Extending Rhino with Orca3D

Q: How would a sailboat designer position station 0 at the cutwater?

A: You would have to measure the location and enter it in the list; we will be adding a function to insert a section graphically by clicking on its location.

Q: Which modules/levels are separate cost items?

A: Level 1 = Hull Design, Hydrostatics. Level 2 = Hull Design, Hydrostatics, Resistance, Weight/Cost

Q: Can you analyze trim and heel angle changes with weight changes such as fuel tank changes?

A: Orca3D will find the equilibrium flotation condition, with a user-specified weight and center of gravity. Sinkage, trim, and heel are reported, and the model may either be transformed to the new orientation, or a planar surface may be inserted to represent the equilibrium flotation plane graphically. We are also working on tying the hydrostatics directly to the Weight analysis, but for now when you do something that causes the weight to change you have to enter the new weight value in the hydrostatics dialog and compute.

Q: When moving Orca3D control points in the Perspective view, do you have to select the plane restriction after you select the point?

A: No, you can specify the plane restriction before or after you select the point(s) to move.

Q: Can multiple flotation conditions be displayed on the same graph?

A: There are summary graphs just after the initial summary page for all of the conditions; it does not currently show righting arms or sectional area curves, just the main hydrostatics as a function of draft. We do plan to allow the user to customize the output reports in a future release.

Q: When will we be able to set model orientation (x,y,z)?

A: It is done in our development version; we are testing now for the next release.

Q: In the resistance analysis, is the power effective power or brake power?

A: The power that is initially computed is effective power. With the use of the two efficiency factors, you can define the total power however you like. Typically, factors are entered for appendage/wind drag, and for overall propulsive efficiency. For example if your efficiency input does not include gear losses, the power would be Shaft power.

Q: Is the horsepower reported metric hp or English hp?

A: It is English hp. If you wanted metric hp you would have to enter the conversion factor.

Q: Can you organize the line items on the weight report?

A: Currently the only way to do this is to export the report to Excel where you can order them any way you want; we plan to add some internal organizing functionality in a future version.

Q: Are there any dynamic stability results output, such as porpoising?

A: There is a basic porpoising check that is output for each speed; the check was developed as part of the drag prediction library which is developed by HydroComp, Inc.