DXF Boat Shapes in HYPACK® 2014

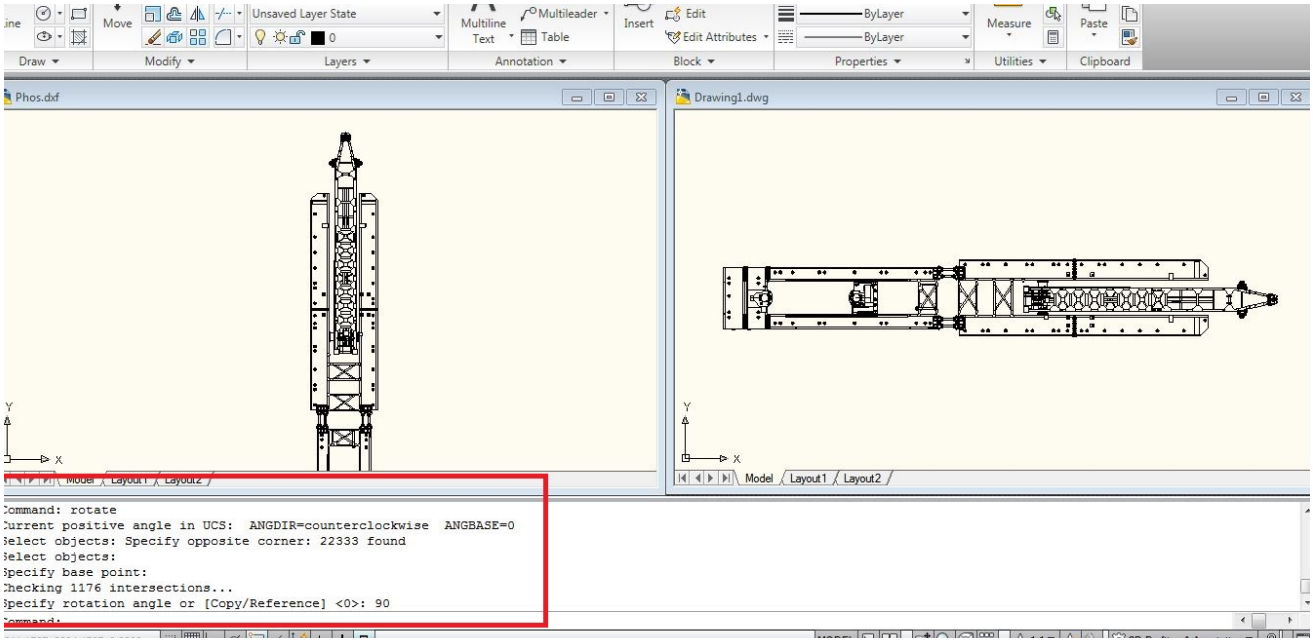
By Christian Shaw

We get a lot of emails and calls about DXF boat shapes in HYPACK®. These shapes can be displayed in the Map window in HYPACK® SURVEY to show the vessel position. The DXF file should be loaded in the Vessel dialog in SURVEY. When you click the button to choose your boat shape, change the “File of Type” to *.DXF. This shows you the *.DXF files in your Shapes folder.

The problem that we run into a lot is the correct format for the shape to display in HYPACK® SURVEY. There are a few things that need to be in place. This article will provide the list of things that need to be done so that the shape can be displayed. The *.DXF shape must have the proper rotation and scale, and the origin point set. The origin of the shape should be about the center of gravity (COG) for multibeam and single beam vessels, and at the trunnion pin for dredge applications. This is a general description of where 0,0 should be in the *.DXF file, but you can assign 0,0 anywhere in the shape.

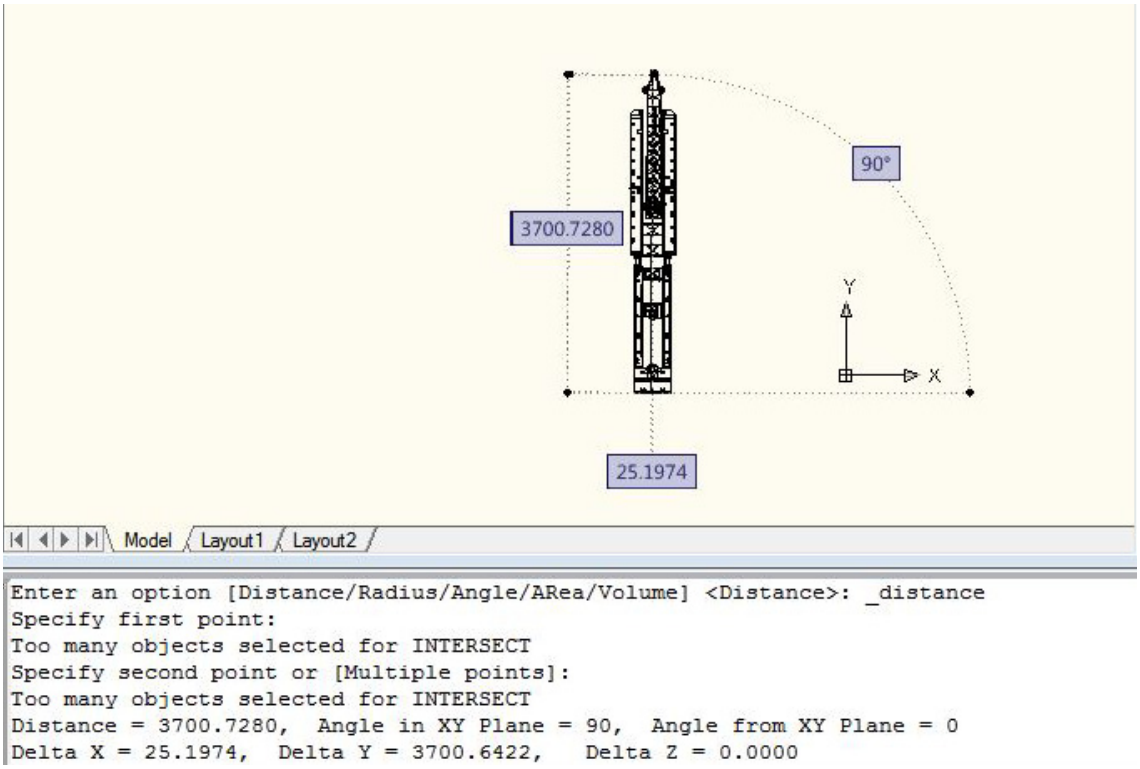
1. **The bow needs to be north and stern south, fore and aft.** In Figure 1, my dredge is left to right or in east to west orientation. To fix this, use the rotate command in your CAD program.
   a. Command: Rotate – (Enter)
   b. Command: Select all (Ctrl – A) – Enter

FIGURE 1.



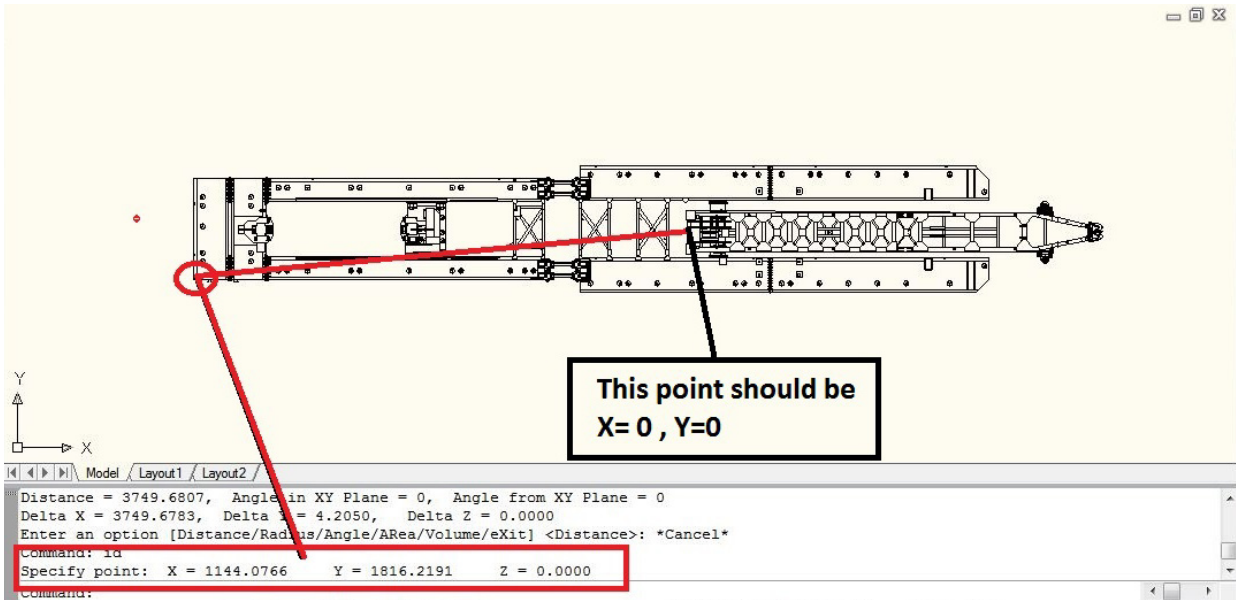
   c. When you specify base point select anywhere on the drawing line work. When you do, it will ask you how to rotate. Rotate 90 degrees.

FIGURE 2. Rotating the Drawing



2. **Find out where the 0,0 point is**. In this example, the coordinates are not local to a point in the line work. In Figure 3, the coordinate for the corner is X = 1144.0766 and Y = 1816.2191. This drawing was made with arbitrary points.

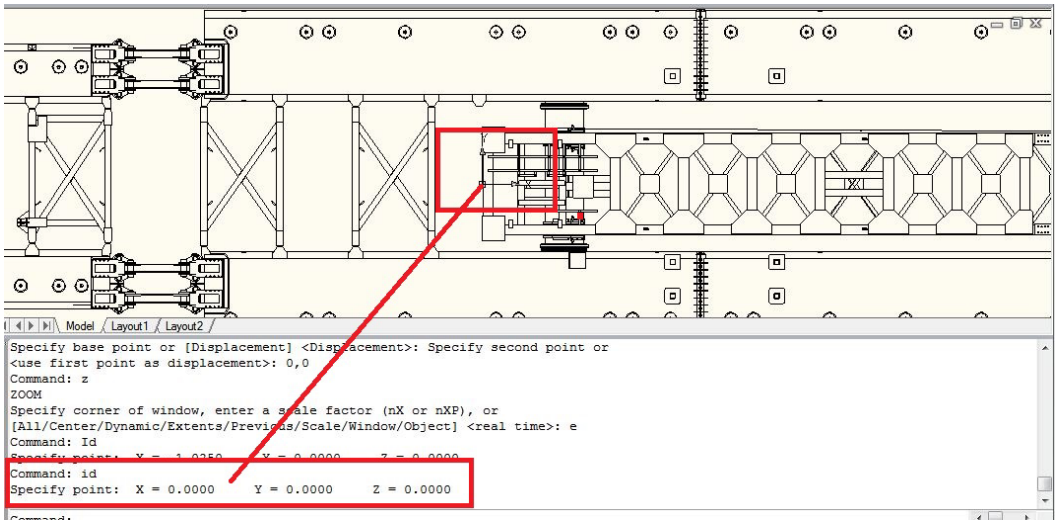
FIGURE 3. The Coordinate for the Corner is X = 1144.0766 and Y = 1816.2191



3. **Set the origin at the proper location for your vessel.** In your CAD Package use the following commands:
   a. Command: Move –(Hit Enter)
   b. Command: Select All - Enter
   c. Command: Specify base point or Displacement. Select the trunnion or the COG – Specify its displacement at: 0,0 (at COG or trunnion)

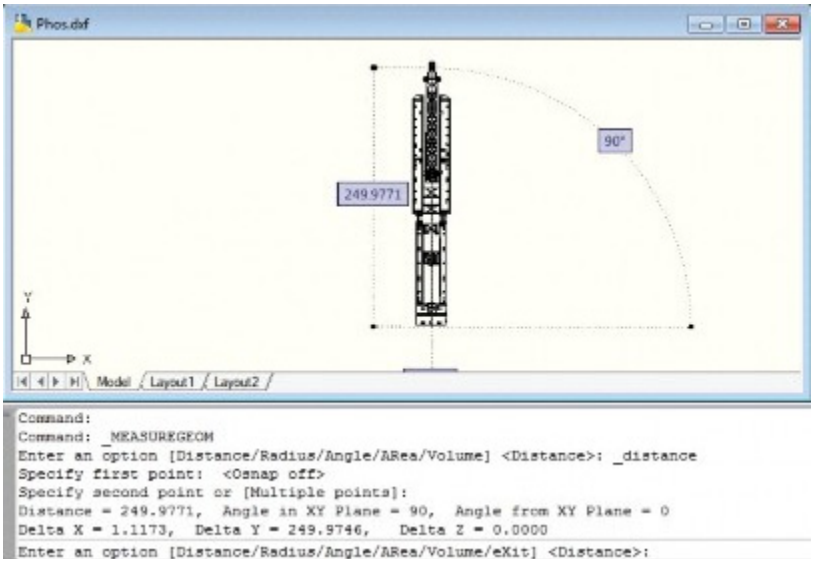
   In Figure 4, you will see that the trunnion is now at coordinate 0,0.

FIGURE 4. *The Trunnion is at Coordinate 0,0*



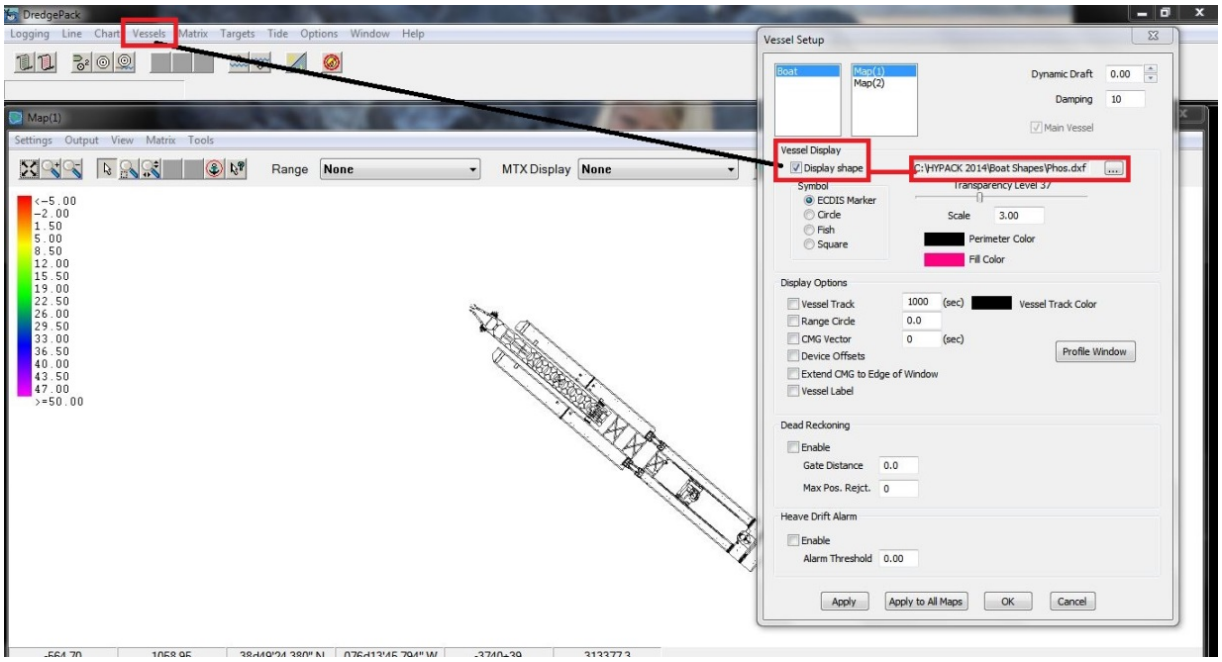
4. **Scale the drawing.** In this example, the dredge is 3700 feet long! In reality, it is only 250 feet in length. Divide 250 / 3700 to get the scale factor of 0.0675.
   a. Command – Scale
   b. Select all

FIGURE 5.



The final product can be seen below:

FIGURE 6. *The DXF Vessel Shape in DREDGEPACK®*



RULES ABOUT DXF FILES IN SURVEY AND DREDGEPACK®

1. All line work needs to consist of PLINES
2. Arcs and Circles will not draw.
3. Color is not available for DXF shapes. The shape will be black only.
4. DXF file should be in 2004 – 2010 DXF format.
5. If you do not want to scale your vessel shape in CAD, you can scale the DXF in the Vessel Setup dialog in SURVEY.

Perhaps in the future we will color the PLINES in the DXF line work, but DXF files currently have the most detail for your boat shapes.