HYPACK
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Sounding Better!

# Keeping Up with Sonar Advances

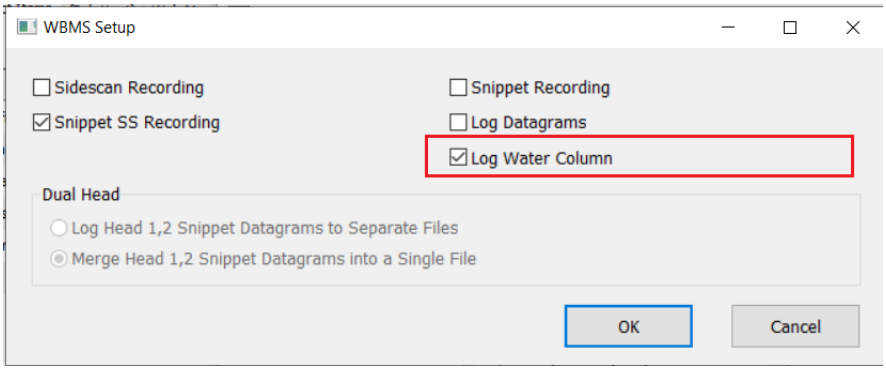
By Mike Kalmbach

Sonar technology continues to pull us forward! Our third quarter release includes a number of updates to support sonar advances; NORBIT, Ping DSP, R2Sonic and Teledyne drivers have all been modified to provide HYPACK® users access to new and better data.

## *NORBIT*

HYSWEEP® now reads water column data from NORBIT multibeam sonar. NORBIT uses compressed datagrams and other methods to keep file sizes down without missing detections. Figure 1 shows the simple setup required to collect and log NORBIT water column.

***FIGURE 1.*** *Just check the box to enable NORBIT water column.*




Once logged the data is available in our Playback program (figure 2) and MBMAX64 editing program (figure 3).

Water column playback is quite easy to use. Simply open the LOG file and use the player style buttons to review the data. Water column in MBMAX64 is a sector style display that is synchronized to the familiar sensor and sounding windows.

A user interface change allows display range to be fixed instead of following the sonar range. For NORBIT this is very useful because sonar range changes frequently (as a function of their bottom tracking). Without the fixed range, imagery becomes quite jittery. Fixed range = 0 causes playback to use sonar range.

USACE New York district kindly provided their boat and survey equipment for field testing.

***FIGURE 2.*** *NORBIT water column in Playback with an anomaly flagged with double click.*

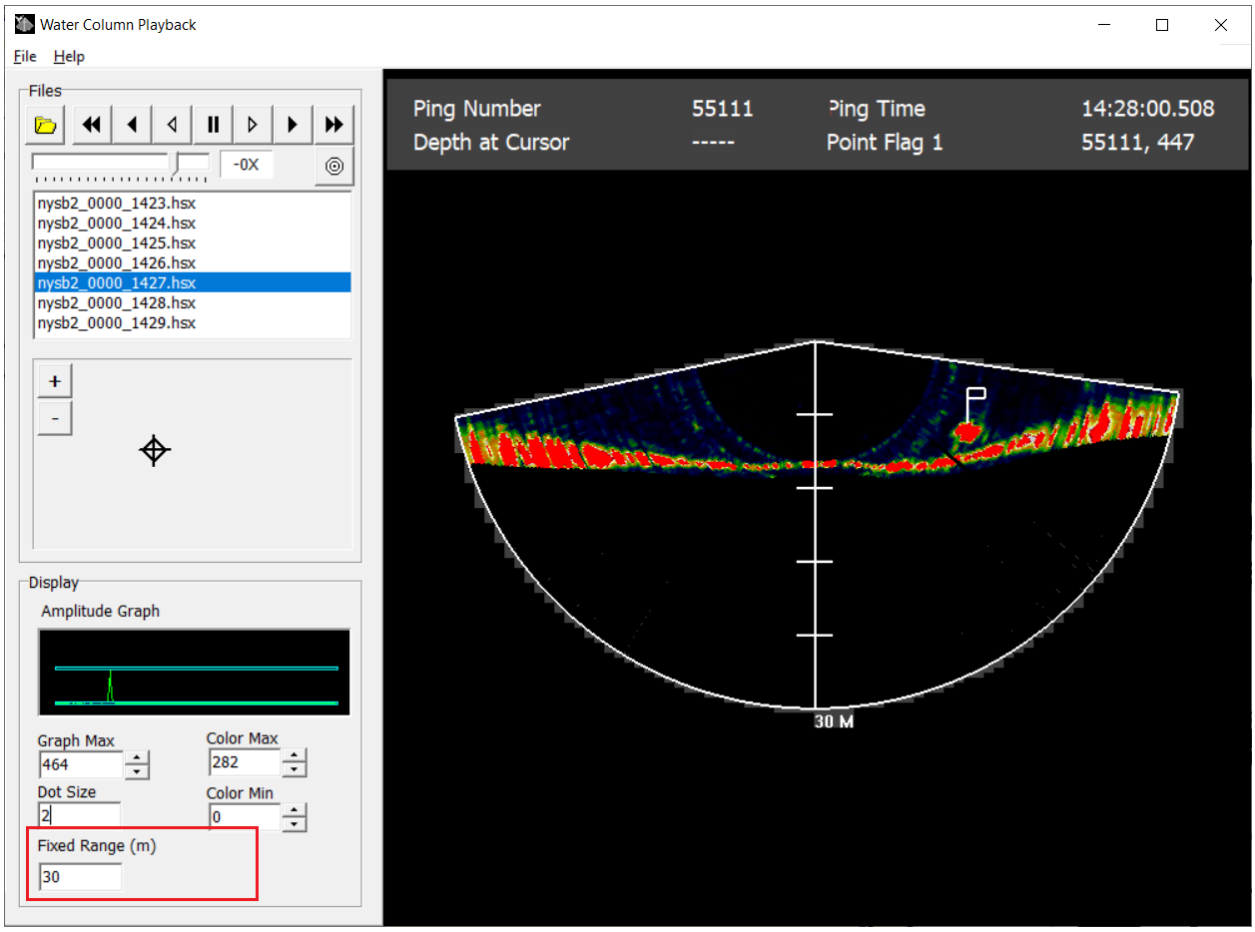
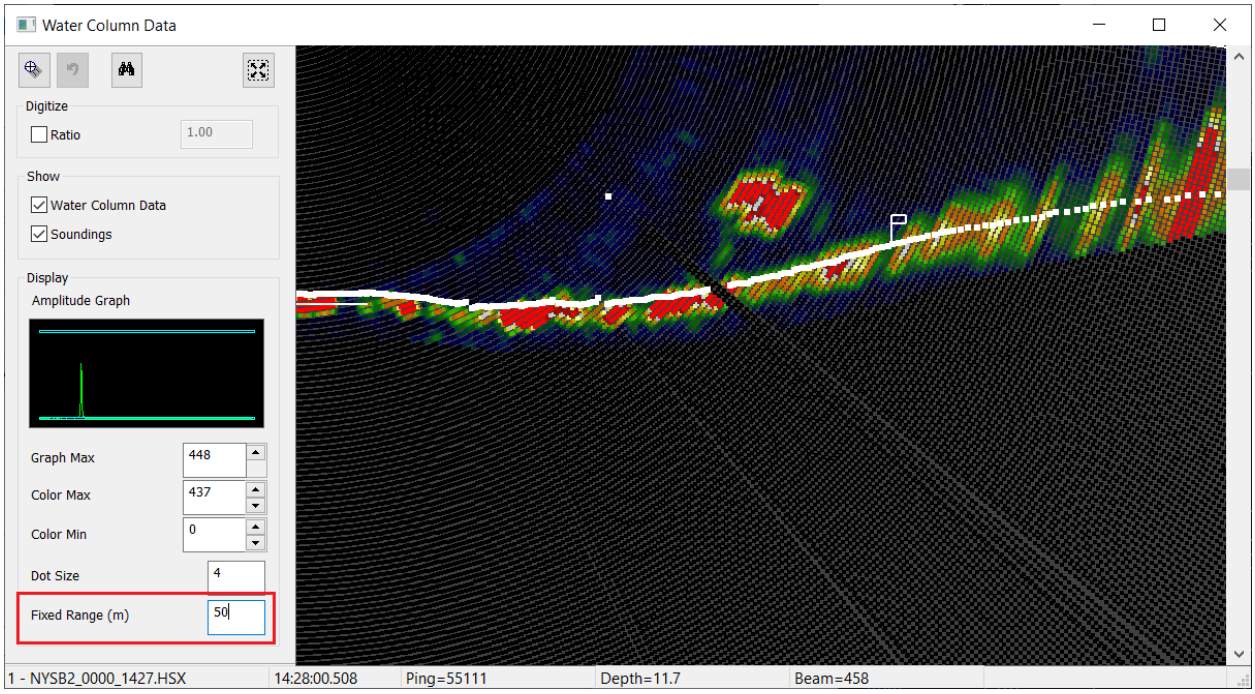



***FIGURE 3.*** *NORBIT water column zoomed in MBMAX64 shows the flagged anomaly was not digitized.*



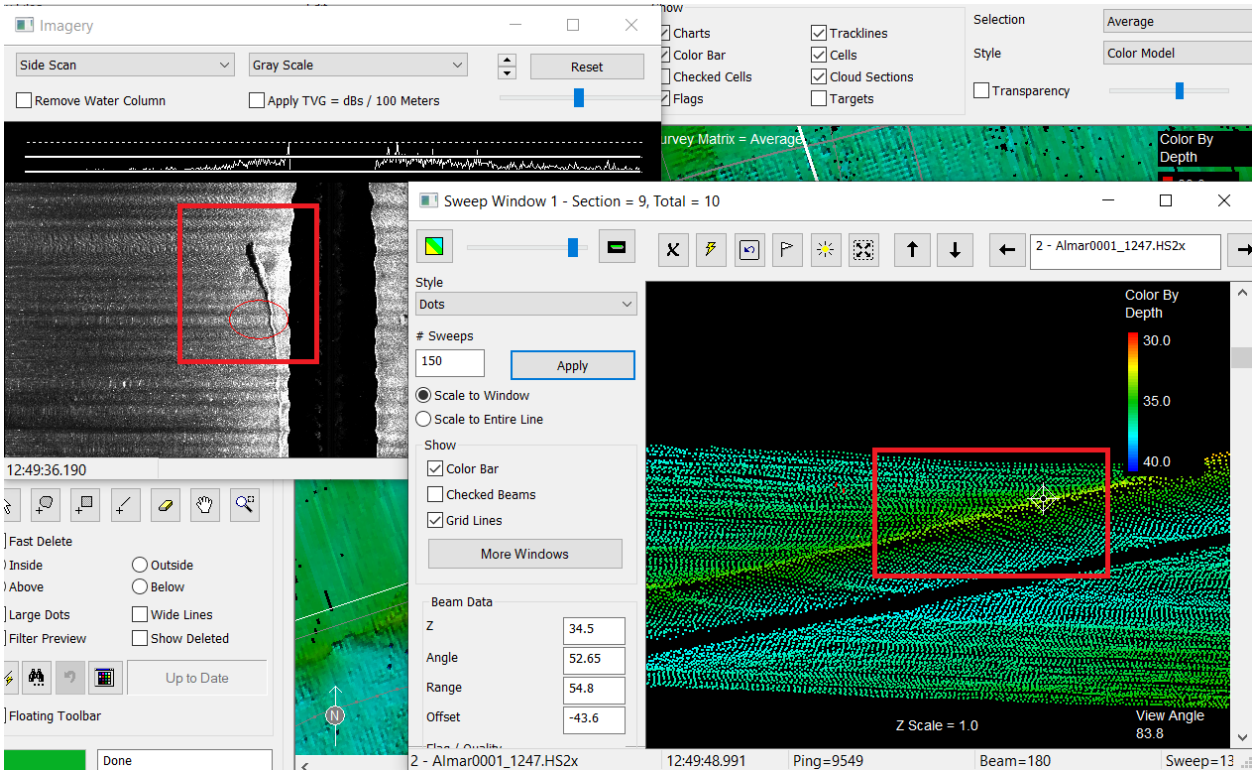
## PING DSP

Our Ping DSP sonar driver has been updated to help users synchronize Ping DSP native files with HYPACK® files. Start and end logging commands in HYPACK® are sent to Ping DSP resulting in file storage using the same names (with different types). This change makes things faster and easier for the data collection and processing crews.

Ping DSP collects a dense cloud of bottom detections. HYPACK® does not yet process each detection but Ping DSP does. Synchronized file naming allows comparison of Ping DSP processing with HYPACK®. (In HYPACK® we bin detections into a reduced data set.)

Figure 4 shows pipeline tracking and mapping in MBMAX64. Ping DSP sidescan is very good. Soundings are quite good too. In this example, soundings were clean out to +/- 75 degrees.

***FIGURE 4.*** *Ping DSP pipeline mapping in sidescan and soundings.*




## R2SONIC

The R2Sonic multibeam change is more of a bug fix. We were limiting users in the data they could log…

(Long ago HYPACK® founder and hydrographic heretic Pat Sanders claimed no one in their right mind would want to log snippets and sidescan (R2Sonic Truepix) simultaneously. So, our driver was coded to log only one or the other. When it became clear that right-minded surveyors actually do want to collect both, it took a while for us to get it right. With the help of the New York district we've finally got it. Sorry for the inconvenience.)

## *TELEDYNE HYDROSWEEP*

Hydrosweep is a line of medium and deep water multibeam systems that came to Teledyne with the acquisition of Atlas Marine. They have updated their systems to use the Reson 7K data format for network transmission and file storage. Our new driver is currently under test but available in the 3rd quarter HYPACK® update.

## TELEDYNE ECHOTRAC E20

This is a full rework of our Odom driver to support the new E20 and Teledyne standardized 7K data. The driver provides motion and position data in addition to dual frequency soundings / echogram.

***FIGURE 5.*** *Survey display from the Teledyne E20 driver.*