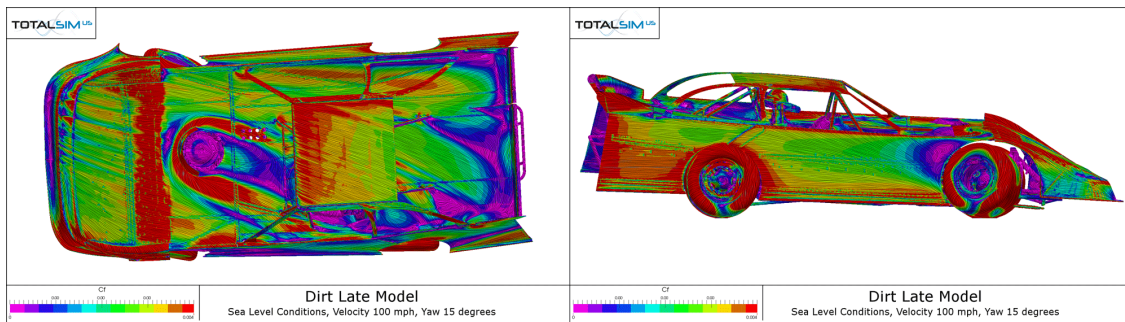


CFD isn't Just for the Big Boys

TotalSim will be returning to the [PRI Show](#) this December 7th and it has us reflecting on a [feature we did with PRI Magazine](#) last year on the ways CFD is no longer a tool only available to the big names in motorsports.

In the last 30 years, top motorsports teams have adopted cutting-edge technologies, including CFD, which has become accessible to a wider audience. CFD serves as a digital wind tunnel, aiding in product development and performance mapping.



CFD provides aero data, allowing for the exploration and optimization of a vehicle's performance under different scenarios. It offers the flexibility to enhance existing designs, making it a valuable tool for both elite teams and enthusiasts.

TotalSim, with extensive experience in digital engineering and CFD, offers tools that eliminate the need for expensive wind tunnel testing. Our automated workflows bring top-level technology to all levels of racing, serving clients ranging from large-scale teams to hobbyists, showcasing deep expertise in designing and developing race cars across various categories. Learn more about our [motorsports capabilities](#) and how they can help you with any project you want to take on.

Ray Goes West for a Joy Ride Down Memory Lane

Back in September, Ray took a trip out west to California to visit his old friend ex IndyCar driver Bryan Herta. Ray was Bryan's race engineer from 1996 to 1999 and the two worked together through many successes at Rahal Letterman Racing, particularly at Laguna Seca where they secured pole position three out of four years. Their work also led to Bryan's first win in 1998 at the same race.

Fast forward 25 years to May 2023 and Bryan's son Colton, an IndyCar driver for Andretti Autosport since he was 18, surprised his father with the purchase of the actual 1998 race-winning car for his birthday.



Recently, Bryan decided to have Colton run the car at Laguna Seca, using a Cosworth XD 8-cylinder turbo engine with over 900HP just like in '98. The plan involved a demonstration with the old crew reuniting for the event after successful test runs. Including Ray, Bryan had the crew from the '98 Rahal team, including Cosworth Engine engineers and others who still work in the IndyCar paddock, along for the special day.

Ray was happy to jump back in his old role, prepping a setup for the car (he still had his old notes!) and helping the mechanics get ready for the day. It was super fun to be able to witness the father and son duo share the track at Laguna Seca and 'relive' Herta Senior's first win at WeatherTech Raceway 25 years later!



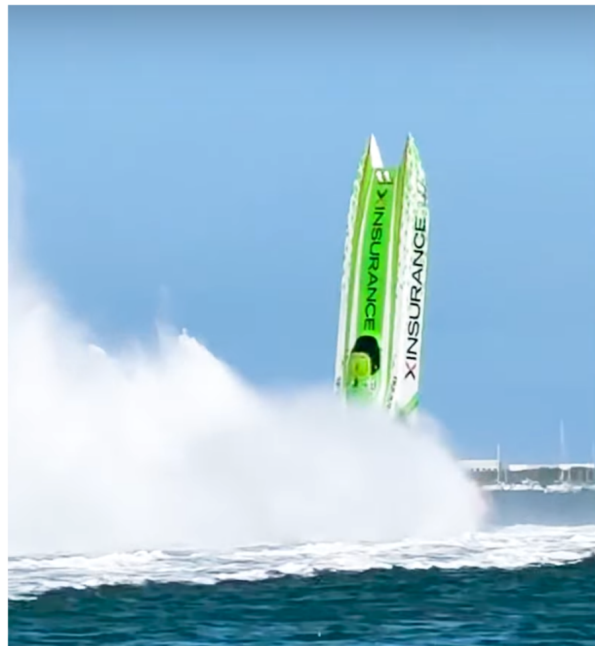
It Happened Again! CFD Solves the Danger of Boats Flipping While Racing

This year at the Race World OffShore World Championships, we saw a repeat of an incident that occurred in 2019 when there was a boat flip over on day two. TotalSim has already delved into the cause of these events in a [case study](#) with [Professional BoatBuilder Magazine](#) that is especially relevant since it continues to occur.

2019 Flipover:

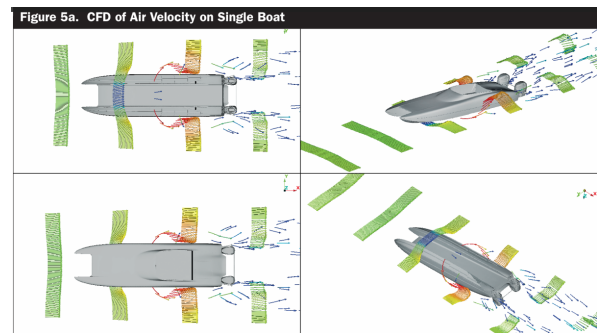
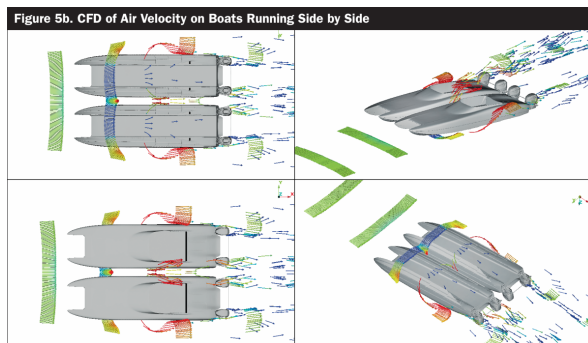


2023 Flipover:



During the 2019 Race World Offshore World Championships, two Doug Wright 32' catamarans experienced a simultaneous "blow-over" incident in the Super Stock class race. The side-by-side configuration created compressed tunnel air, increasing pressure and causing the boats to flip. CFD analysis by TotalSim revealed the disruption in lift and downforce balance, leading to instability.

The study highlighted the importance of aerodynamics in boat design, suggesting the need for sufficient gaps between boats and potential use of devices to counteract lift. Real-world aerodynamics play a crucial role in powerboat design and manufacturers are increasingly using CFD modeling to optimize aerodynamic performance.



TotalSim Takes on Indy for PRI 2023

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, our technical director, [will be speaking at PRI](#) and also hosting a question and answer session to delve deeper into the ways CFD simulation and testing can benefit the motorsports and automotive industries. [Reach out](#) to us if you want to connect prior to the show or catch us at **booth #133**.

TOTALSIM^{US}

YOU'RE INVITED!



Race Car Aerodynamics Presentation Applicable to different race series that use aerodynamics, from grassroots to dirt series to NASCAR, Indy & Formula 1

Thursday, December 7, 2023
1:00 p.m. – 2:00 p.m. | Meeting Room: 231-232

Can't make it on Thursday? No problem.

Join us for a follow-up discussion and Q&A to answer your specific car or aero questions!

Friday, December 8, 2023
2:00 p.m. – 3:00 p.m. | Room 245



About our Presenter

Naethan Eagles, TotalSim's technical director and co-founder, has 25 years of experience in aerodynamic design, CFD, wind tunnel testing, and implementation. Prior to TotalSim, Naethan started and grew the CFD department at Williams F1 and worked at ACFD, BAR F1, and Rolls Royce.

www.totalsim.us

Upcoming Events

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

Industries Where We Excel



Copyright (C) 2024 TotalSim US. All rights reserved.



