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## CFD Holds the Key to Understanding Boat Performance

You don't have to be a boat racing fanatic to remember the infamous side-by-side blow-over of identical high-performance catamarans during a competition in Key West in 2019. Even casual followers of the sport can recall the dramatic incident at Race World Offshore World Championships.

The accident caught the specific interest of Scott Porta, owner of Porta Performance, who was racing just ahead of the simultaneous side-by-side blow-over. He reached out to our own Naethan Eagles and they used CFD to calculate the specifics behind the boat's simultaneous flips and find possible countermeasures to reduce the risk of something similar happening again.

Read [our full case study](#) in *Professional Boatbuilder Magazine* to learn what they found and what it means for the future of boat design.

Figure 5a. CFD of Air Velocity on Single Boat

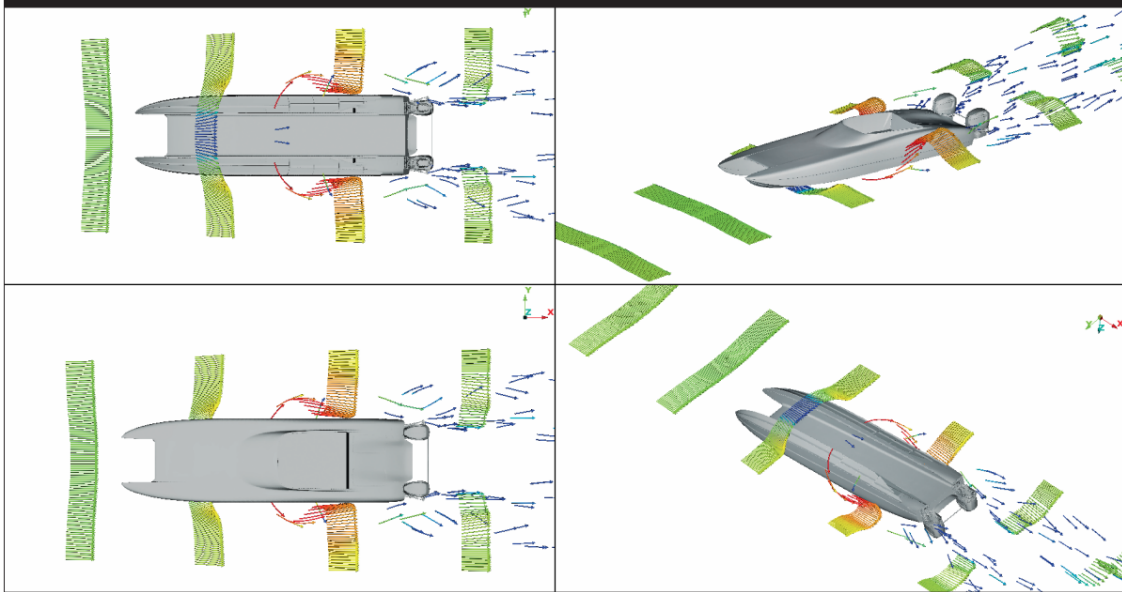
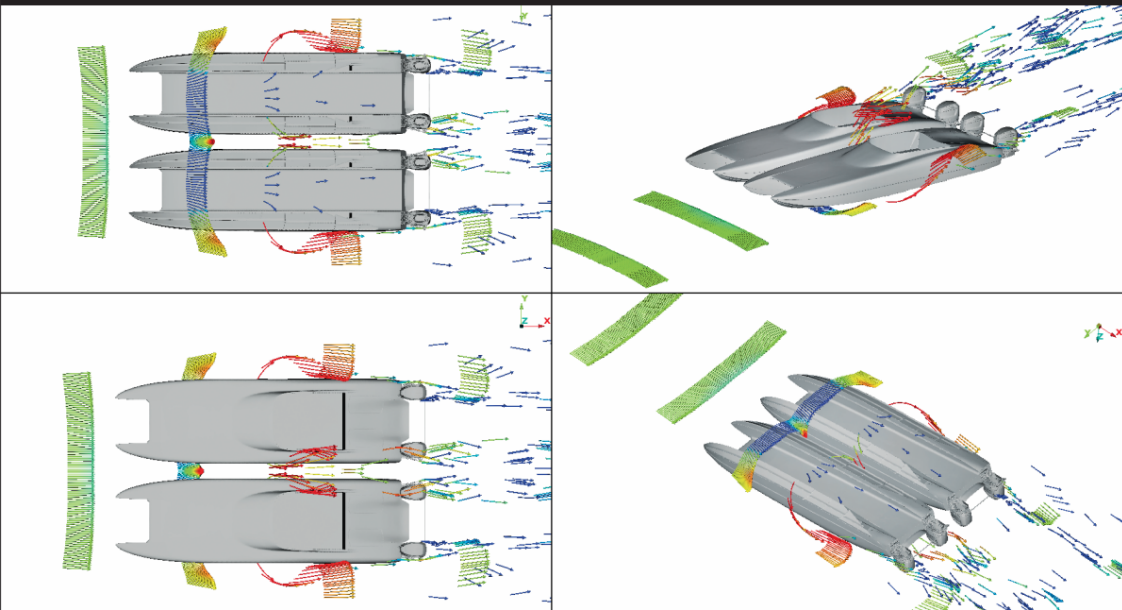


Figure 5b. CFD of Air Velocity on Boats Running Side by Side



If you're curious about our other work with Porta Performance, [read more](#) about our past collaboration using CFD to analyze the hydrodynamic performance of hull design.

While you're at it, check out all of our [marine capabilities](#)!

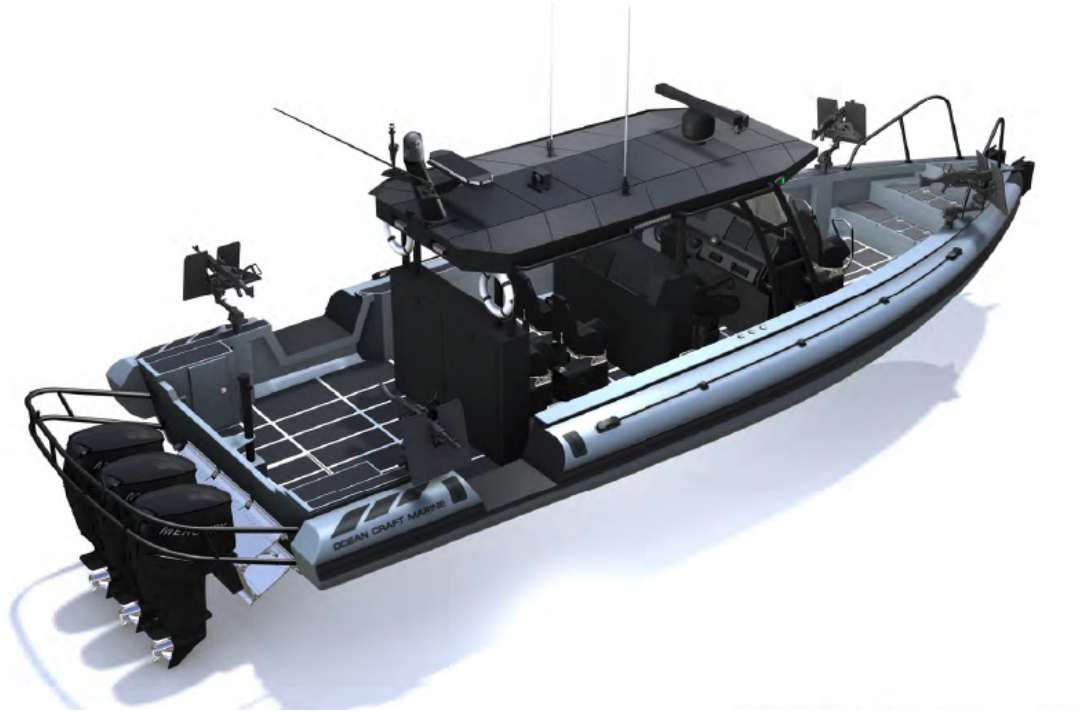
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## Look Back on IBEX 2023

Naethan had a great time representing TotalSim at the IBEX show (International BoatBuilders' Exhibition & Conference) this month and speaking on a panel about the ways CFD can be used to predict shock and vibration in hull engineering. He was joined by fellow members of [Perfect Storm](#) on stage and together they got into a full depth analysis

of the development and design of an ideal hull and the work they do on shock mitigation for the “Boat of the Future”

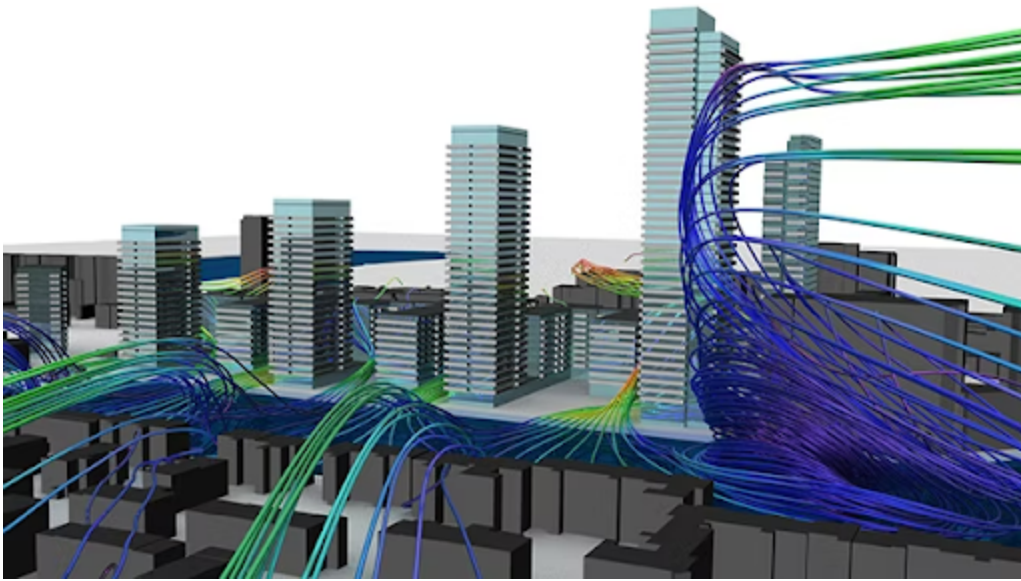
He was also able to catch up with our friends at Porta Performance, including Scott Porta, who shared that he’ll be racing at the [Key West Offshore Championship](#). TotalSim had the opportunity to provide analysis of the boat and we are looking forward to seeing it in action again and cheering Scott on at the last race of the season.



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## Spotlight On: Architectural Building Systems

Our CFD workflows and capabilities for [architectural systems](#) help clients account for everything from HVAC to Pedestrian Comfort. Using CFD in the research and development state of a project reduces the number of physical prototypes and testing, while still evaluating all necessary conditions.



Recently, our architectural systems capabilities assisted a major Columbus hospital in fixing an unpleasant odor that was permeating certain floors and rooms and negatively impacting the reputation of the hospital and quality of life for those surrounding the establishment.

We were able to use our workflows to simulate HVAC intake and exhaust and identify the source of the smell, as well as confirm the best solution moving forward. [This project](#) was just one example of the many ways our architectural building systems can solve issues such as this one with efficiency and proven accuracy.

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## TotalSim Takes On PRI

The TotalSim team will be in Indianapolis for PRI this year and we're looking forward to sharing how digital wind tunnel testing can help all levels of racing improve lap time and lower research and development costs.

Naethan [will be speaking at PRI](#) on December 7th at 1:00 p.m. He will also be hosting a question and answer session Friday, December 8th at 2:00. This will be a time to delve deeper into the ways CFD simulation and testing can benefit the motorsports and automotive industries. We hope you can join one or both of these sessions!

# **PRI** SHOW

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DECEMBER 7 - 9 , 2023  
INDIANAPOLIS INDIANA

**VISIT US AT BOOTH 133**

**Don't miss a presentation on Racecar Aerodynamics  
by our Technical Director & co-founder, Naethan Eagles**

Thursday, December 7, 2023, from 1:00 p.m. – 2:00 p.m.

## **Follow-up Discussion and Q&A Session**

Friday, December 8, 2023, from 2:00 p.m. - 3:00 p.m.

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### **Upcoming Events**

International Workboat Show // Nov. 29 - Dec.1 // New Orleans, LA

PRI // Dec. 7 - 9 // Indianapolis, IN

Ohio Air Mobility Symposium // March 4-5 // Columbus, OH

Work Truck Week // Mar. 5 - 8 // Indianapolis, IN

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## Industries Where We Excel



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