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Post-processing SonTek HydroSurveyor in SBMAX64

By Judy Bragg

two years ago, Mike Kalmbach wrote an article about using the 64-bit SINGLE BEAM EDITOR to edit SonTek HydroSurveyor data. A lot has happened over the past two years. This article discusses a few things to keep in mind when you edit your HydroSurveyor data in SBMax64 and how to handle the differences between standard single beam data and HydroSurveyor data.

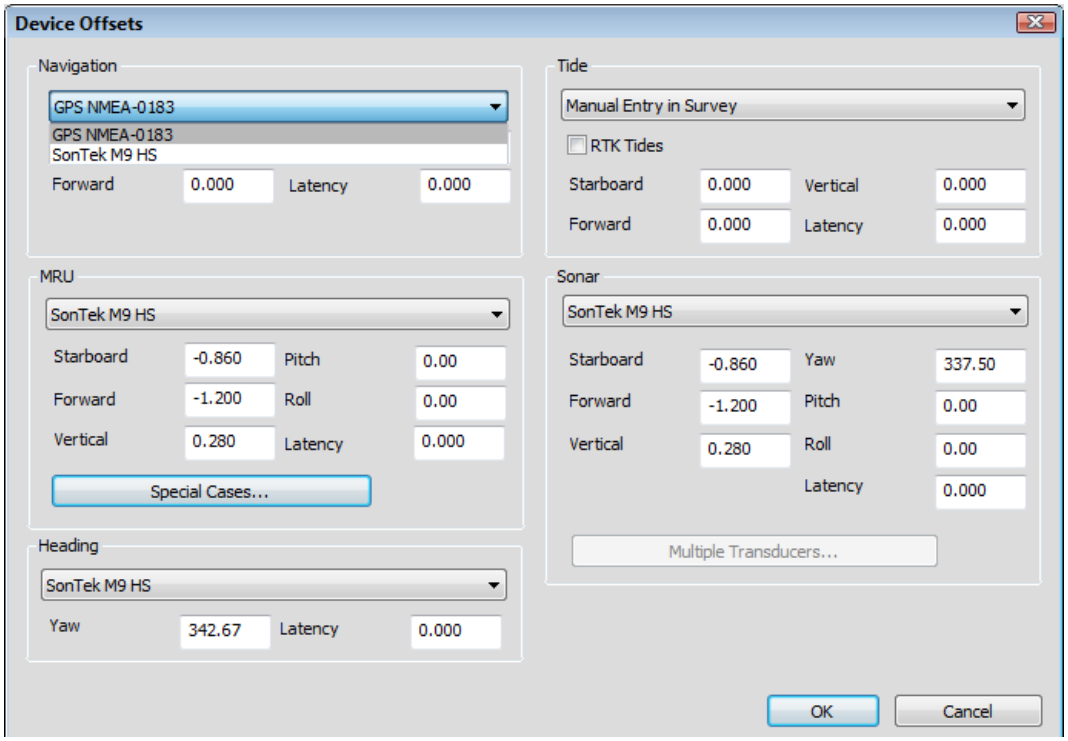
HydroSurveyor data is a bit different than standard single beam data: it includes up to 9 separate beams, magnetic heading from the HydroSurveyor and, if you have used bottom tracking, some of the positioning.

Processing in the 64-bit SINGLE BEAM EDITOR must account for all of these differences.

GPS vs DVL Positioning

In the Devices tab of the Read Parameters, select the device from which the editor should read position. You can always select the HydroSurveyor. *Select GPS positioning only if you have not used bottom tracking for positioning*.

FIGURE 1. *Read Parameters—Devices Tab*



MAGNETIC HEADING

The heading output from the HydroSurveyor uses magnetic north, which is different from true north from the GPS and varies in different locations. (If you don't know the magnetic declination at your project site, there are several websites that provide declination calculators.)

To correct for the magnetic declination, *add* the magnetic declination to the Yaw offset for the HydroSurveyor in the Devices tab of the 64-bit SINGLE BEAM EDITOR. In Figure 1, the device is mounted with a 357.5 degree yaw (22.5 degrees going counter clockwise), The magnetic declination at the project location is 5.17 degrees. You would add 5.17 to the 357.5 degree yaw of your transducer to get 342.67 degrees of yaw in the editor.

BEWARE! *You can not add magnetic declination to the Yaw offset in HARDWARE*, as it would position the depths relative to each other incorrectly.

MULTIPLE TRANSDUCERS

The editor reads and displays the data from each beam separately, so it typically reads at least five beams. If you have changed frequencies mid-line, it reads all nine to show all collected data.

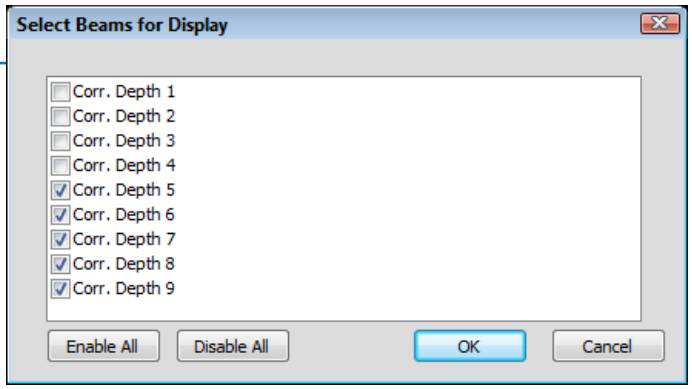
In the 64-bit SINGLE BEAM EDITOR, windows graph multiple values and *editing affects all visible graphs*. In any survey, this applies to the windows that display multiple correction values. *In HydroSurveyor projects, the rule also applies to depth data*, as multiple beams may appear in the Profile and Survey displays.

IMPORTANT: Before you perform any edits, select for display only the values you intend to edit.

In the corrections windows (Tide/Heave, HPR), check the boxes in the toolbar.

In the Profile and Survey windows, you can edit each beam individually, or multiple beams at once. Click **[Depth Selection]** and select only those beams you want to edit. The beam selection in the Survey and Profile displays are synchronized.

FIGURE 2. *Selecting Beams to Edit in a Dual Frequency Project*



The following figures show sample depth displays. You can see how multiple beams appear in each window:

FIGURE 3. *SBMax64 Interface*

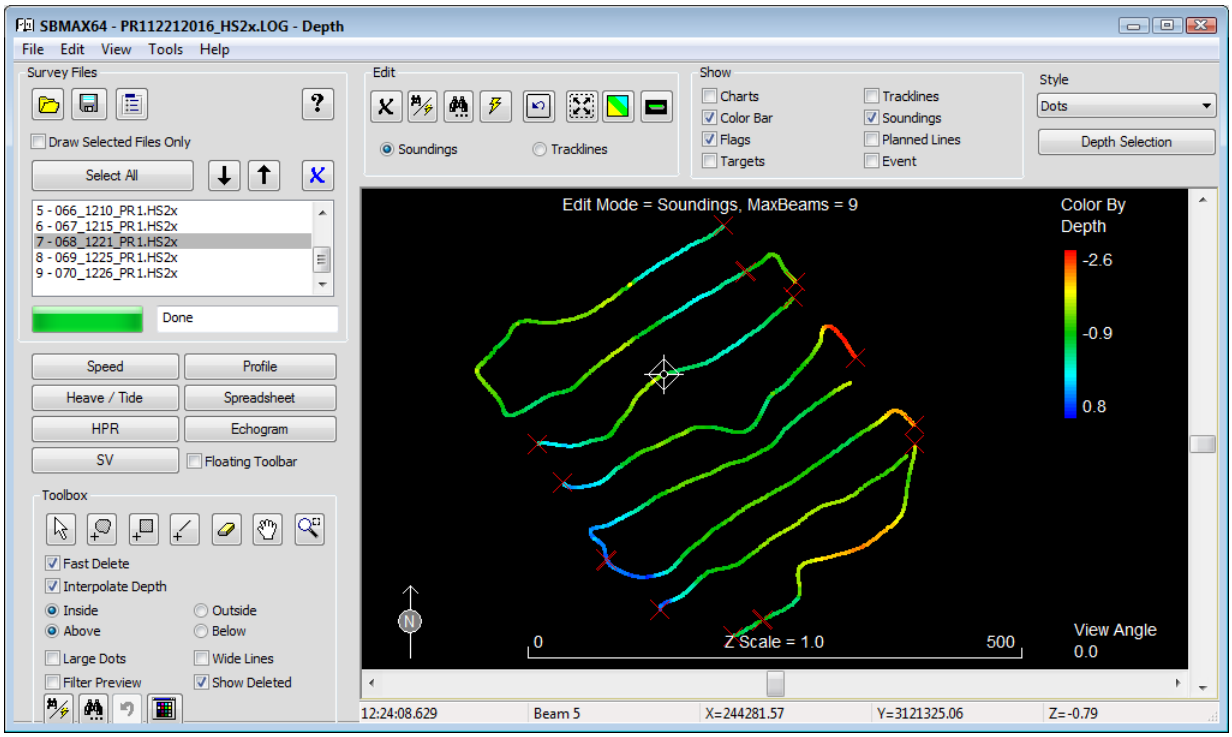


FIGURE 4. *SBMax64 Area Map—Zoom in to see soundings from each beam.*

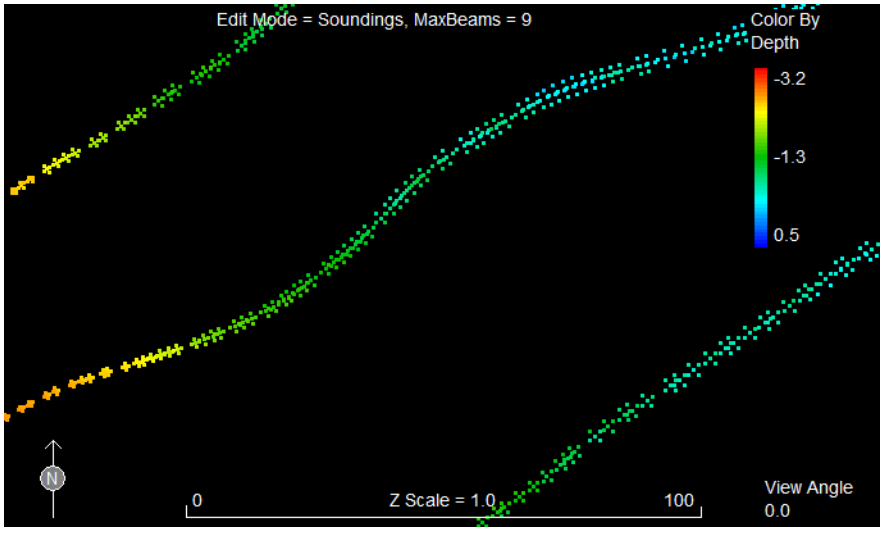


FIGURE 5. *Spreadsheet Window—Separate Depth Values for Each Beam*

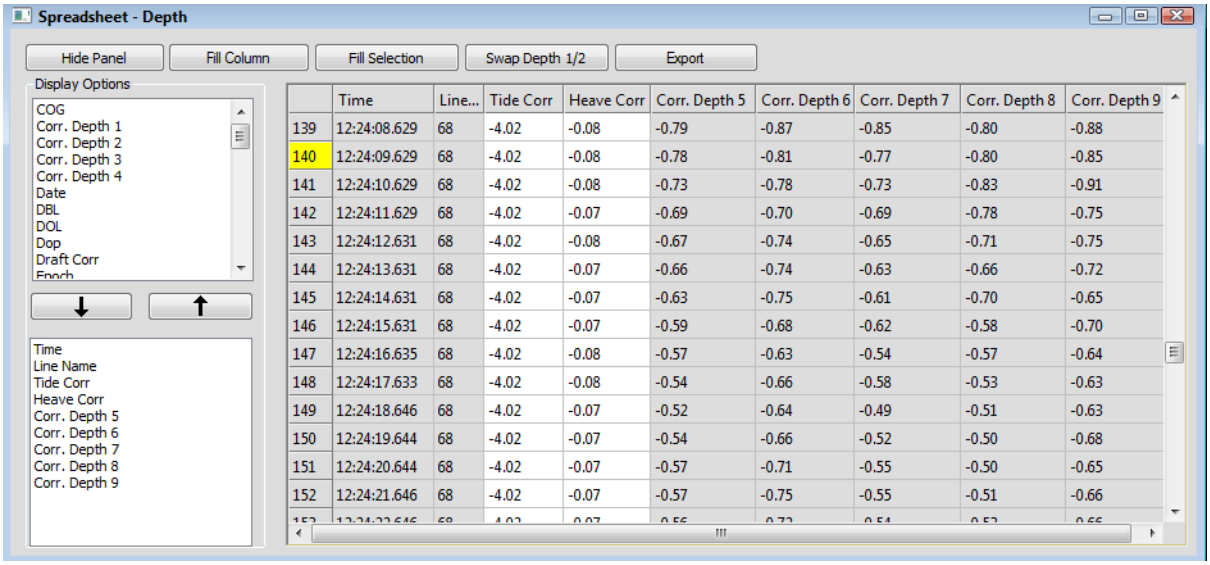


FIGURE 6. *SBMax64 Profile Window—5 Beams (top), 1 Beam (bottom)*