

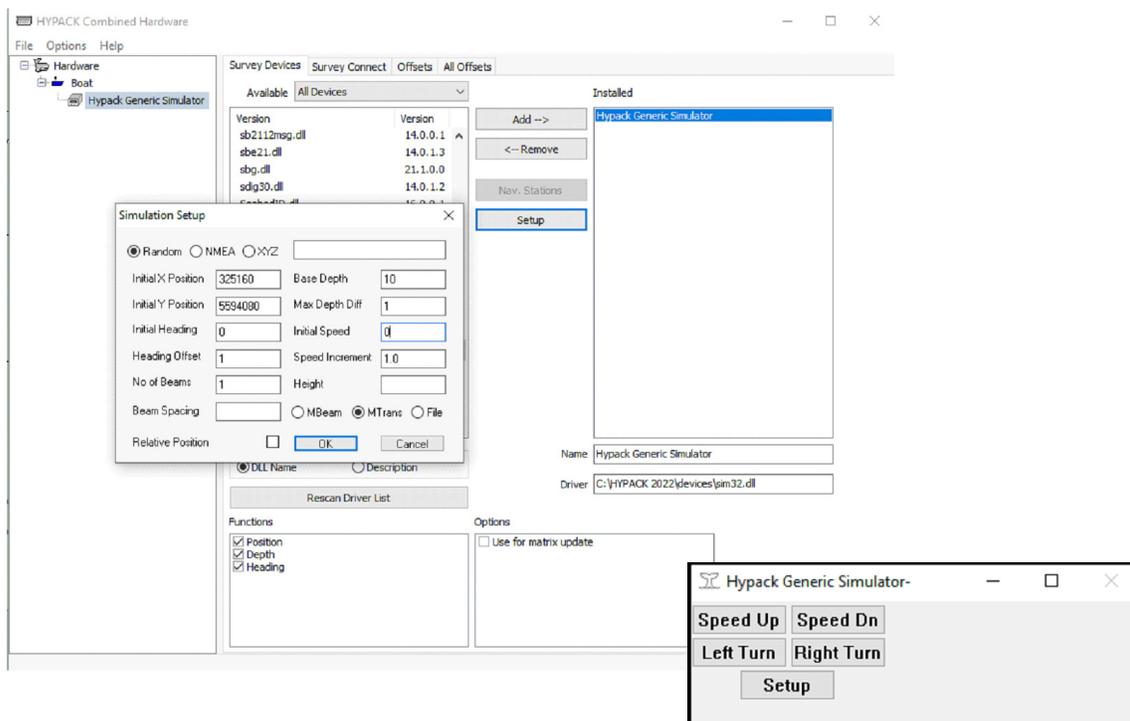


Setting a Simulator for the Single Beam Survey Using the Sim32 and SimVessel Drivers

By Ivan Izaak

There is no time to learn the software when you are out doing the real survey. One must already be familiar with it beforehand. In the past I used the Sim32.dll to simulate vessel positions, speed, heading, and depth. This driver allows you to set the starting point coordinates, initial heading, speed, and depth as shown in Figure 1.

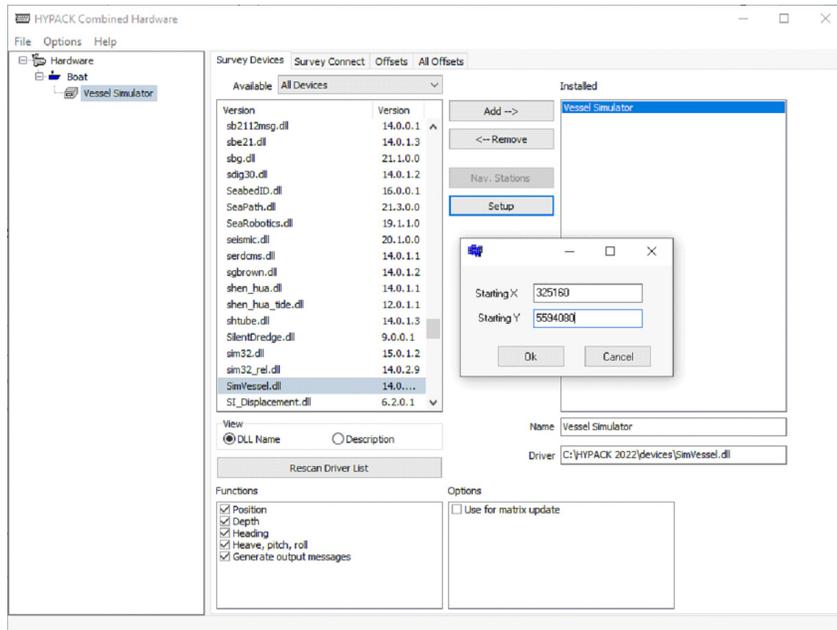
FIGURE 1. Setting Up a sim32.dll in the HARDWARE (Top) and the Driver Window in SURVEY (Bottom)



When you run HYPACK SURVEY with the Sim32 driver, you will be able to manipulate the boat using the driver window by pressing corresponding buttons in the Simulator window. So, to increase the boat speed by 1 knot you need to press the [Speed Up] button one time and so on. If you want to move her to starboard, you need to press the [Right Turn] button to increase Heading to 1 degree at one click. If you want to change the Depth (or positions, or quickly change the speed or heading), you can click the [Setup] button and enter the parameters in the same way you did in the HARDWARE.

Now let's see the SimVessel driver.

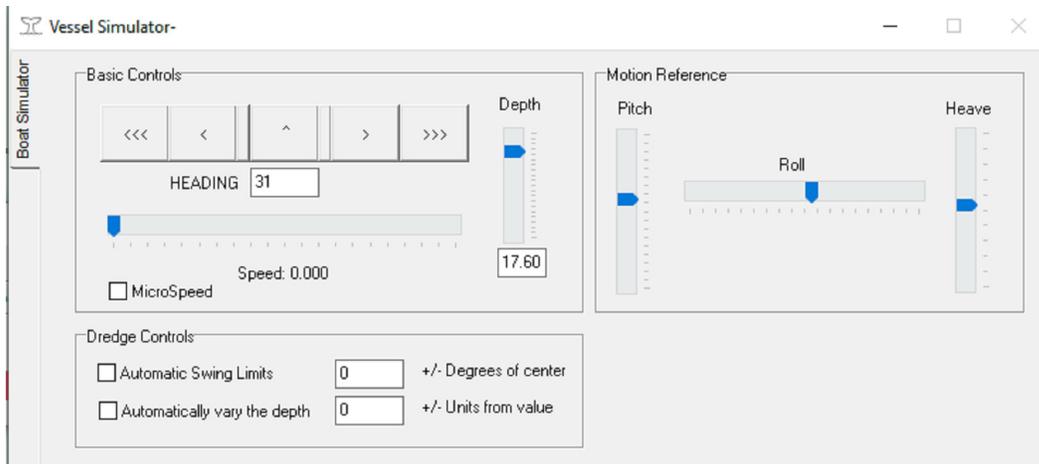
FIGURE 2. *SimVessel Driver Setup in the HARDWARE*

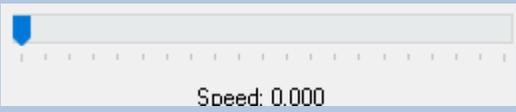


The SETUP form is much easier – all you need to do is to set up a starting point where you want to see your boat when you run the HYPACK SURVEY program and check what functions you want to play with. Unlike the Sim32 driver, SimVessel allows you to simulate not just boat positions, heading, speed, and depth, but also boat motion (heave, pitch, and roll).

Now it's time to run SURVEY with the driver.

FIGURE 3. *SimVessel Dialog in the SURVEY*



Icon	Action
	Click it to continuously turn the boat with 2 degrees port.
	Click to continuously turn the boat at 1-degree increment port. Click a small button to the right to turn her 1 degree at a time to port.
	Stop heading change to keep her steady.
	Click to continuously turn the boat at 1-degree increment starboard. Click a small button to the right to turn her 1 degree at a time to starboard.
	Click it to continuously turn the boat with 2 degrees starboard.
	Move the slider to set the speed. The scale is from 0 to 100 knots.
<input type="checkbox"/> MicroSpeed	MicroSpeed sets the speed scale to 1 knot maximum allowing you to better adjust the speed.
Depth	Move the vertical slider to set the depth.
Motion Reference	Move the slider for the Pitch, Roll, and Heave to set the corresponding motion parameter. Default is all 0s (slider in the middle).
Dredge Controls	These functions do not work yet. The purpose is to limit the dredge arm swinging left/right and up/down within given limits.

Now you have two options to simulate the SURVEY and get yourself familiar with the program options off-season so that you are fully ready to start a real survey when the time comes. It is up to you which driver to use. I like the SimVessel since it is easier to do vessel manipulation instead of constantly clicking the buttons in the Sim32 driver.

Any questions or suggestions? Please, send them to help@hypack.com!