

From the Side Scan Corner....

By Harold Orlinsky

In the latest side scan drivers, we have made two modifications for working with the Klein side scan sonars.

Klein 3900

We also added the Klein 3900 side scan to our list of support sonars. Similar in nature to the 3000, the 3900 is a dual frequency system, but limits data collection to one frequency at a time during operations. In the side scan tools box, there is an option to select which frequency to use for this model.

Dual Frequency Support

First, we added the capability to simultaneously log both frequencies of the Klein 3000. Previously, you had to select the frequency to log, as we were limited in the older HSX format to storing only one frequency. In the HYPACK 2008 release, we expanded our HSX file format to store both frequencies and have added the Klein sonar to take advantage of this logging.

Also, the drivers from the 3000 series and 5000 are now updated to run the latest version of VXWorks. Older versions of Klein's VXWorks will still work fine with in HYPACK®.

User-selectable Frequency for Bottom Tracking

In survey operations, we also added the option to allow you to select the frequency for bottom tracking. Depending upon sea conditions, the high or low frequency may be better suited for determining the bottom track point.

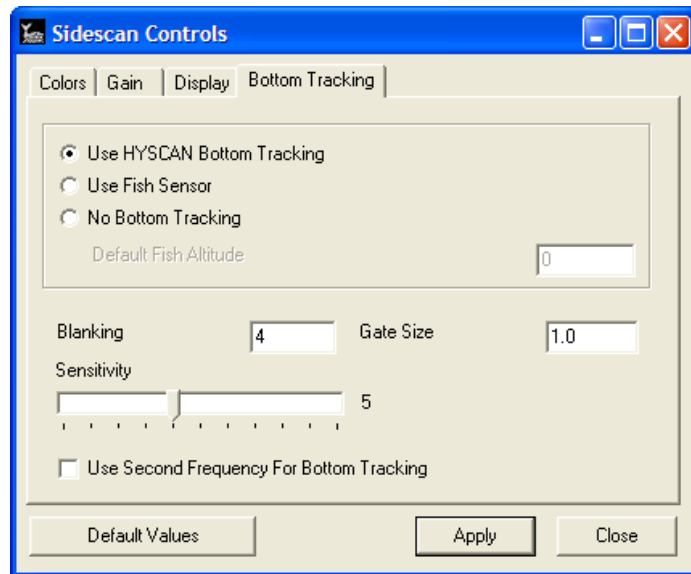
Side Scan Mosaic Tricks.... Bottom Tracking

Processing side scan shouldn't be difficult. It's probably more intimidating than a single beam echosounder survey, as the amount of data can be very large, fitting nicely on a DVD rather than a memory stick. But reality kicks in when the processing part is sometimes as simple as re-adjusting the bottom track and using some HYPACK® control to adjust the color and gain on the imagery.

There are a number of ways to ensure a good bottom track for mosaicing, but the one that saves the most time in the end is to have a good bottom track during survey operations. In the HSX file, there is a value in the RSS line containing the altitude of the tow fish, which is used during mosaicking operations. Whether good or bad, a value will be recorded to be used to remove the water column. Fish, floating sediment and boat wake will cause the bottom track to lose the bottom, and will need to be adjusted during the mosaic process. Keep the water column visible and adjust the bottom track sensitivity as needed.

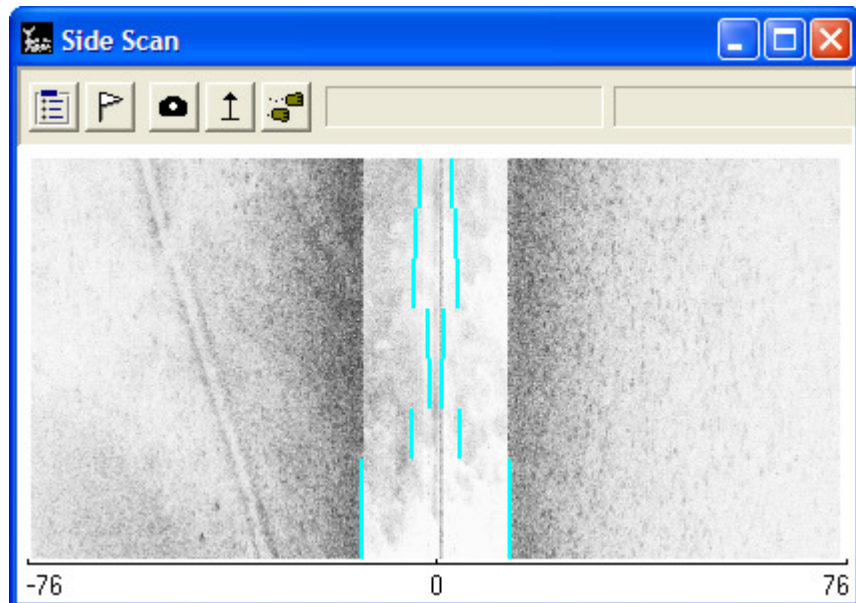
HYSCAN Side scan Controls. (Shift+F9) will bring up the Side Scan Controls dialog box.

HYSCAN Side Scan Controls



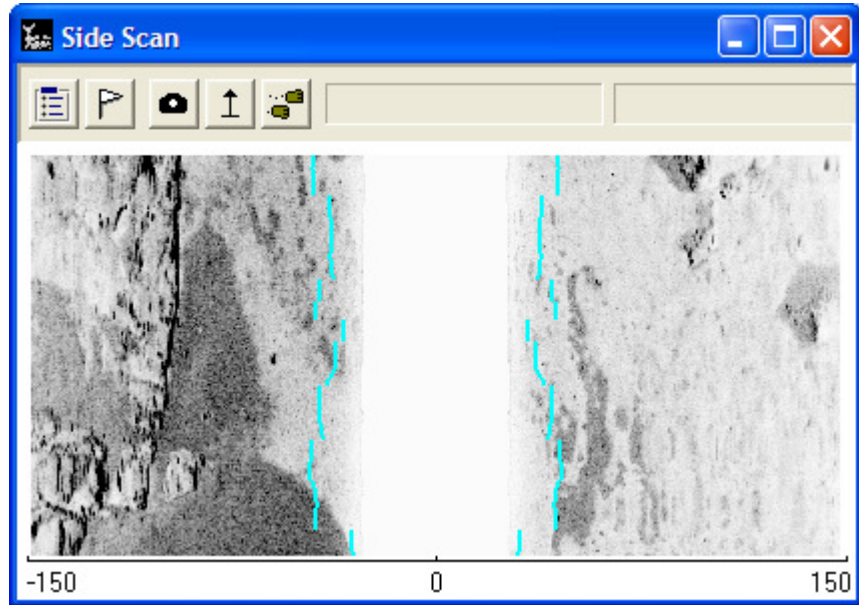
Using the first option, "Use HYSCAN Bottom Tracking", and adjusting the blanking and sensitivity will allow you to closely track the bottom. Initially set the blanking for a few meters, depending upon your towfish depth, but deep enough to ignore anything close to the water surface. This is usually the area of where the bottom tracking finds a object, resulting in a erroneous bottom track return. Use the sensitivity to find the bottom, starting at the midpoint and work your way to increase as needed. Keep in mind that, as the bottom changes, you may need to adjust the sensitivity level.

If you track too shallowly, the result would be a return inside the water column. Try decreasing the sensitivity level, as it is picking up a return before the bottom.



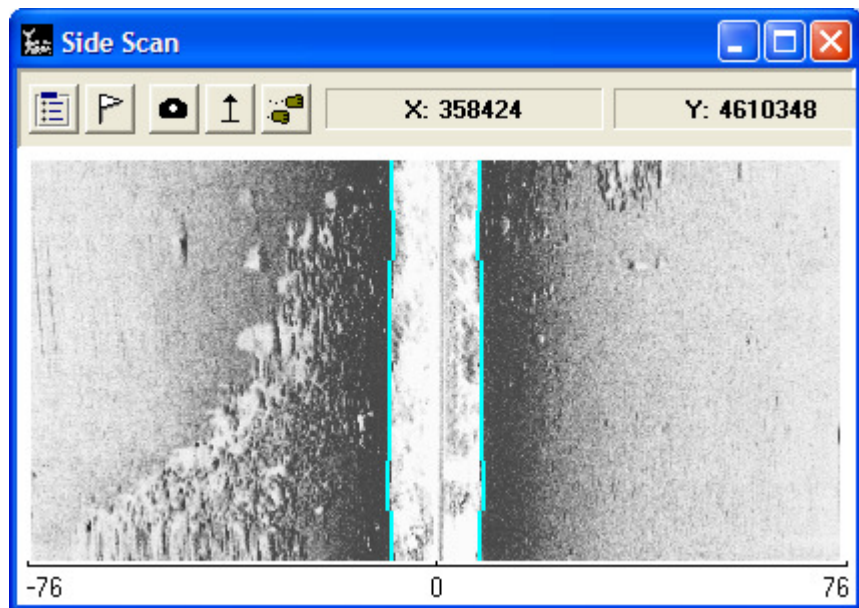
Example of Shallow Bottom Tracking

If you track too deeply, the result would find a stronger region inside the data. In this case, reduce the sensitivity level to try to find the first return.



Example of Deep Bottom Tracking

A good bottom return will appear like this.



Good Bottom Tracking

Once the data is collected, bottom tracking can again be adjusted in Phase 1 of the Side Scan Mosaic program. Adjust the sensitivity level or use the mouse to track the bottom to bring the track to the correct position. The saved HS2 file will contain the new bottom track position. I would always recommend doing the best bottom tracking you can during the survey, to eliminate re-tracking in phase 1 and ultimately getting your final mosaic product done quickly. But know that there is a way to fix the side scan bottom track in processing if needed.