Virtual Sailor -The Virtual Sailing Simulator.

The main features in Virtual Sailor:

Virtual Sailor simulates the entire the marine environment from a sailboat's perspective and makes a complete sailing experience, the major components of this environment are:

- Accurate waves dynamics from above water level and below.

- Accurate sailboat and motorboat dynamics.

- Accurate and dynamic sailing sounds.

- Fully controllable weather conditions.

- Uses many special effects for simulating day or night marine environment.

- Huge land and sea environment based on real topographic data.

- Simulates race with other boats including wind shadow effects.

- Built using the latest technology in 3D graphic acceleration and sound mixing.

- Advanced yet easy to use virtual environment, allowing 360 degrees look around.

- A simple to use program which does not require using marine terminology.

- A simulation that is truly built to expand using open formats for all files, making third party sceneries add-ons as easy as possible.

The benefits of registering Virtual Sailor are:

- You will have unlimited game time.

- You will have additional scenery and add-ons as they become available.

- You will have support and help for creating your own sceneries.

How to buy Virtual Sailor:

The registered version of Virtual Sailor costs 25$ and can be purchased and downloaded online , Registration is with a credit card via secure server.

To register simply point your browser at http://www.alberts.com and search for Virtual Sailor.

Learning more about Virtual Sailor:

Virtual Sailor is built to expand and have completely open data format.
Add-on sceneries will be added for the benefit of all registered users.
To get support or just learn more about the status of Virtual Sailor check the homepage:

http://www.hangsim.com/vs

Or you can contact the author Mr' Ilan Papini

ilanp@netvision.net.il

Minimum Requirements:

- Pentium 166

- Windows 95

- DirectX 6.0

- 3D Graphic accelerator

- Sound card

Notes:

Although the program will run without the use of 3D graphic accelerator is recommended to use one, as the most impressive performance and the most fun comes when playing the game using the proper hardware.

Although the program may run without the use of a sound card, it is recommended to use one as many effects incorporate the use of sounds.

Getting started

The first time you start the program the main screen will appear.
In this screen you can choose between the following options:

Load Cruise This option will load a selected cruise of your choice.

Resume Race This option will resume your last race from the point you left the program.

Sail This option will resume your last sail from the point you left the program.

Help To display this help file.

Exit exits the program.

Creating a race

When you press F5 the map view will appear, in this view you can create any type of navigation or race.
To position you boat and other boats select the edit boats option, to position the waypoints select the edit nav option.

On the top you can see the zoom buttons, use the left and right zoom buttons to zoom in

and zoom out, and the middle zoom button to position the view at your boat location at maximal zoom.

Below the zoom buttons are the main options:

Locked : Will lock the position and status of the boats and waypoints and allow you to view the situation without changing it.

Edit Nav : Will allow you to create , delete and position waypoints, this will also allow you to select the next waypoint you are destined to reach.

Edit Boats : Will allow you to create , delete and position the other boats in the area and also create a race and position the other boats.

Below the option buttons you can see the **boat list**, this list will show you the boat type that is currently selected and also allow you to choose the type of boats you wish to add.

Below the boat list you can see the **waypoint / boat selector**, this selector will select each item you edit and position the view centered around it.
When an item is selected you can move it by dragging it with the mouse and also set some properties for it with the properties selector below.

Below the boats / waypoint selector you can see the **action buttons**, these are:

Clear : Will clear all waypoints or boats from the map.

Add : Will add the next waypoint or next boat, after adding a waypoint you can drag it to the desired location, when adding a boat you must select the desired boat type from the boat list before pressing the add button.

Delete : Will delete the last boat or waypoint that was added.

Properties selector : This selector will select the next waypoint of the selected boat, if no waypoint are selected for of the other boats the race will be terminated.

This selector will also adjust the heading of the other boats, to adjust the heading just click on the left or right selector a couple of times until it has reached the last selection, any further click on the selector will then adjust the heading of the selected boat.

The bottom button the map view is the **Exit** button, pressing on it will apply the changed made and place you in a race or in a sailing session.

When there are other boats that have waypoints selected you are in a race , when your boat is the only boat with waypoints selected you are in a sailing session.

After you close the map you will see the following screen.

At the top of the screen you can see the instrument panel which shows you the status of your boat and it's sails.

On each of th sails indicators you can see the percentage of sail you have set and the amount of drive you get from each sail in the shape of a white arrow.

When the button is red the sail can be controlled and when it is brown the sail is locked.

The auto pilot can help you control the sails, by pressing "G" you will activate the "auto sail" control and this will adjust the position of the sails automatically.

To understand what the indications on the panel mean see using the panel.

You can change the simulation rate to make the race appear faster than real life and to gain quick understanding of how the race proceeds by pressing "F4" for faster rate and "F3" for slower rate.

Resuming a race:

When you exit the program in a race mode, all the race data is saved until the next time you choose to resume the race.
After you choose this option you are placed immediately in the race at exactly the same position and time you left it.

Virtual Sailing

The program can also run in a more relaxed mode called "Sail Mode", in this mode you are not competing with other boats but simply sailing for pleasure and virtual exploration.
Each time you exit the program in a sail mode, all the sail data is saved unfill the next time you choose to resume the sail, thus you can explore the whole world of Virtual Sailor just as if you were sailing from port to port and leaving your boat there for the night.

Controls And Keys:

Helm control

The helm is the control wheel of the boat , you can control the helm in three ways:

With the **mouse**, you can drag the mouse while pressing the left mouse button, moving it to left or to the right will rotate the helm and change the direction of the boat.

With the **joystick**, you can toggle the joystick on by selecting the joystick from the options menu.
Move the joystick to the left or to the right to control helm movement.

Or you can control it with **keyboard**:

Helm Left   Left
Helm Right   Right
Center Helm   End

Engine control

Your sailboat has an auxiliary engine, this engine provides the required thrust while there is no wind or will help you battle your way against the waves and inside ports.

You can also use it to cheat while racing to gain advantage over other race boats, and also you can use it without sails at all if you just want to use your boat as an ordinary powered boat.

Increase RPM   +
Decrease RPM   -
Zero RPM   *

The engine can also be controlled with the **throttle control of your joystick**, to activate this option choose the throttle control from the joystick options menu.

Sail control

Your boat can have up to three sails, the **Main sail** which is mounted on the main mast and provides most of the thrust of the boat , the **Jib** which is mounted between the front of the boat and the main mast, and the **Spinnaker** which is a balloon type sail.

You can control the sails of your boat in four ways:

Using the **auto pilot** to control the sails automatically, press G" to enable or disable this option.
If you are unfamiliar with sail adjustment it is a good practice to turn on this option while in a simple sailing and see how your sails adapt themselves to the wind and to your direction of travel.

When the auto pilot is off, you can control the sails with the **mouse** also, simply drag your mouse in a up or down direction with the left mouse button pressed, this will free or tighten the sails allowing them use the wind more efficiently.

When the auto pilot is off, you also control the sail with your **keyboard**:

Trim Sails   Down arrow
Release Sails   Up arrow

You can also raise or lower each   of the sails (reefing) , especially when the wind conditions are extreme and the boat is close to capsizing, or when you are taking a break for the night.

Main Sail   PageUp / PageDown
Jib   Insert / Delete
Spinnaker   S

The sails can also be locked and unlocked to prevent them from changing positions.

Main Sail Lock   M
Jib Lock   J

The sails can also be controlled using the **joystick** , to control them you must first enable the joystick and also unlock the sails you wish to control, move the joystick up or down to control sails trim.

Other boat controls

You can fix the position of your boat and make it stationary near a coast of your choice with the anchor, but don't forget to raise it when you want to sail or else your boat will not be able to move.

The auto pilot of your boat has two   functions, it will adjust your sails to the optimal angle and it will also steer your boat to the desired heading, these two functions can be activated by the following keys:

Anchor   A
Auto Helm   H
Auto Sail   G

Dive control

Some boats have the ability to dive, you can control the diving on these boats in three ways:

With the **mouse**, you can drag the mouse while pressing the left mouse button, moving it to up or down will rotate the elevator and change the pitch of the boat.

Or you can control it with **keyboard**:

Pitch Up   Down arrow
Pitch Down   Up arrow

Or you can control it with the **joystick** , move the joystick up or down to control the elevator on your submarine.

You can also tell the boat to dive or float with:

Dive   F9

You can also maintain depth by using the auto dive:

Auto Dive   G

Viewpoint and views

You can view your boat from the pilot's position or from the outside, you can also use the map for understanding where you are, measuring directions and distances to other points or changing the location of your boat.

The weather view will allow you to control the current weather and also the forecast weather making the situation fully controllable.

Pilot View   F1
Chase View   F2
Map View   F5
Weather View   F6

You can look freely to all directions using the mouse , Joystick or the keyboard:
When using the mouse simply drag your mouse with the right mouse button pressed.

Or you can use the keyboard.

Look Left   Numpad4
Look Right   Numpad6
Look Up   Numpad8
Look Down   Numpad2
Look Ahead   Numpad5

Move Left   Numpad1
Move Right   Numpad3
Move Forward   Numpad9
Move Back   Numpad7
Move Up   Numpad.
Move Down   Numpad0

Zoom Camera   Z
Unzoon Camera   X
Reset Zoom   C

Move Camera   Home
Chase Close   Home
Chase Far   End

Azimuth Toggle   Tab

Other controls

When you are taking a long cruise or race it is useful to play the game in an accelerate mode, in this mode everything will happen faster than in real life and you will be able to enjoy navigating your boat without having to wait too long until you reach your destination,

but when you have high waves this mode may make be uncomfortable to use, the simulation rate is displayed on the panel near the time of day.

Increase Rate   F4
Decrease Rate   F3

When you have high seas and high winds your boat may capsize , you may reset this situation by pressing

Reset Capsize   F11

You can measure the frame rate of the game by using the "F" key, this will give you indication on how well your computer can show the environment you are in, frame rates of 20 frames per second and more enable you to experience the wave motion correctly.

FPS Toggle   F

You can toggle the main panel on or off while in pilot's view only for getting a clutter free view of your environment.

Panel Toggle   P

The auto pilot is also useful when simply sailing to control your sails or heading.

Auto Helm   H
Auto Sail   G

You can toggle a bridge light just above the captain's seat.

Bridge Light   F7

You can also sound your horn to warn other boats from coming too near.

Sound Horn   F8

You can also dive or float on some boats, and on others reset the sinking of the boat.

Dive/Float   F9

Using the instruments

When you are in the pilot's view you see a large instrument panel at the top of the screen. Understanding this panel is a key element in controlling your ship.

This panel has the following indicators:

Status   In this indicator you see your heel angle (the angle at which your ship is tilted) and also if you have autopilot or anchor engaged.

Speed   The speed indicator measures your speed in knots, the speeds in Virtual Sailor are faster than in real life to make the game more intense.

RPM   This indicator shows you how much engine power you are using in units of revolutions per second.

Fuel   This is your fuel gauge, in Virtual Sailor you only have enough fuel for one hour of engine use in full power, but you can refuel your boat at any port by simply sailing around the lighthouse of this port.

Rel Wind   The relative wind indicator shows you where the wind is coming from relative to your ship, this wind indication is more important to you than the absolute wind as this is what your sails feel, you also see the direction of the sails of your ship in relation to this wind, , you can also see if you are inside the wind shadow of another ship and if so how much.

The term wind Shadow means that another boat is hiding the wind from your sails and thus you have less force to drive you on, this can ruin you chance to win a race.

In this indicator you may see also a green cross to mark the presence of another boat within a 2 NM radius from your vessel , you can use this indication as an **Anti Collision** warning.

Abs Wind   The absolute wind indicator shows you where the wind is actually coming from and how strong, note that you cannot sail directly into the wind so plan your heading according to this indicator.

Compass   The true heading of your ship, note that in real life you would get a magnetic heading and have to correct it to read true heading.

There are two modes of operation for the compass, the heading mode and the azimuth mode, in the heading mode the compass will show the heading of your boat, and in the azimuth mode you will see the word Azimuth appear and

the compass will show you the azimuth you are looking at, this mode is usefull for obtaining a fix on other boats or land marks.

Time/Rate   In this indicator you see the time of day and also how faster the simulation is going relative to real life, if you want your game more intense set your rate higher.

Depth   In this indicator you read the depth you are sailing in, you cannot sail in very shallow water or else you will get stuck, the depth meter will not measure more than 950 ft and this will be it's maximal reading.

For submersible boats, this depth indicator will show you the depth you are in when you are submerged.

GPS   When a waypoint is selected the GPS display will be added below the panel , it will show you the bearing to the next waypoint and also the distance and estimated arrival time to it.

The sail and drive controlls:

At the sides of the panel the sail indicators can be seen, the left one is for the Jib and the right one is for the Main sail.

These also function as winch indicators they can be locked - darker brown color , or free - glowing red , when they are free each of the sails can be controlled independently or collectively .

On the winch controls a triangular arrow marks how much drive (the amount of forward driving force the sail is giving your ship) the sail is giving, your goal is to set the sail angle to give maximum amount of drive.

Using the map

The map is a key element in Virtual Sailor, knowing how to use it correctly is essential for getting the most out of the program and experiencing your virtual world.
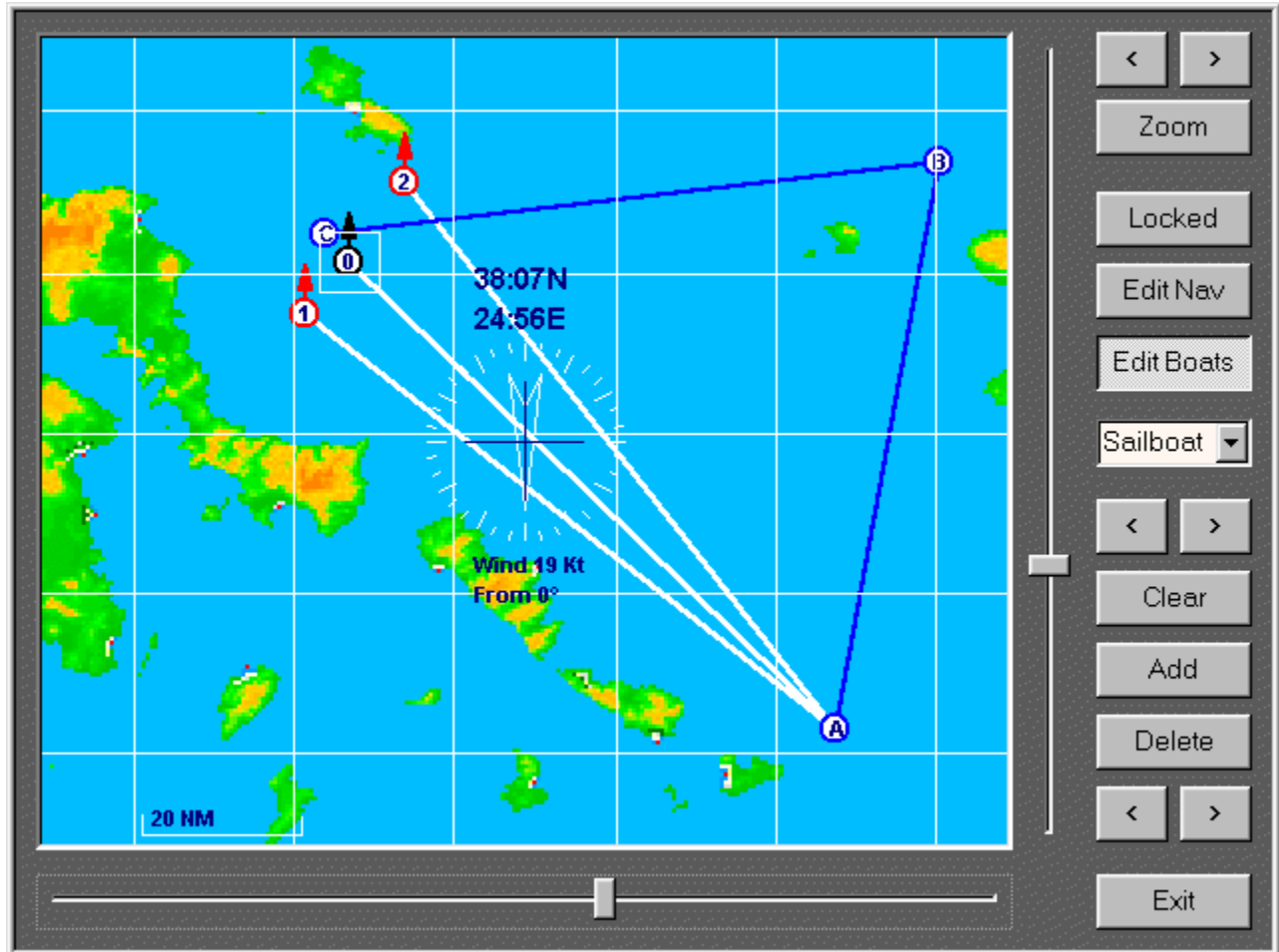
Based on real area:

The map in Virtual Sailor is based on a real section of the world, this section is approx 1000x1000 km in size and you can sail inside it and explore it.

Since your boat is only a tiny spot in this map you can zoom in and out to see your closer surroundings.
press the Zoom buttons to zoom in or out and move the slider controls to pan your view.

Since the map is based on the real world, you can actually read the real coordinates of the cursor's position.

Absolute wind indicator:

Below the coordinate indicator , you see the absolute wind indicator, in this indicator you see where the wind is coming from and at what strength.

Getting a Fix:

When you plan your way you may want to know how far you need to travel or simply measure a direction to a given point of reference, this is called "Getting a fix".

To get a fix in the map, simply drag your mouse upon it with the left mouse button pressed, you will get a line of sight from your boat to the mouse position with azimuth and distance reading.

Moving the boat or the waypoints:

To move your boat or the waypoints you use the map view, press one of the **Edit** buttons and drag the item you want to move, a white rectangle will appear around the selected item indicating that it can be moved.

Programming your GPS and the map:

An advanced use of the map is to program several navigation waypoints for your auto pilot to follow , you can use this option for getting to a selected port automatically, doing so at night adds a special excitement and fun.

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Setting Game Options:

The options in virtual sailor can be set by using the main menu from within the game, these options include weather and environment options and general options.

Weather and environment:
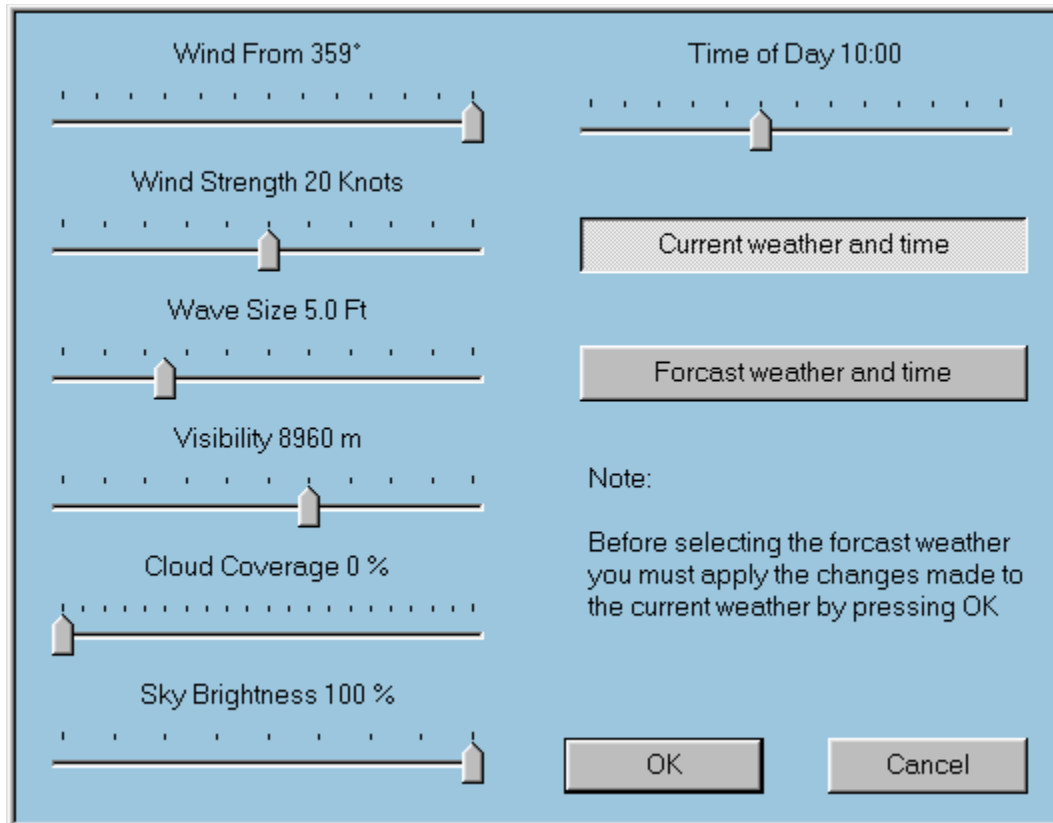
The weather in Virtual Sailor is constantly changing, just as in real life.
You can control and set the weather conditions by selecting from the weather menu , inside this screen you see two main options:

Current waether and time :   This option allows you to set all weather parameters for the current time and have them apply immediately.

Forecast weather and time :   This option will allow you to set the forecast weather conditions and also the time of this forecast , doing so will allow you to simulate a dynamic weather situation in which the weather changes as you sail.

When no forecast conditions are set the weather forecast will be automatically made by the program to simulate a constantly changing weather conditions.

After setting either current weather or the forecast weather the changes must be applied by pressing OK before changing to the other weather type.

General Options:

The general options in Virtual Sailor can be controlled by selecting from the options menu, you have the following options dialogs:

Video   The video settings are chosen automatically by the program each time you start it, however you can change your screen mode and display driver by changing the options in the video dialog, these will be used for the current session only.

Sound   The sound in the program is very realistic and complex , it is composed of several components, the most important ones are the wind , waves and engine sounds.
you can control the strength of these components and enhance one relative to the others, for example you may set the waves sounds high and the others to low and hear how each and every wave your boat hits makes a specific new sound, or you can set the wind sound high and hear the sound of the wind on the wires of you main mast when you lower your sails in strong wind.

Joystick   The joystick dialog enables or disables the joystick functionality in the program and also allows to select it's level of sensitivity.

Game   This dialog controlls how realistic you want the simulation to be and also several graphic options.

Scenery   In this dialog you select the scenery you wish to use , the basic program comes with one default scenery, as add-on sceneries become available you may select them from this dialog.

Boat   In this dialog you select the boat you wish to use , the basic program comes with one default boat, as add-on boats become available you may select them from this dialog.

Saving and loading game situations:

One the game menu you can select to save or load the current situation you are in, this option will allow you to save and restore any situation you may be in , including the boat , the scenery , the navigation and the current weather conditions , any name may be give to the situation file to allow you to identify it by it's name, for example "A nice day in Capry with the Yacht" is a legal file name.

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