Working With XYZ Files in MBMAX64

By Mike Kalmbach

MBMAX64, the 64-bit HYSWEEP® EDITOR, is primarily used to edit multibeam and LIDAR survey files. It also works nicely with XYZ files. Almost all the depth editing and visualizations are there for XYZ.

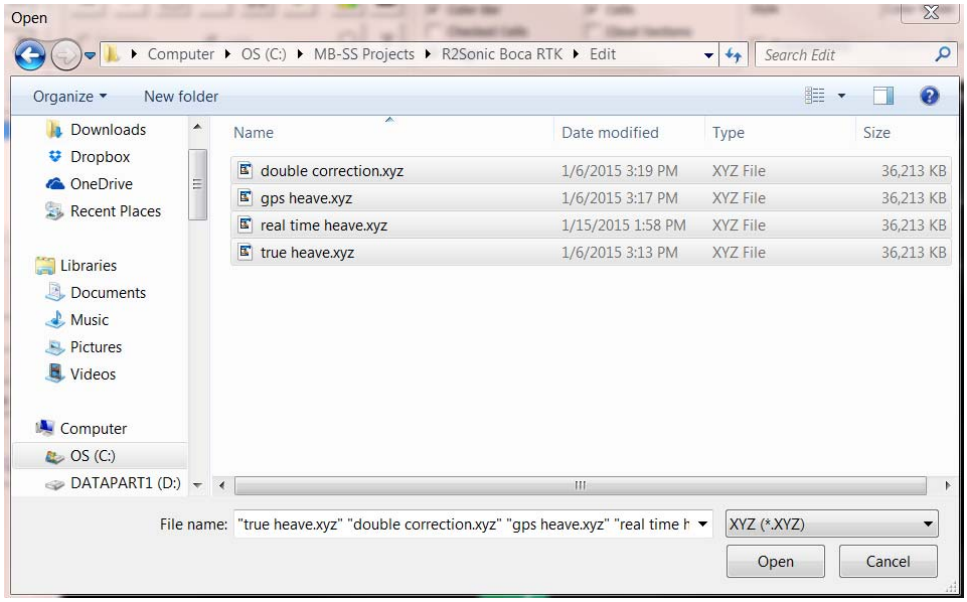
XYZ data files may be saved after changes, either all XYZ points or a gridded XYZ surface.

EXAMPLES

Here are two examples. In the first, we examine a single survey line processed using different heave methods. The results from each method has been saved to an XYZ file.

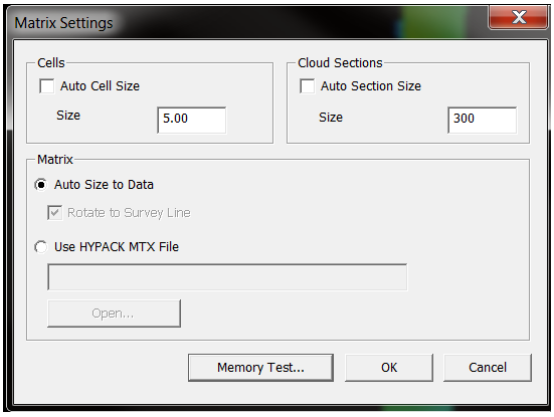
In MBMAX64, File Menu, Load Survey (or the Load button) gets things started. You can use multiple selection in the Open dialog (figure 1) or drag drop from Windows Explorer onto MBMAX64.

FIGURE 1. *In Open, select the four XYZ files for comparison*



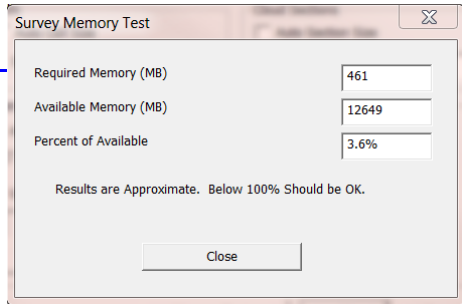
Matrix Settings (figure 2) pops up next. Enter cell and cloud section size, or Auto if you aren't particular. Auto size the matrix to data or use definitions from a HYPACK matrix file. Rotate to survey line is disabled because no line information is contained in XYZ.

FIGURE 2. *Matrix Setting defines matrix, cell and cloud section size and kicks off the memory test.*



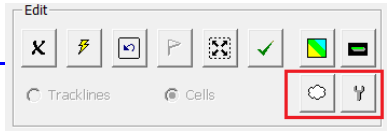
Click Memory Test to find out if your computer has enough memory to load the files. The Memory Test for these files is shown in figure 3.

FIGURE 3. *Memory Test. Only 3.6% of available memory is required to load these files. Full speed ahead!*



After files are loaded, the survey window shows the grid view of XYZ data. The Stage 2 (depth editing) tools and windows are available now. The Cloud Popup and A-B Cross Section tools (figure 4) are particularly useful for XYZ examination. Each of these work with the mouse. Click the Cloud then mouse down to outline an interesting area with a rectangle. Click the Wrench to see a cross section from point A to point B.

FIGURE 4. *The Cloud Popup and A-B Cross Section are great windows for XYZ data.*



Note that these tools are disabled unless the survey window is in map view. Note also that the A-B Cross Section is not available for XYZ files until HYPACK® 2015.

In this example, longitudinal cross sections are the best way to inspect data and compare the four methods (figures 5 and 6). It's easy to see that double correcting vertical boat motion (MRU heave + GPS vertical position, shown in red) is not the way to go.

FIGURE 5. *Lengthy A-B cross section shows trends.*

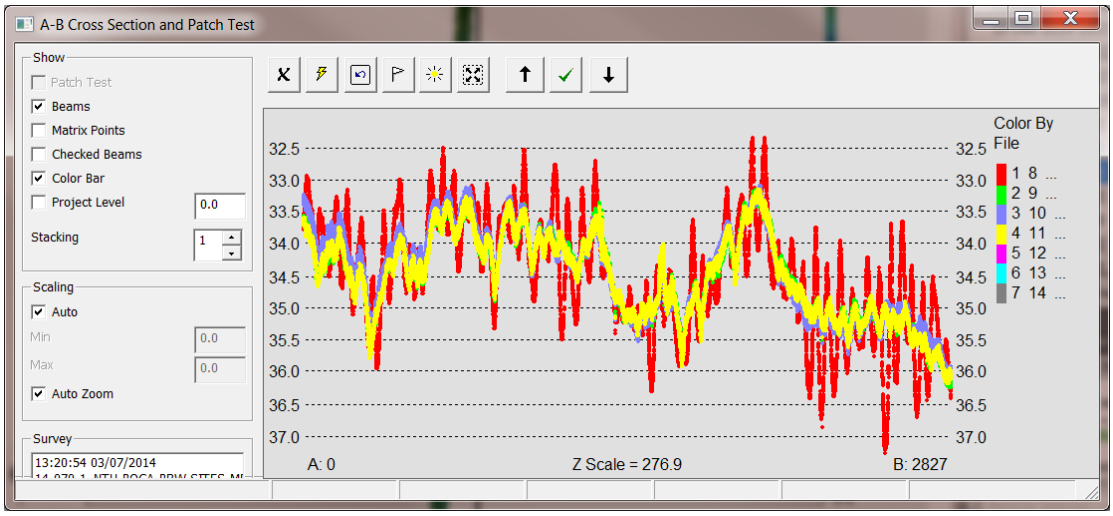
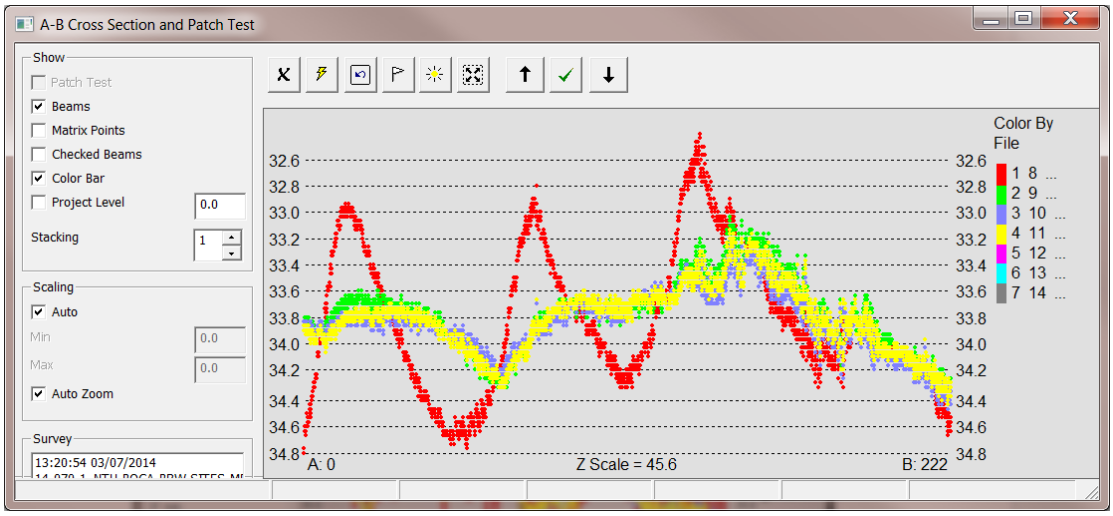


FIGURE 6. *Short A-B cross section shows the details.*



The 2nd example loads a wreck XYZ into MBMAX64. This is the Susan B. Anthony, sunk off the Normandy coast and surveyed by HYPACK® / HYSWEEP® as part of Operation D-Day. The Survey window (figure 7) shows median depth after gridding to one half by one half meter cells.

Click Cloud Popup and mouse size a rectangle for details. Figure 8 shows all the XYZ points within the rectangle.

FIGURE 7. *Grid view of a wreck.*

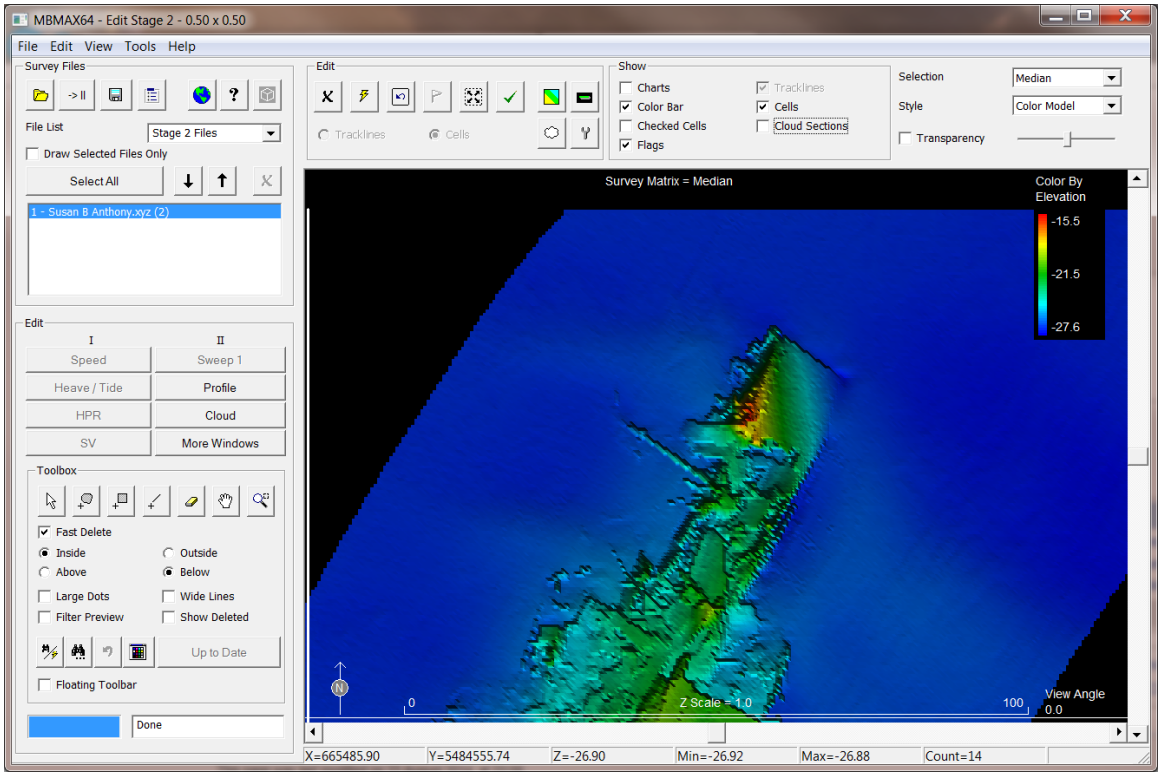
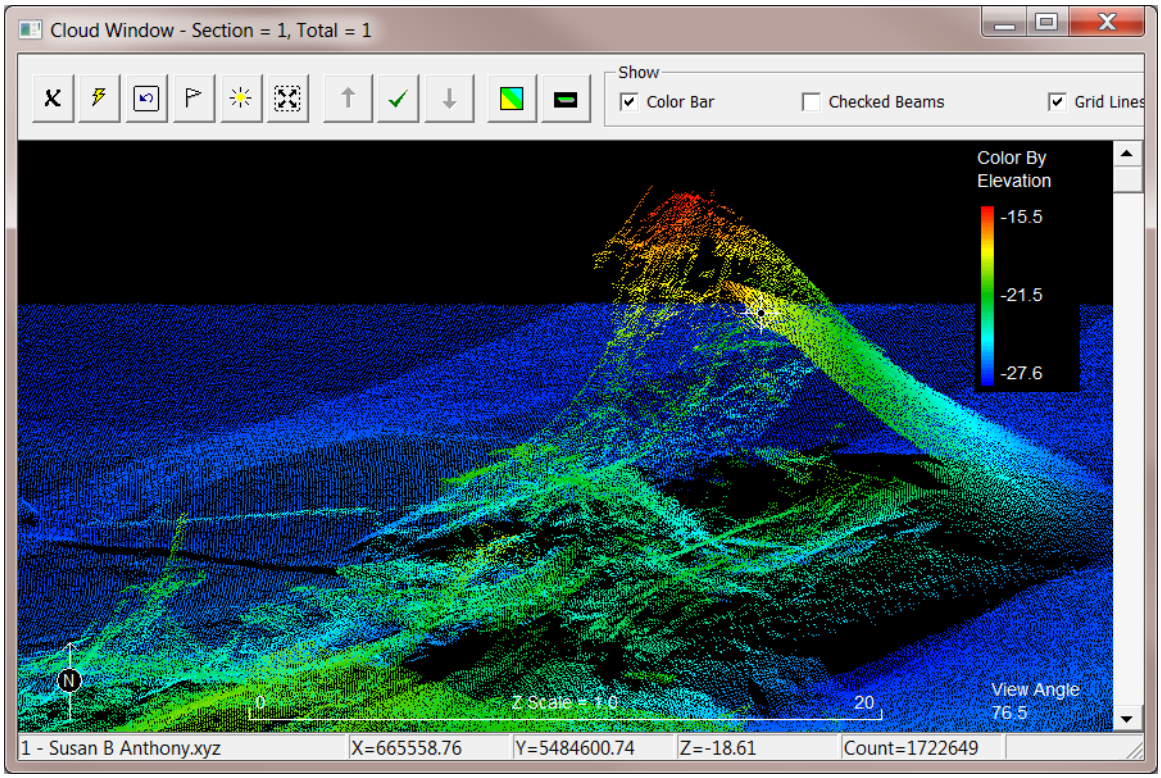


FIGURE 8. *Point cloud of a selected area.*



SUMMARY

MBMAX64 loads XYZ files and provides most of the depth editing tools available for multibeam survey files. The CLOUD Popup and A-B Cross Section windows are particularly useful for visualization and the occasional edit. Any editing can be saved to a new XYZ file. Gridded data can be saved as well, similar to HYPACK® MAPPER.

A-B Cross Section is not available for XYZ before HYPACK® 2015.