



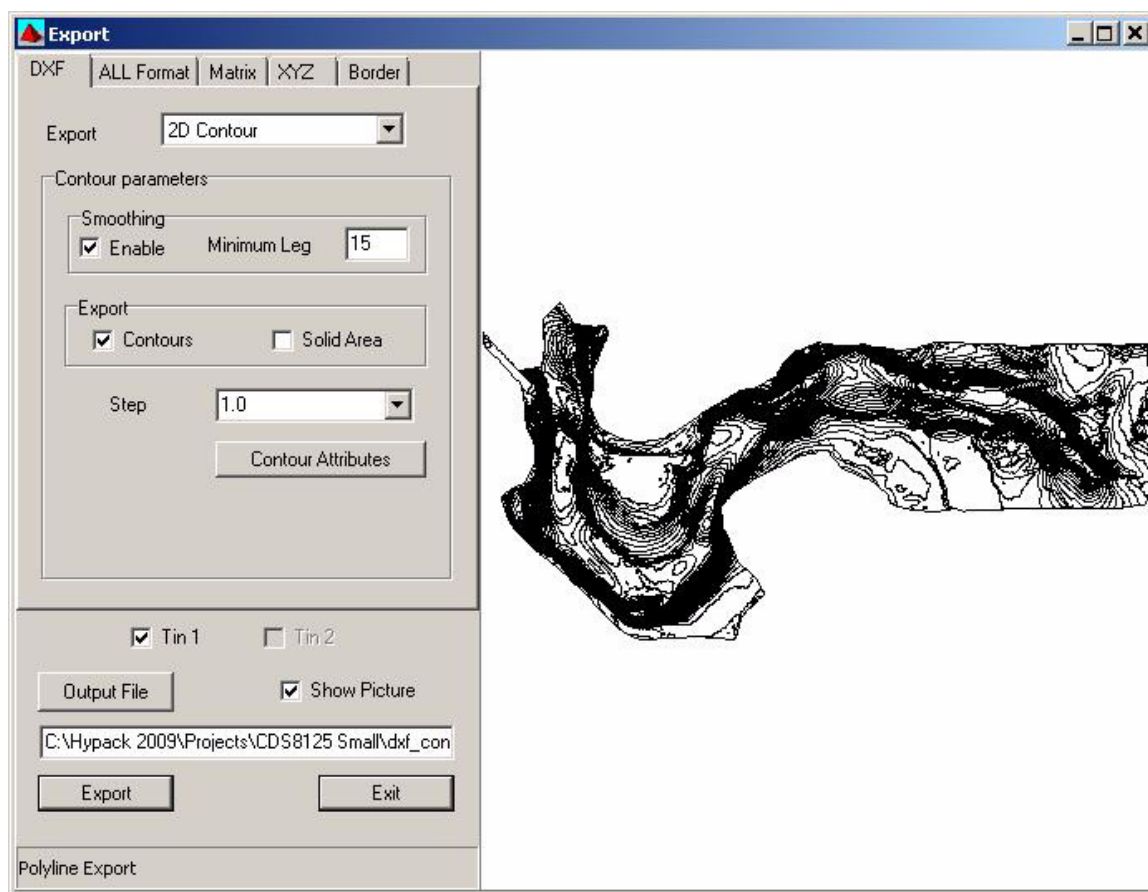
The Contour Editor

by Bill Bergman

Generating contours in HYPACK is easily accomplished using the TIN program. Load up a sounding set in the program and create a TIN model of it. Once accomplished, navigate to the Export dialog, and activate the DXF tab. Enter your desired contour parameters and attribute and click the Export button and the program will produce contours in the designated output file. The contours created will be saved in Autocad's DXF format.

The contour parameters and attributes determine how the contours will be created. These in turn will also effect how they look. The option of interest for this article is the check box that enables smoothing.

FIGURE 1. *Generating Contours in TIN MODEL*



With smoothing disabled, the TIN MODEL program will produce mathematically correct contours. Depending on the density of the original data set and, to some degree, the Maximum TIN Side (set when Tinning) and the Minimum Leg (set when contouring), the generated contours will have sharp edges and angles. Funny, but on paper charts, all contours seem to have gentle curves without abrupt direction changes. It is cartographic license to make a more eye-pleasing end product.

Enabling smoothing instructs the TIN MODEL program to attempt to produce this same effect when generating its contours. Many more points in each line will be required to smooth it so be aware that the generated file will be significantly larger when smoothing is enabled. The program really does a great job, trying to keep the smoothed line as accurate as possible while nicely rounding the edges; however, in areas of tightly packed contour lines where enough space is not available to accommodate the smooth algorithm, the final output may show contour lines that cross over one another.

FIGURE 2. Contour Comparison - no smoothing (left), smoothed (right)

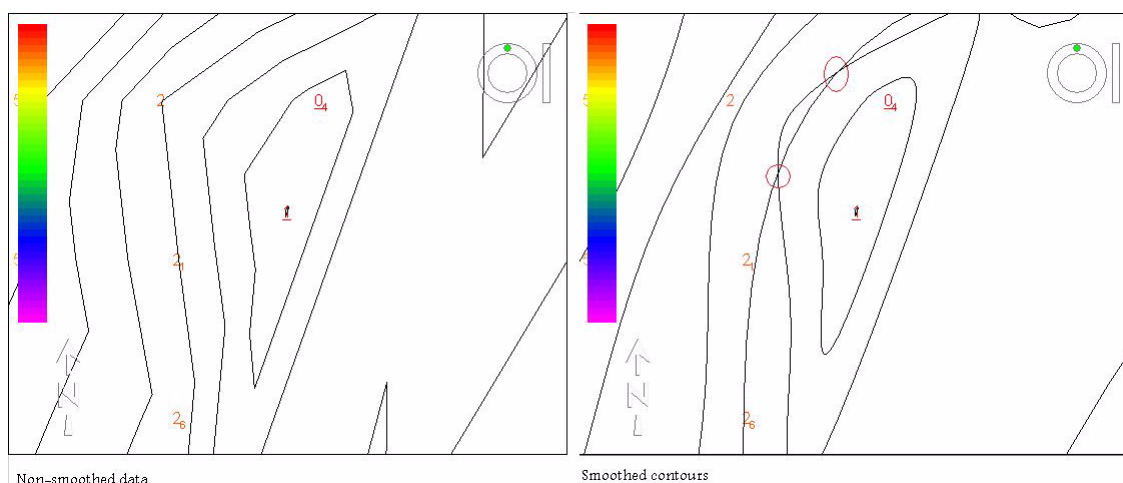
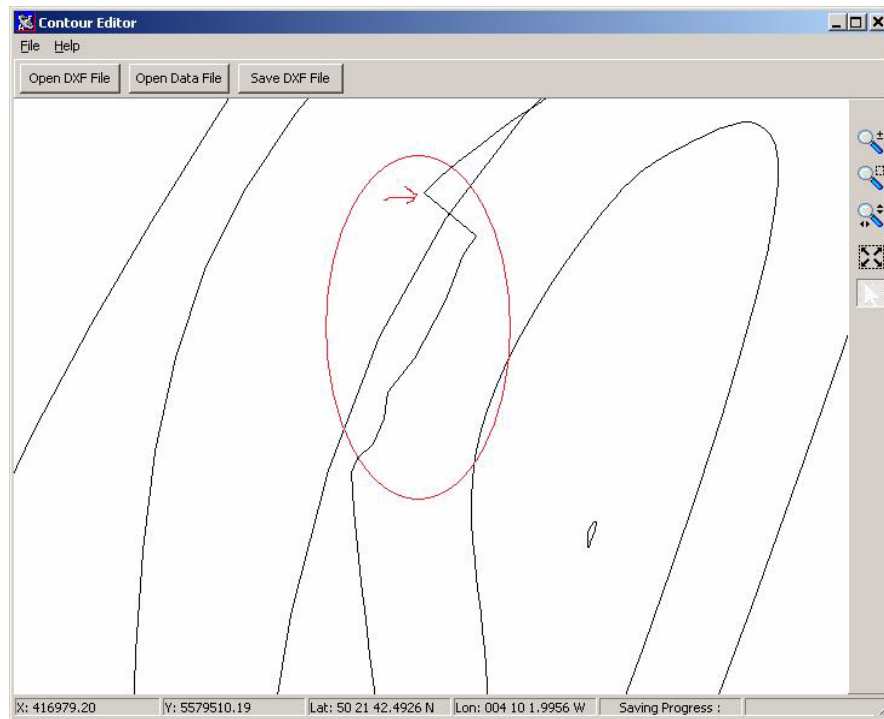


Figure 2 shows a side-by-side comparison of the contours resulting from a particular data set generated both with and without smoothing. I have focused on a section where a crossing contour line artifact has been produced and circled the intersection points in red. Depending upon the purpose of the contour output, this crossing will have varying levels of significance. If used for navigation, it is slightly confusing, whereas if used as input for the encEditor to make an S57 chart, it will definitely produce an incorrect result. In either case, one would like to 'fix' the problem.

FIGURE 3. *Correcting crossed Contours in the Contour Editor*



The Contour Editor program was developed to handle just this sort of need. Its use is amazingly simple but it does just the job.

Just load the problem contour file into the editor and navigate to the area where lines are crossing. With the arrow tool, click on a point on the offending contour line and drag it to its new destination.

In Figure 3, I have panned and zoomed to our problem spot. I have also dragged the first few points of the contour and repositioned them. The red arrow points at the next point to be moved.

Note: You can also load the original sounding data set as a backdrop. This is quite useful as it provides guidance in deciding an appropriate location for the new contour points.

When you are done correcting your contours, simply save the corrected file and you have a 'fixed' final product.