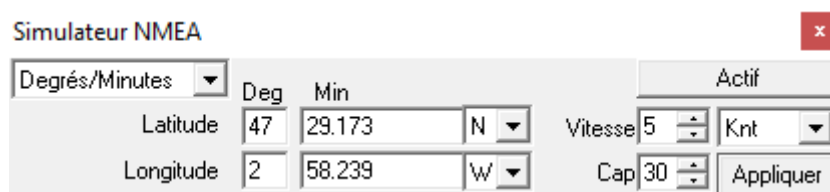
Enter the desired parameters (position, heading and speed), and press the "Active" button to

turn on the simulator. The position can be indicated in Degrees, Degrees/Minutes and fractions of minutes, or in Degrees/Minutes/Seconds. Speed in knots or kilometers/hour, and heading in degrees.

When the simulator is active ("Active" button pressed), you cannot modify the position using the text fields, this being updated automatically by the software. To change the speed and heading, enter the desired values and click the "Apply" button.

You can quickly position the boat on a point on the map by double-clicking on the screen (the current tool must be "Distances and bearings").

Note: each time you deactivate and reactivate the simulator, a new trace is created automatically. This trace is managed automatically by the simulator which creates regular points and saves vital information such as the date in order to subsequently create an automatic log. All information is kept in traces, and can be viewed and saved in the Objects window.

7.2   Grid

You can define whether you want to display a Mercator grid or a UTM Grid (or both), and define its spacing. You can also quickly access this possibility with the "Grid" entry in the "Option" menu or the keyboard shortcut "Ctrl + g".

The "Subdivisions" button allows you to display, in addition to the grid, graduations dividing this grid on the edges of the screen (or the sheet when printing), for greater precision. The following dialog opens with the action of this button. It allows you to choose the number of intervals of these graduations, their sizes in screen pixels, as well as the edge(s) on which you want to see them appear.
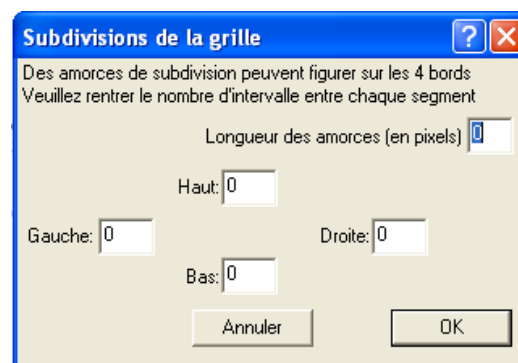
7.3   Tooltips

When this button is pressed, additional information about objects is displayed when you hover over them. This information is linked to the type of objects:

- **Bearings:** position of the landmark and values of the true and magnetic bearing, name and comment.
- **Waypoints and Danger Zones:** name and comment.
- **Routes:** name and comment, total distance, distance and heading of the stage.
- **Tracks:** name and comment, date, heading and instantaneous ground speed.
- **Notes:** name and comment.

7.4   Heading line

This option allows you to configure a series of indicators displayed around the boat.

Heading line: when this option is checked, a line is drawn in the axis of the boat.

Thickness: allows you to choose the thickness in pixels of the heading line.

Circle of uncertainty: when this option is checked, a circle is drawn around the boat. The radius of this circle can be chosen in different units (nautical miles (NM), kilometers (KM), or meters (M).

Time graduations: when this option is checked, the heading line is graduated according to the current speed of the boat. For example, if you enter 10 in the associated input field, the first graduation will be where the boat will be in 10 minutes, the 2nd [in] 20 minutes, etc. The first segment of the heading line will also be thicker.

Distance scaling: this option is similar to the previous one, except that the scaling will be done according to a fixed distance rather than speed.
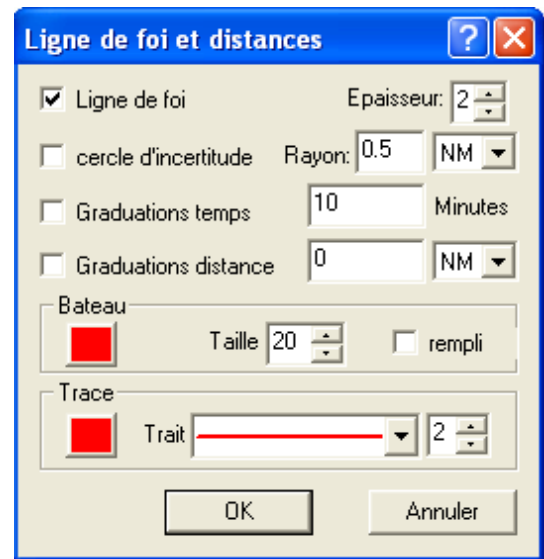
The 2 graduation options are exclusive. You can only activate one of them at a time.

7.5   Hide non-navigable area

The map includes a frame where the latitude/longitude markers are printed. For the exercises, it is recommended to leave this frame visible to familiarize yourself with all the elements of the map. You will be able to use the "software" cursor (horizontal and vertical cross line) to check the positions on the edges of the map as with a ruler. These frames are normally hidden in use with ScanNav which automatically manages a larger set of maps in the map library. The "Seamless" mode allows adjacent maps to be automatically adjusted so that there is continuity between the maps, and that a useful area is not hidden by the frame of another adjacent map.

7.6   Slider and Thumb Ruler

The cursor moved on the screen by the mouse can take on several aspects. The software cursor consists of 2 lines, one vertical and one horizontal, the size of the screen and allowing vertical and horizontal alignments, thus acting as a ruler to read a position from the map frames.

The "Rule of thumb" allows you to visualize on the screen a circle of variable diameter depending on the available map and the zoom scale, making it possible to represent a safety margin (see the SHOM article on Safety precautions). employment relating to GPS, of which here is an extract:

"A safety margin to take: the rule of thumb (1) – Generally speaking, the navigator takes two safety margins, one vertical which is commonly called the pilot's foot, the other horizontal which consists of pass at a sufficient distance from submerged dangers. The GPS user must continue to take these two margins, and for the second apply the rule of thumb: he will trace, whenever

possible, his route so as to pass more than an inch from submerged dangers, scale of the map he uses – This rule is a little harsh in the port approaches which have been the subject of recent surveys. In these areas, the navigator will be able to take full and clear advantage of the precision of GPS. »

The "thumb" is activated/deactivated via the "Option" menu -> "Cursor" -> "Thumb rule" which opens a dialog window allowing you to configure the radius of the virtual thumb, and its display type (circle filled or not).

The radius measurement is expressed in centimeters relative to the paper map printed at its original scale. On the screen, the circle will therefore be larger or smaller depending on the zoom level on the map.
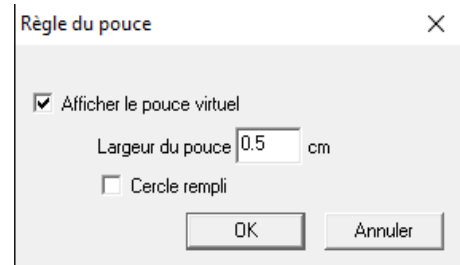
7.7   Working geodetic system

The geodetic system (often noted "datum") is an essential parameter to take into account, especially in the era of GPS.
GPS uses the WGS-84 universal geodetic system which is valid for the entire globe.
Newer maps also use this geodetic system, but many older maps still use the "European 1950" geodetic system (also called ED-50) used in the survey era. The same latitude/longitude position expressed in each of these geodetic systems will correspond to 2 points approximately 150 m apart.

The FR6966 map used for the Swiss Sea permit uses the WGS-84 geodetic system, so there should be no offset on this map compared to the GPS positions. However, this is not the case for all cards (notably the FR9999 card used for the French license), and you will undoubtedly have to use some. It is therefore very important to take into account the information on this subject present in the map title block to avoid errors when reporting GPS positions.

The **Swiss Sea Permit TP** allows you to understand this parameter and practice positioning it at different values. You will see that the same geographical point corresponds to different Latitudes/Longitudes depending on the geodetic system positioned.

The choice of geodetic system is made from the "Options" menu. You thus have access not only to the WGS-84 and ED-50 geodetic systems used in our regions, but also to the entire list of different geodetic systems used worldwide, with details of the parameters composing them.
A good exercise is to display the grid superimposed on the map and change the geodetic system:

- In WGS-84, the grid must be superimposed on the grid printed on the map which is itself in WGS-84.
- In ED-50, the grid will be shifted by approximately 150 m towards the SW. This is not a defect, but a reference difference causing this shift.

On the FR9999 map of the French Offshore permit, the data would be inverted (offset in WGS-84 and superposition in ED-50)