Pushing the Limits of Offshore Racing: IMOCA Partners with Orca3D

In the high-stakes world of offshore racing, every design decision can mean the difference between triumph and disaster. The International Monohull Open Class Association (IMOCA), organizer of the legendary Vendée Globe and a key player in The Ocean Race, has long been at the forefront of innovation in competitive sailing. Now, with Orca3D as an official Technical Partner, IMOCA is strengthening its approach to performance and safety through precise digital analysis, all within a Rhino3D-based environment.

ENHANCING PRECISION THROUGH DIGITAL

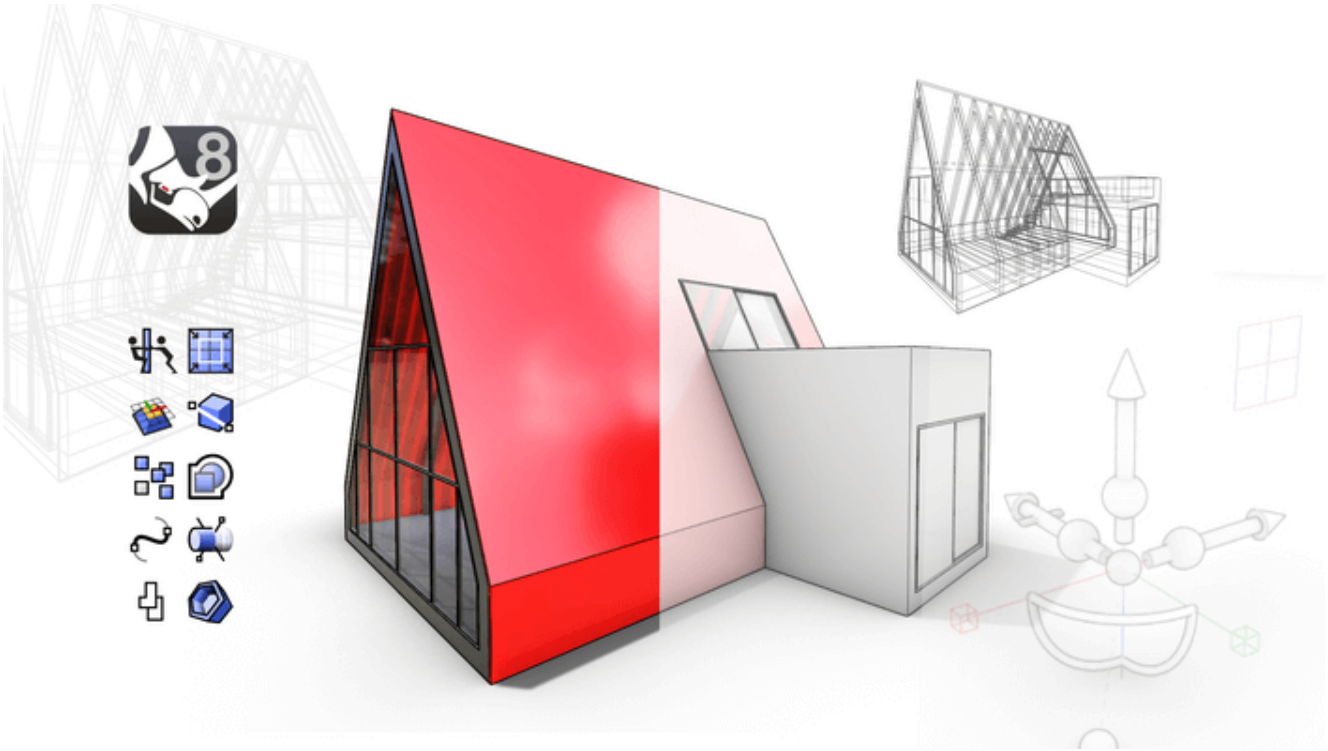
STABILITY

Each IMOCA 60 yacht is a technological marvel – engineered to endure some of the planet's most punishing oceanic conditions. The role of Orca3D in this context is critical. With its powerful stability analysis tools, the software helps ensure that every boat meets IMOCA's strict criteria for safety and performance. The dynamic nature of offshore conditions requires simulations that can adapt to a broad range of boat configurations.

IMOCA relies on Orca3D's capacity to carry out extensive stability checks across countless design scenarios, from hull shape to appendage movement. This capability gives designers the confidence to explore performance enhancements without sacrificing structural integrity.

WHY ORCA3D?

The decision to adopt Orca3D across the IMOCA fleet was based on a combination in a combination of technical needs and long-term vision. Rhino3D's modeling capabilities provided the robust 3D environment needed to develop and refine detailed boat geometries. Complex forms – such as canting keels and foil systems – are commonplace in the IMOCA 60 class, and Rhino's geometry engine provided the flexibility required to model and adapt these designs with accuracy.



See Also

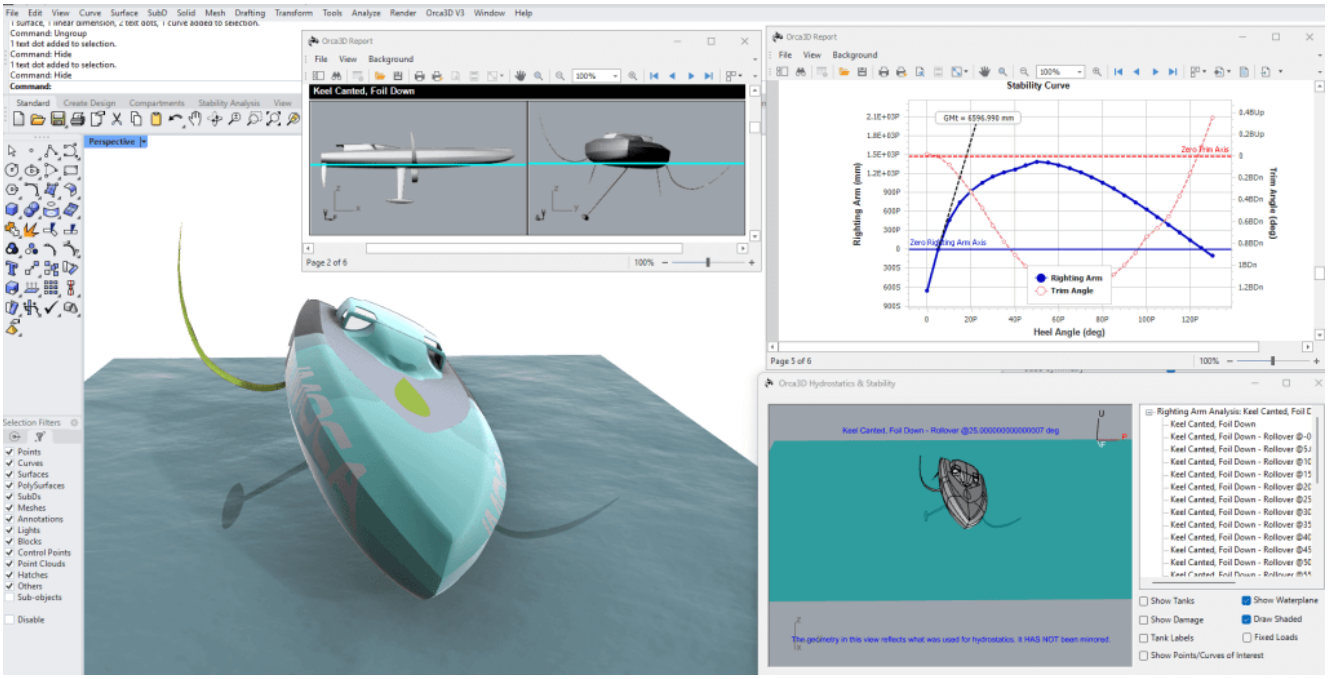
INTRODUCTION TO RHINO 8

Orca3D’s scripting tools became essential in automating stability checks across multiple trim conditions. These features allowed teams to simulate the impact of mobile appendages in real time, providing quantitative feedback to guide design choices. In a field where safety is non-negotiable, this analytical efficiency is a game-changer.

Equally important was the level of support provided. Orca3D and its partner NDAR offered tailored training sessions and technical assistance to the IMOCA community. This helped democratize access to advanced tools, giving teams – regardless of their resources – an equal footing in applying performance analysis.

> ***The partnership with Orca3D has been a game-changer for our design process. Their tools, especially the scripting feature, allow us to fine-tune every aspect of the IMOCA 60. Orca3D’s technical support, led by Stéphane Dardel at NDAR, and their commitment to training have been invaluable in helping us push the boundaries of what’s possible in racing.***

— *René Boulaire, Chief Measurer, IMOCA*



REAL-WORLD RESULTS

This partnership's impact was on full display during the 10th edition of the Vendée Globe. The winning yacht, *MACIF SANTÉ PRÉVOYANCE* — designed by Guillaume Verdier and skippered by Charlie Dalin — was developed with the support of Orca3D's stability tools. Not only did it withstand the extreme demands of solo circumnavigation, but it also broke the race record, completing the course in under 65 days — a powerful testament to the synergy between advanced design methods and performance optimization.

A SHARED VISION FOR THE FUTURE

Beyond performance, the collaboration also contributes to unifying design and safety protocols across the IMOCA Class. Standardizing analytical procedures means that all teams evaluate their designs from the same technical foundation, helping reduce variability and raising the overall standard of competition.

Moreover, IMOCA's commitment to sustainability finds a natural ally in this process. With every hull optimized for efficiency and resilience,

and with designs increasingly leveraging lightweight, eco-conscious materials, the role of accurate digital analysis becomes even more critical.

> ***Orca3D is proud to be part of the journey, supporting the next generation of ocean racers and the ongoing quest for excellence in offshore sailing***
> *– Bruce Hays, Co-Founder and President, Orca3D, LLC*

SAILING INTO THE FUTURE

IMOCA's collaboration with Orca3D highlights the growing role of computational design tools in shaping the future of marine engineering. Rhino3D provides the modeling foundation while Orca3D builds upon it with tailored analytical tools that empower teams to make informed, performance-driven decisions.

As offshore racing evolves, this partnership signals a new chapter: where safety, speed, and innovation go hand in hand, not only for those aiming to cross the finish line first, but for the broader

sailing community navigating the future of ocean exploration.

[Download a free 15-day evaluation license of Orca3D.]