



HYPACK
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Sounding Better!

Insight into HYSWEEP® Edited File Formats

By Mike Kalmbach

Get ready, this one is going to knock your socks off. It's about file formats!

Still there? Good. This is good information for people who work with large multibeam or LIDAR surveys. Here we go...

After MBMAX64 editing there's a format choice.

HS2 FORMAT

The original edit format. To keep files small only raw data (with flagging) is saved. Unused device data is not included. No final XYZ points.

Disk space was more of an issue 20 years ago.

HS2x FORMAT

The extended format that came with 64-bit editing. Large files, save everything! All device data, used and unused. Final XYZ points included. HS2x files are typically 2-3 times larger than equivalent HS2.

COMPARISON

I'm a complete advocate of the extended HS2x format. The increased file size is minor compared to the convenience of the extended data.

Objective comparison begins with Table 1. The table data are from a multibeam survey of 40+ million soundings.

TABLE 1. File Size and Load Times, HS2 vs. HS2x.

Format	File Size	MBMAX64 Load Time	HYPACK® CLOUD Load Time	HYPACK® MAPPER Load Time
HS2	906 MB	80 sec.	37 sec.	25 sec.
HS2x	2,295 MB	6 sec.	35 sec.	16 sec.
	HS2x 2.5x larger	HS2x 13x faster!	About the same	HS2x 1.5x faster

As expected the HS2x files are larger.

The next column shows time to reload the survey into MBMAX64. A reload time that is 13 times faster is certainly a big deal. But it's not a surprise, because HS2x was specifically designed for fast MBMAX64 reload.

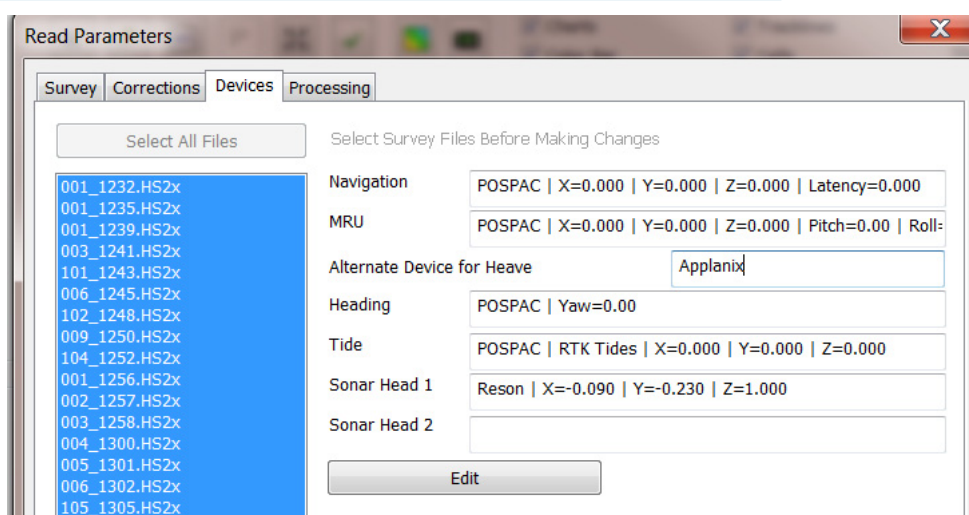
The last two columns are load times into other HYPACK® programs, CLOUD and MAPPER. Load times are comparable, perhaps slightly favoring HS2x.

How can larger files load faster? It's possible because sounding XYZ are included in the larger files, avoiding the massive calculations required to get XYZ out of HS2 files.

Extended data in HS2x makes things more convenient. For example, an HS2x file edited with POSPAC corrections will contain both POSPAC and the original data. Suppose it was found after editing that POSPAC tide corrections are wrong in two files and need to be replaced with the original.

Start out in MBMAX64 Read Parameters. Figure 1 shows the original data has been replaced with POSPAC.

FIGURE 1. MBMAX64 Read Parameters, Device Tab. The POSPAC “Device” has Replaced Original Data.



Select the two files (Figure 2) then click Edit to replace POSPAC for tide corrections (Figure 3). Save changes and you're done!

FIGURE 2. File List with the Two Files Selected.

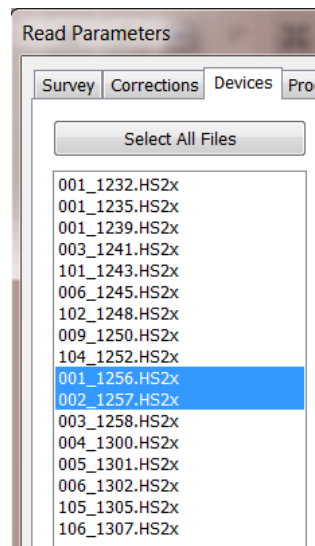
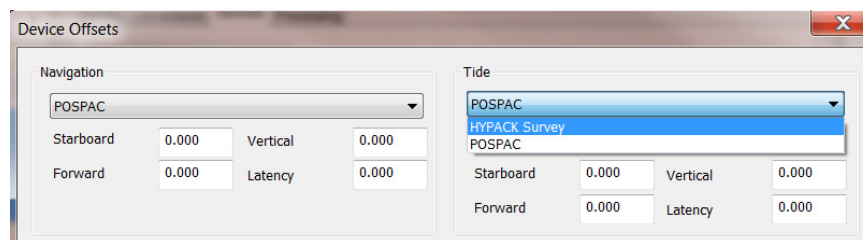


FIGURE 3. Device Selection Back to the Original Data (HYPACK® SURVEY).



SUMMARY

HS2 and HS2x files both store edited HYSWEEP® data (multibeam and LIDAR). HS2 files are smaller because they save the minimum data required for reedit and export. Extended HS2x files save everything.

The convenience of extended data easily outweighs file size and HS2x is the recommended format.