



THE TRACKING POINT - HOW DOES IT WORK?

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Here is the case: there is a survey boat with the transducer installed on the port side (Stb = -5.0m) and the GPS antenna is on the Starboard side (Stb = 5.0m).

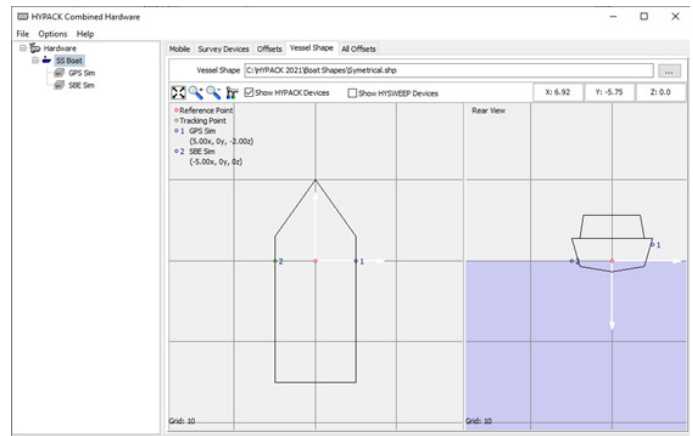


FIGURE 1. Survey Boat with the SB Transducer on the port side (device 2) and the GPS on the starboard side (device 1)

We can set the Tracking Point at the location of the transducer so that when we process the data, our soundings will be located over the planned line. If you do not use the Tracking Point (Tracking Point offset is set to 0, i.e., at the Boat Reference Point), your soundings will be 2.5m to the port from planned line you survey on since the SURVEY will walk your boat with the Tracking Point over it.

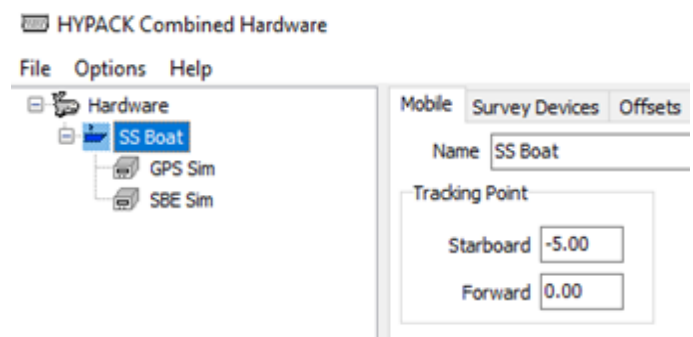


FIGURE 2. Setting the Tracking Point

What happens if the Tracking Point is at the Boat Reference Point? Well, you will see the SURVEY as on the Figure 3 below. Note the Boat is over the planned line with her BRP - Left/Right Indicator shows the offset off the BRP. When you process this data, your soundings will be on the left side of the planned line which is not good.

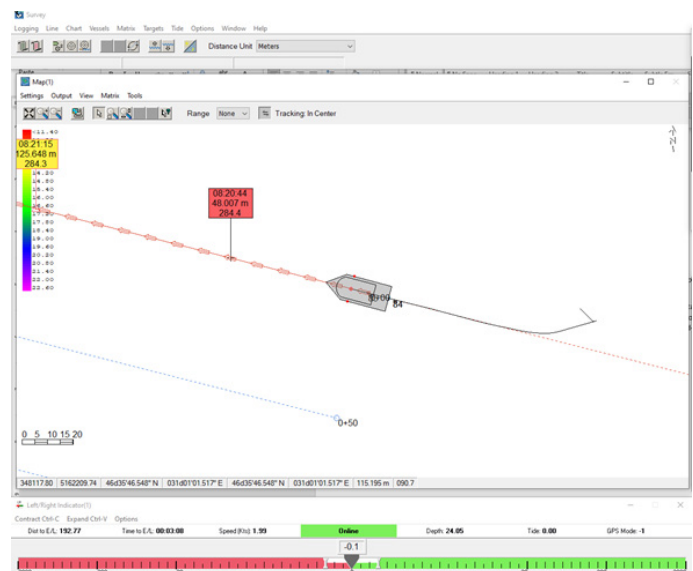


FIGURE 3. Survey Boat with the TRP at the BRP location. Note the transducer on the left.

Now let's set the Tracking Point at the location of the Transducer as shown on Figure 4 and run the SURVEY.

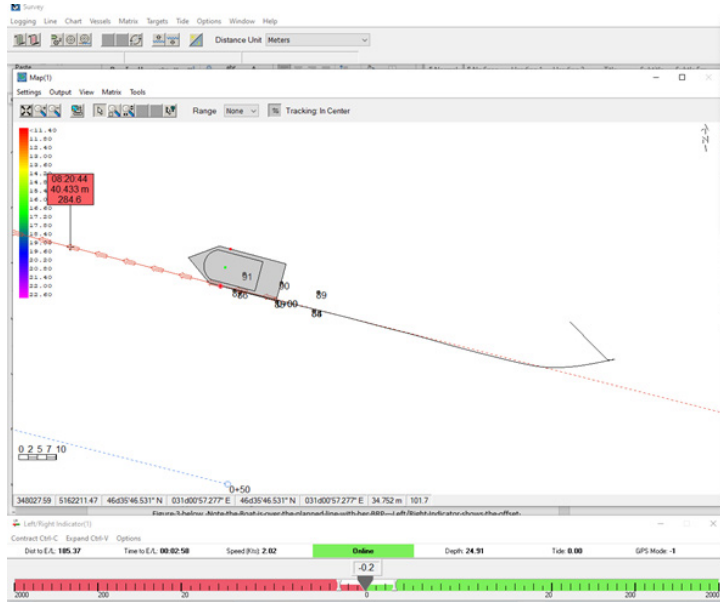


FIGURE 4. Survey Boat with the TRP at the Transducer. Note that the transducer is on the planned line.

SURVEY program uses the Tracking point for several purpose:

- Calculate the offline distance (XTE) for the Left/Right Indicator
- Show the Boat Coordinates in the Data Display (Figure 5)

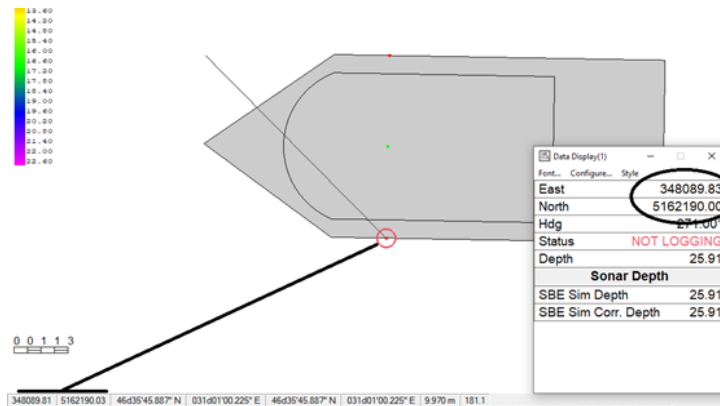


FIGURE 5. Boat Coordinates in the Data Display

- Display the track of the boat (see the black line behind the boat on Figure 4)
- Place the Quick Targets (F5)

OK, the survey is done. Let's have a look at the resulting RAW files as they are displayed in the Main HYPACK Shell

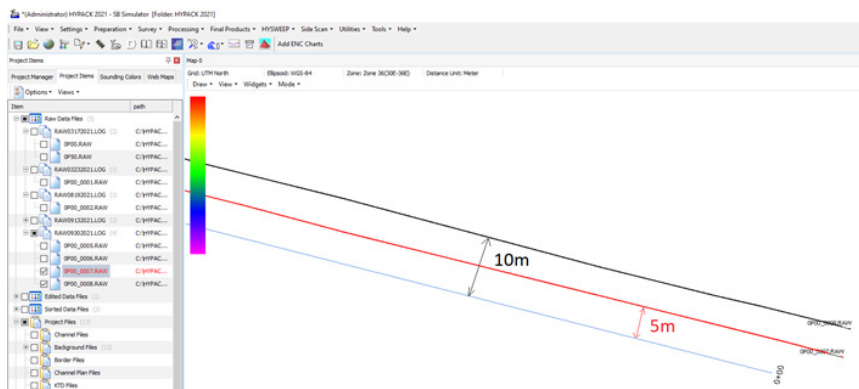


FIGURE 6. RAW Files in the Main HYPACK Shell. Planned Line (blue), RAW file with TRP = 0 (Red) and RAW file with TRP = -5.0 (black)

HYPACK Shell displays the trackline of a RAW file at the location of the GPS antenna (no offsets applied) therefore you can see the red trackline 5m right of the planned line if no TRP is set and the black one is 10m right of the planned line for the RAW file with the TRP set to the SB Transducer. This is logical - in the second case our boat was walked over the planned line with the Transducer on top of it thus the GPS antenna was 10m to the right.

Now let's see what we have in the SBMAX32 Editor (Figure 7)

As you can see, the soundings are 5m off the planned line for the file recorded with the TRP set to zero while the file recorded with the TRP set to the transducer shows the soundings over the planned line.

The edited soundings will be looked like on the Figure 8 in the Shell, where red color shows the data with no TRP (the soundings are off the planned line 5m South) and the black line shows the data with TRP set to the transducer.

As you can see, it is quite beneficial to use the Tracking Point and set it at the location of the device you want to get the data over the planned line from.

Well, the SBMAX64 and MBMAX64 Editors show a different trackline - these editors use the GPS positions for the tracklines instead of the TRP positions (Figure 9)

On the Figure 9 blue lines show the data with the Tracking Point set to the location of the SB transducer and Red lines show the data with no Tracking Point. Arrows show the tracks which are GPS locations really. White line is the planned line. Note that the "blue" soundings are on it while the 'reds' are 5m to the South of the planned line.

Again, if the edited data from SBMAX64 is enabled in the Main Shell, the picture is exactly the same as with the edited SBMAX32 files (Figure 10) - i.e. the red is the data with no TRP and black is the data with TRP and they fit the planned line used.

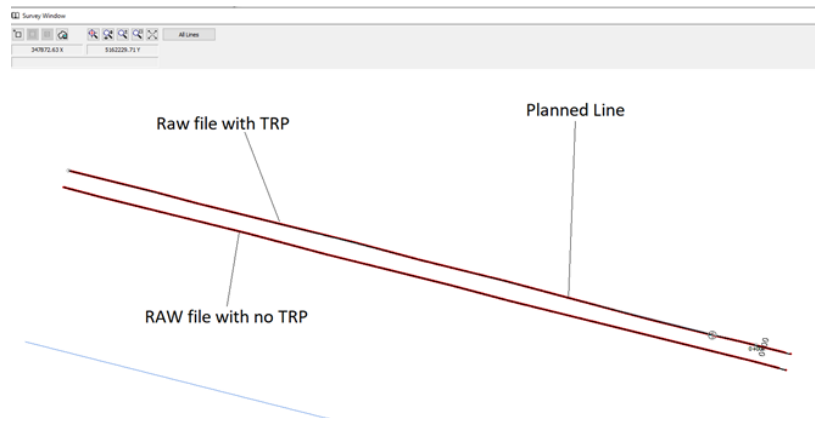


FIGURE 7. SBMAX32 Editor with the RAW files with and without TRP at the transducer.

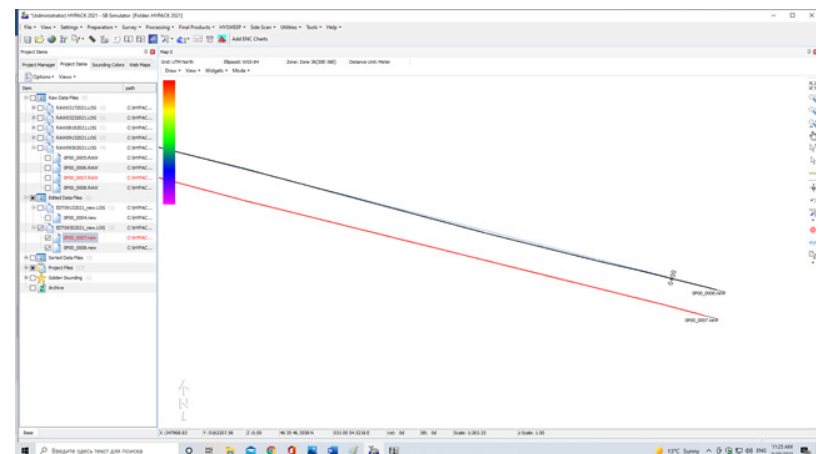


FIGURE 8. Edited soundings in the Shell.

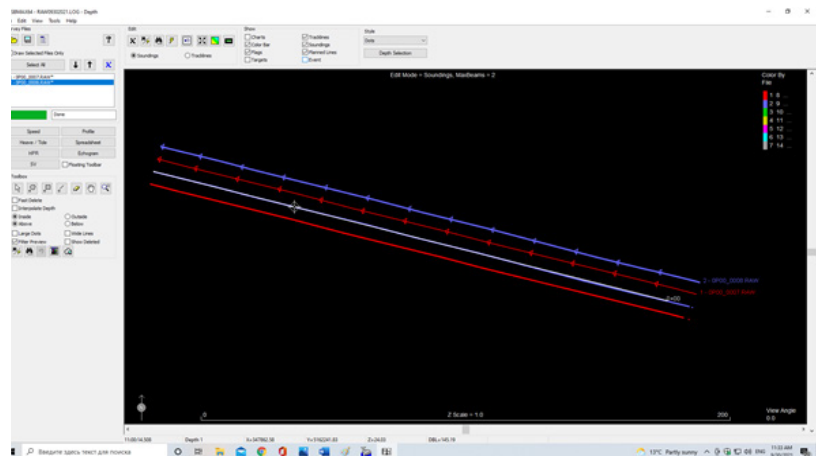


FIGURE 9. SBMAX64 Editor with the data

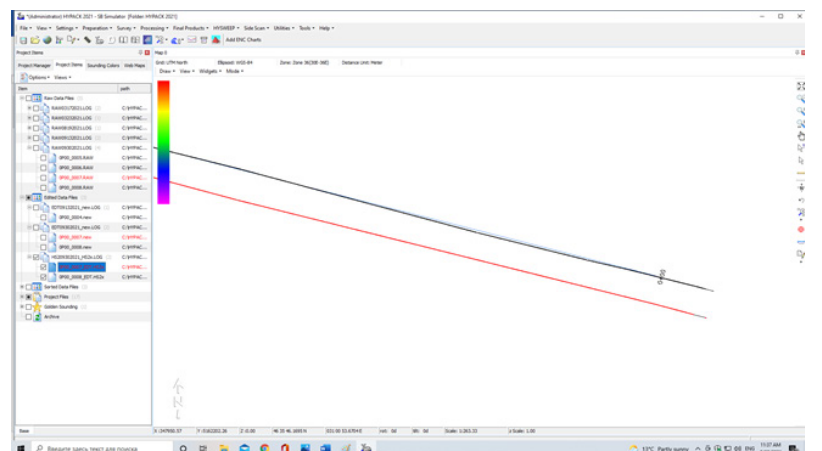


FIGURE 10. SBMAX64 Editor