Orca3D Reviews

We have used the Hull Design and Intact Stability features of the new Orca3D and can recommend them. The hull assistants have real time visual feedback for all input parameters, which is a huge time saver compared to RhinoMarine. The intact hydrostatics in Orca3D have been thoroughly improved over RhinoMarine with the introduction of Design Condition and multiple free trimming heeled resultant water planes.

"...thoroughly improved over RhinoMarine..."

As an avid user of FastShip, we also recognize the usefulness of OrcaMove features for precise control and very fast cross section updates. This feature was a great time saver in a reverse engineering project we recently performed. Without Orca3D, shifting between the flexibility of Rhino and the precision and response of an external hull shaper was tedious. With Orca3D, we could reach the entire toolbox of Rhino, like Sweep2 or NetworkSurf. Then with PointCloudSection and Orca3D Sections one can quickly compare the candidate to the target. The great internal display options of Rhino came in handy in judging the fit compared to 1/4 million data points. The last stage was a combination of fairing the sections and surface while running PointDeviation in real time. We are quite satisfied with the outcome.

We look forward to exploring the resistance models available and to the new developments coming in future releases. Keep up the good work!

Doug Schickler
Schickler Tagliapietra Yacht Engineering

A must have tool for any Naval Architect/Design Office...

Orca3D is certainly the perfect companion for Rhinoceros, adding new commands and features that allow you to properly and efficiently deal with virtually any waterborne project.

Hydrostatics & Stability (H&S) built-in code is very robust, accurate and fast. You can analyze virtually any type of hull geometry, no matter whether it is a monohull or multihull of any kind, with a full degree of confidence on the results obtained.

Orca3D's different approach for processing Hydrostatic & Stability calculations makes it quite versatile and immune to usual 3Dmodel flaws, i.e. when you finish with naked edges below waterline, or singular points (singularities) and so, allowing you to override this problem and get H&S calculations for your model, even when the hull is not perfectly modeled.
Moreover (a detail that it is usually paid not enough attention) H&S reports are very well designed and the information dumped in them very well organized. Making them very easy to read and follow, to let you quickly find the information you're looking for.

Another interesting new feature in Orca3D is the Real Time Hydrostatics, that let you keep track of main hydrostatic parameters (and its evolution) while editing hull's affected surfaces.

But with Orca3D you're not only limited to Hydrostatics & Stability calculations. There are more modules/features available in Orca3D, each of them specifically designed to assist you with the usual tasks at different stages of the project.
For example: If you don't consider yourself a true expert in 3D modeling, but you need to come up with a hull model... don't worry!, the built-in Hull Assistants will let you overtake this handicap, allowing you to quickly come up with a well shaped hull (ship, planing and sailing) and with just the input of some of
its main generic geometrical parameters. You can also pre-visualize hull hydrostatics while defining the main parameters in order to be sure that when the hull geometry is created, it will comply with the desired characteristics

Real time Sections is perhaps one of the best/more useful tools available today, to assist you with the modeling process of any Rhino complex free form shape. This is certainly one of my favorite modeling tools, since you can define in a fast, clear and easy manner, as many sections as you want on the surfaces that you want to edit/modify; and grouped according to its normal vector's orientation, which can be virtually oriented in any direction: Sections, Waterlines, Buttocks and more... The ability to assign different colors to the sections, greatly enhance its visualization/identification.

This is certainly a very useful tool, not only to assist you with the 3D Modeling process of any form, because it provides you with a drastic enhancement on surface's visualization in the way that Naval Architects want/like to see and analyze them, but also if you also have to produce accurate NC patterns out of your 3D model for moulds/parts manufacturing, or if you have to deal with a (usually difficult and time consuming) reverse engineering project, that is, to produce/input a 3D Model of a hull starting from just a poorly printed "lines drawing", or an "offsets table" of any - questionable - source.

Another tool worth to mention is Orca3D's Weight and Cost Calculator. This tool lets you overtake current Rhino's missing "mass" calculations, allowing you to either define "Mass and/or Cost Densities" on current Rhino entities (points, lines, surfaces/polysurfaces and volumes) or assign a specific weight/cost directly on them. You can also let Orca3D compute entity's CG from its own geometry, same way as Rhino does with its surfaces and volumes, or otherwise assign it to a pre-defined point in World Coordinates.

This is certainly another very interesting and flexible tool when you have to work with weight/cost computations, either at an early design stage, when there are more things not yet defined than the ones already established, or when already at vessel's construction stage, to keep track on the weights that are being added or deleted.

Remember, Weight engineering is a good/proper & highly recommended practice that sometimes, and more often when dealing with small projects (either in size or budget), it is not paid enough attention or simply neglected. Failure to achieve a good weight estimation & control can finish in a complete project failure, and with drastic consequences to all parties involved in it. Orca3D provides you with an excellent, yet simple, tool/resource to properly deal with this important aspect of any project.

To finish, a good software for Naval Architecture wouldn't be complete without a resource for Powering calculations. Orca3D already includes two of the most popular and well proven

Resistance/Powering Prediction methods. The Holtrop method for displacement hulls/ship forms and the Savitsky method (long form) for planing hull forms.

Of course, if you need to perform a resistance analysis with a prediction method not yet implemented here, Orca3D & Rhinoceros tools will greatly help you to ease the - sometimes cumbersome & time consuming - process to come up with all those, usually "intricate" or hard to compute, hull parameters (wetted surface, entrance angles, wetted girth, weight/displacement for any condition, CB or CG position, etc., etc.) that you need to deal with any other prediction method.

Of course, there are some more good features and functions available in Orca3D, but given the limited space for this review (which has already gone longer than I expected...), I invite you to explore for yourself. Do not hesitate to download the software and try it.

Last, but not least... and you can truly prove this for yourself. Perhaps the best thing behind Orca3D it is not only the code, its robustness and features described above..., but its people. You will find/meet a highly qualified group of experts, Naval Architects that speak the same "language" as you, willing to properly assist you when you need support.

Martin Monteverde
Naval Architect, Buenos Aires

If you are a marine user of Rhino then Orca3D will make your life easier.

Orca3D is intuitive with helpful video tutorials, which got us up to speed quickly.
We find its many features automate and keep our work
flowing smoothly. It makes quick work of Hydrostatics **"5 stars from this office."**
and Stability
calculations, giving us logical choices with radio buttons
and data entry fields for the variations needed. The reports are clean and easy to read.
Some of our clients still need paper 2D line drawings and offset tables, which Orca3D can produce.
Orca3D quickly creates Stations, Waterlines, and Buttocks planes to give a nice clean product for our customers. 5 stars from this office.

Andrew Williams
3D Measure, Inc.