

Using Data to Confirm Aero Gains



Host:

Roger Caddell

AiM Sports - National Training Manager

Co-Host:

AJ Hartman

AJHartmanAero.com

Co-Host:

AJ Hartman

www.AJHartmanAero.com

$$Cd = D / (A * .5 * r * V^2)$$



- Longtime Racer and 2019 NASA American Iron National Champion
- Aero Professional Since 2013
- Has Relied on Data of All Types For His Business and His Racing
- 1st Time AiM Sports Webinar Co-Host!



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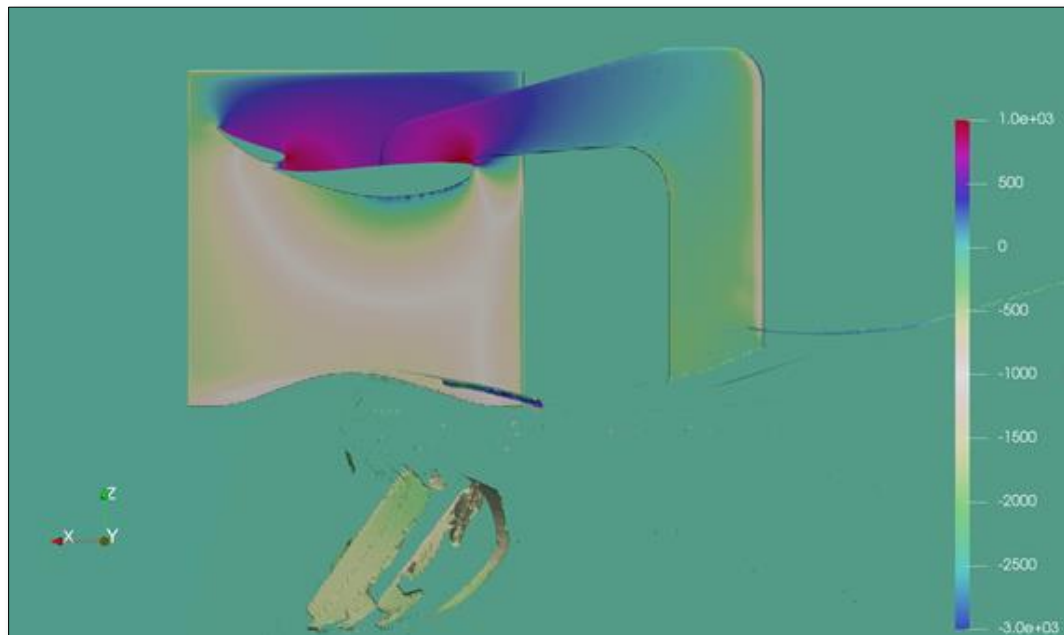
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Aerodynamics Basics

Downforce vs. Drag



Data to Confirm Aero Gain

Aerodynamics Basics

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Wind Tunnel

A Different Form of Data!



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Data to Confirm Aero Gain

Free Aero Testing

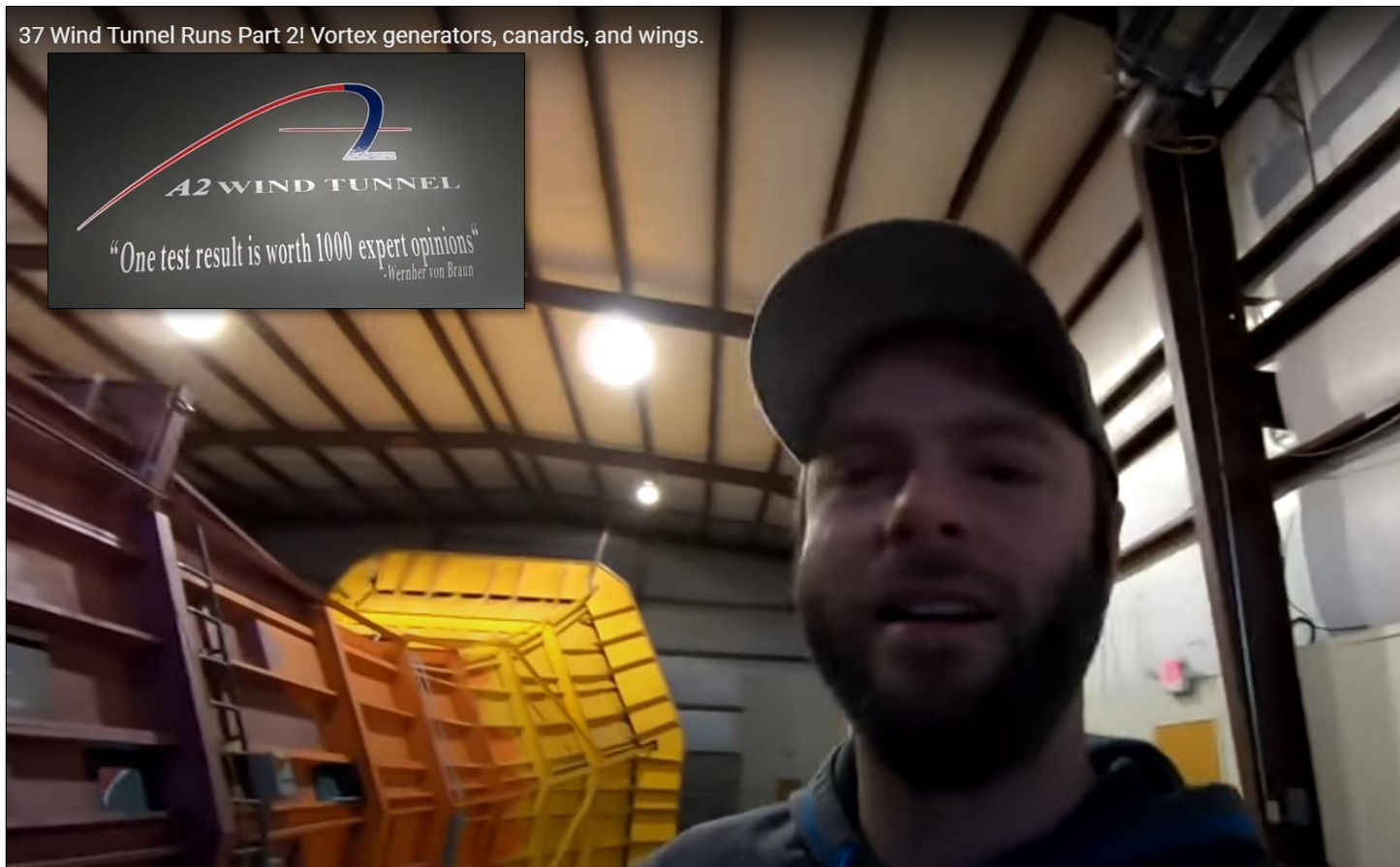
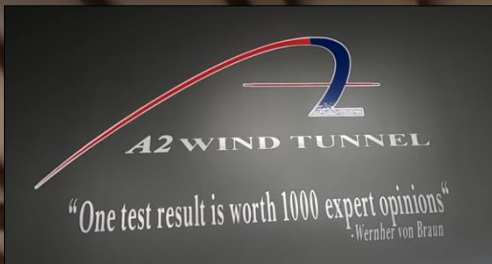
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Wind Tunnel

A Wind Tunnel in a Building



37 Wind Tunnel Runs Part 2! Vortex generators, canards, and wings.



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Data to Confirm Aero Gain

Wind Tunnel in a Building

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Wind Tunnel

Typical Setup



Data to Confirm Aero Gain

Typical Setup

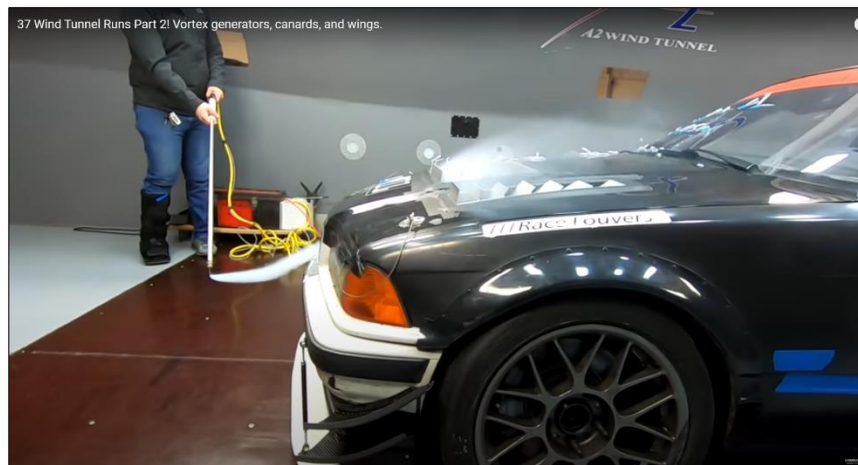
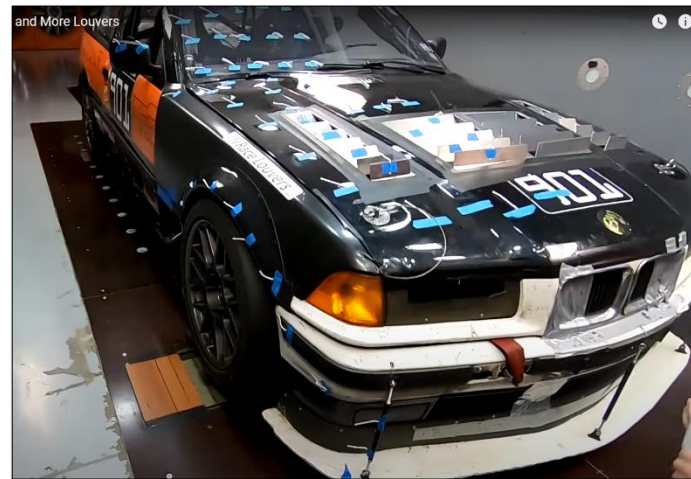


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Wind Tunnel

Hood Louvers



Data to Confirm Aero Gain

Hood Louvers

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Wind Tunnel

Yarn Tufts



Data to Confirm Aero Gain

Yarn Tufts

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Wind Tunnel

Smoke



37 Wind Tunnel Runs Part 2! Vortex generators, canards, and wings.



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Data to Confirm Aero Gain

Leading Edge

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We Have Answers!
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Wind Tunnel

Smoke



37 Wind Tunnel Runs Part 2! Vortex generators, canards, and wings.



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Under Hood Air Escape

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Wind Tunnel

Smoke



Wind Tunnel

Smoke



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Mirror Low Pressure

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Wind Tunnel

Smoke



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Back Window Louvers

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Rear Wing



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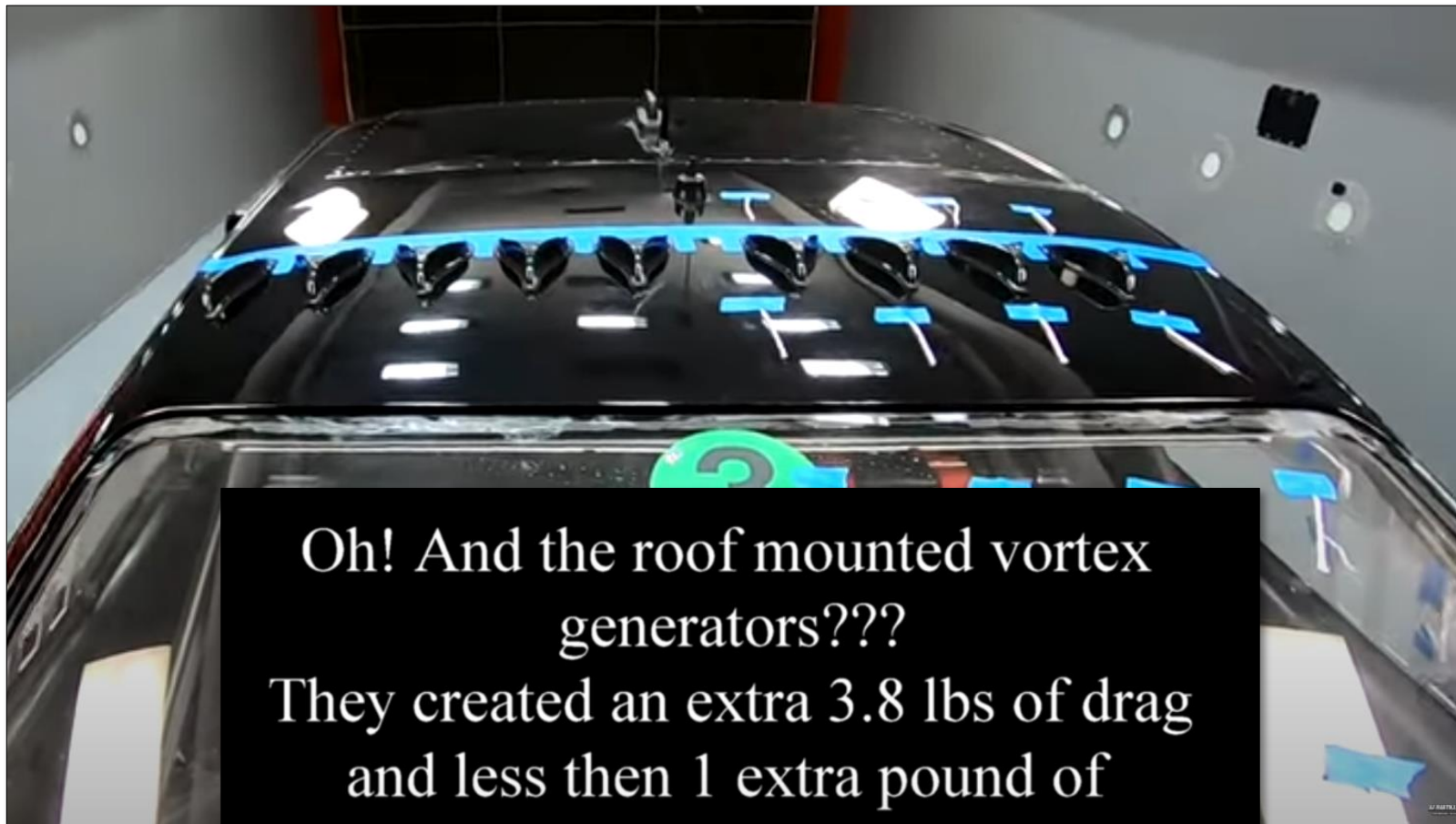
Wind Tunnel

Roof Vortex Generators



Wind Tunnel

Roof Vortex Generator Results



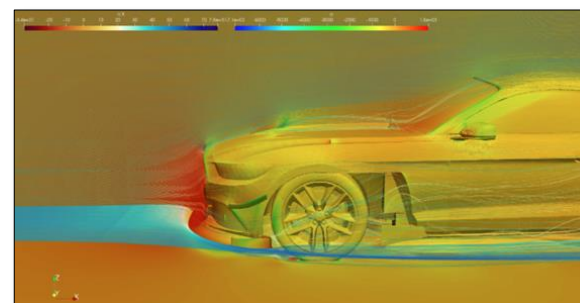
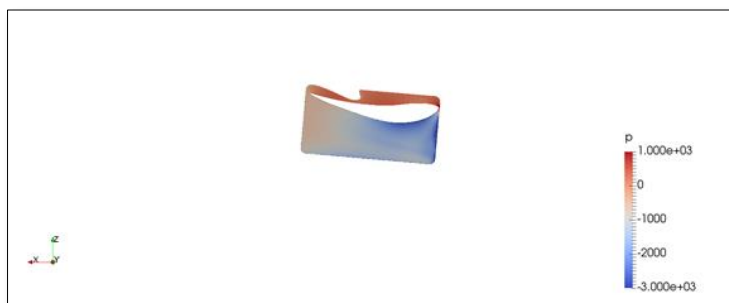
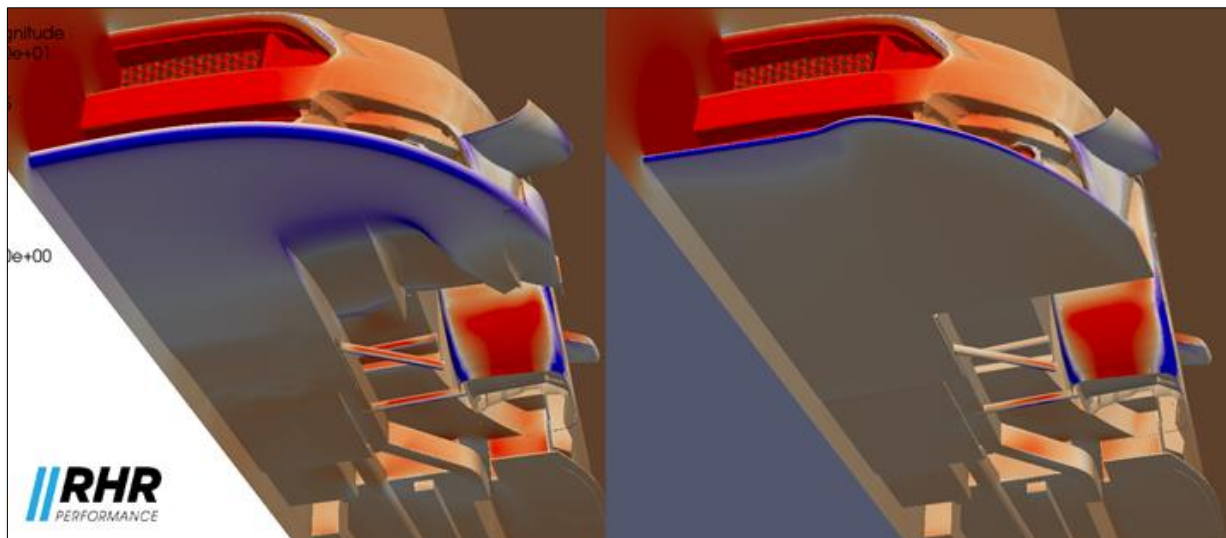
Oh! And the roof mounted vortex
generators???

They created an extra 3.8 lbs of drag
and less then 1 extra pound of
downforce in this situation.

CFD



Computational Fluid Dynamics



Data to Confirm Aero Gain

Computational Fluid Dynamics

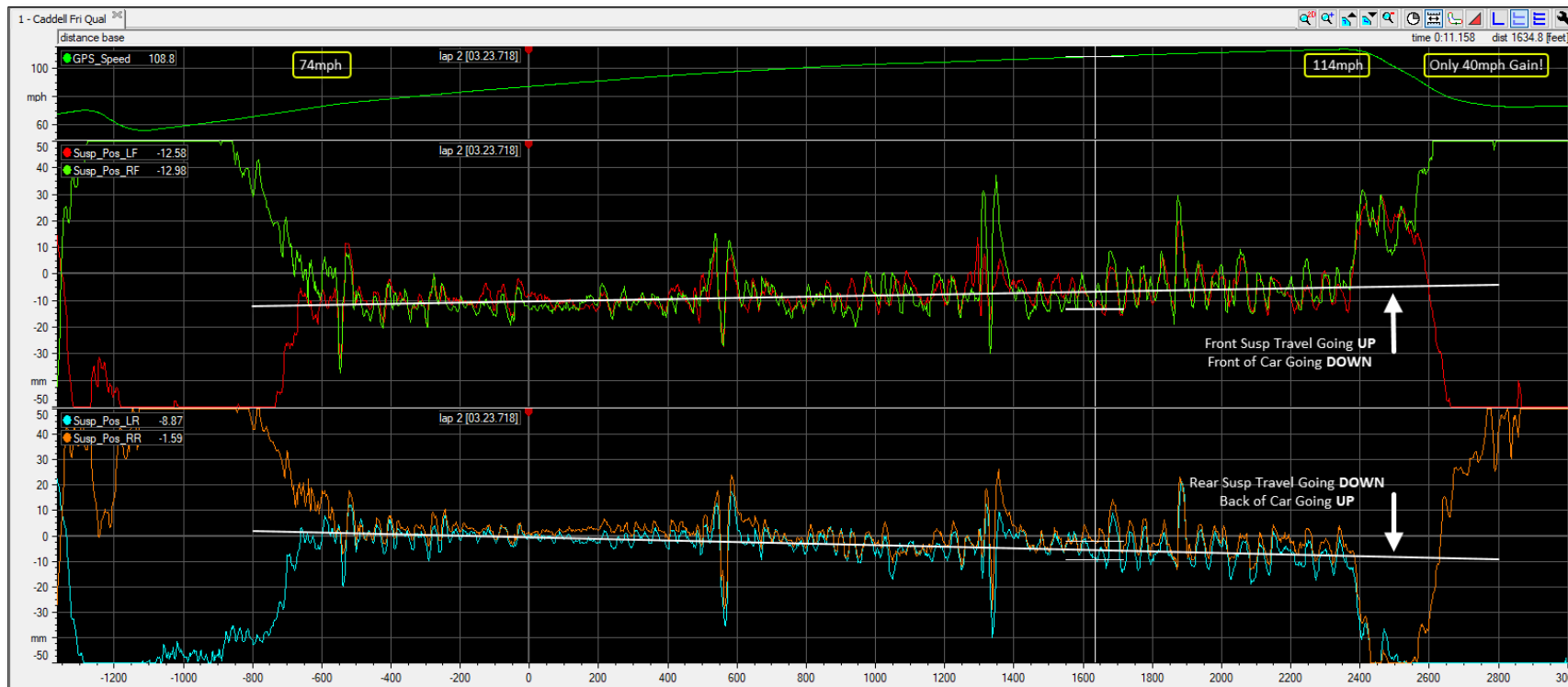
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Data and Aero

Mazda MX-5 Cup



Data to Confirm Aero Gain

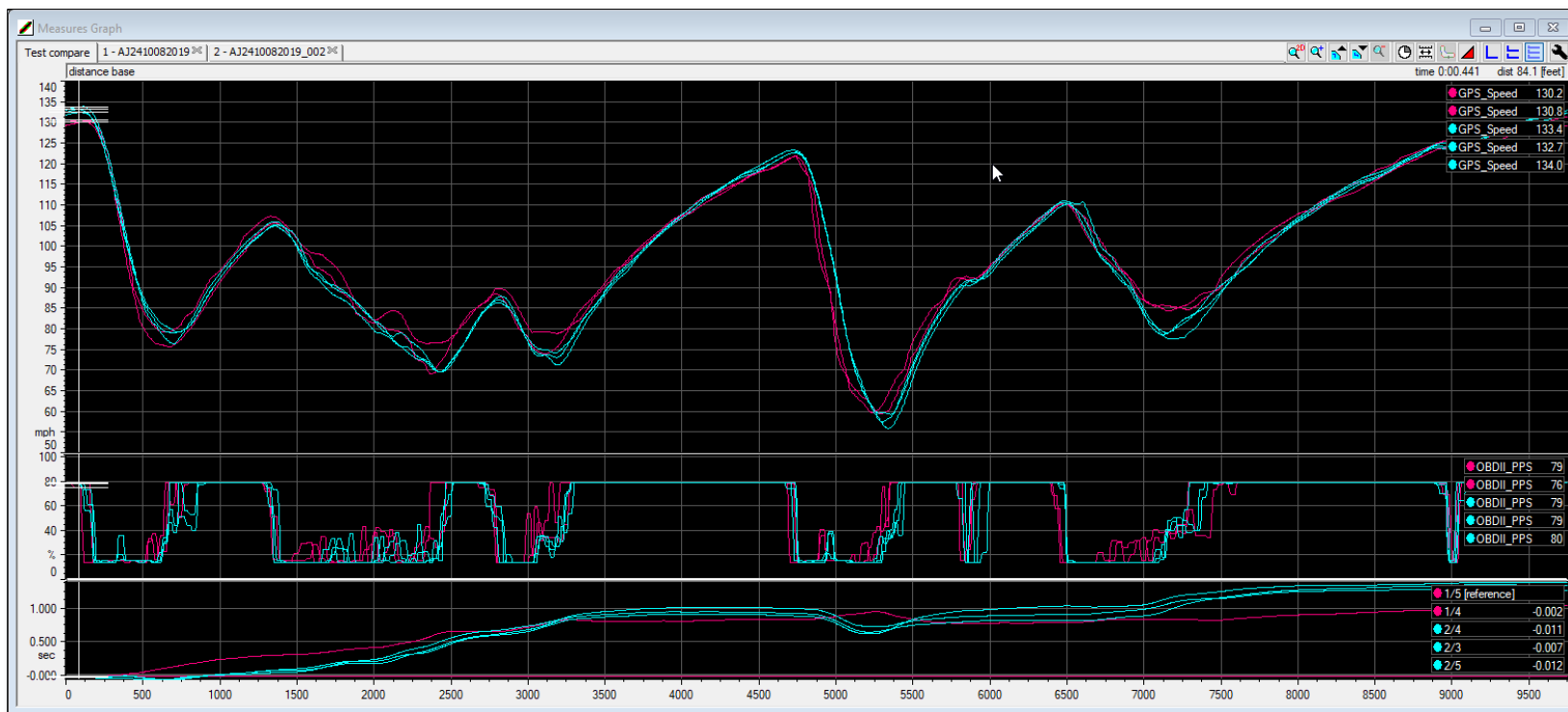
Mazda MX-5 Cup - Utah

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Live Race Studio Data



Live Race Studio Analysis

Data to Confirm Aero Gain

Live Data Analysis

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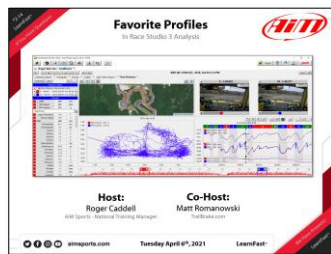
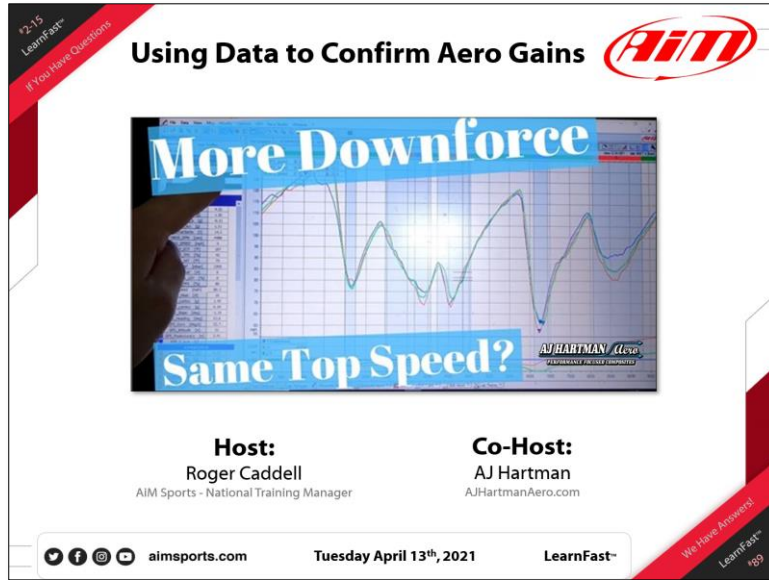
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Currently **154** Videos and Growing

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- All New 2020 - 21 Webinar Videos
 - Software Updates with Race Studio 3
 - Pre-Calculated Gear Position Function
 - Configuring WiFi Communication
 - Customizing AiM Device Logos
 - Race Studio 3 Basic Configuration - Part 1
 - Race Studio 3 Basic Configuration - Part 2
 - **I Have Downloaded my Data, Now What - Part 1*
 - **I Have Downloaded my Data, Now What - Part 2*
 - GPS Lap Insert
 - Data Views
 - Measure Units
 - Sort Channels
 - Test Properties
 - Per Lap Color
 - Export Tests
 - Channel Reports
 - Setting Time
 - Track Mapping
 - Selection Criteria
 - Sensor Calibration
 - Conditional Alarms
 - Gear Position
 - Firmware Update
 - Solo Configuration
 - Transmit Tracks
 - Gps Manager Overview
 - New GPS Track
 - Webinars
- * Most Popular and Recommended*

Additional Materials

LearnFast™ E-Training Videos

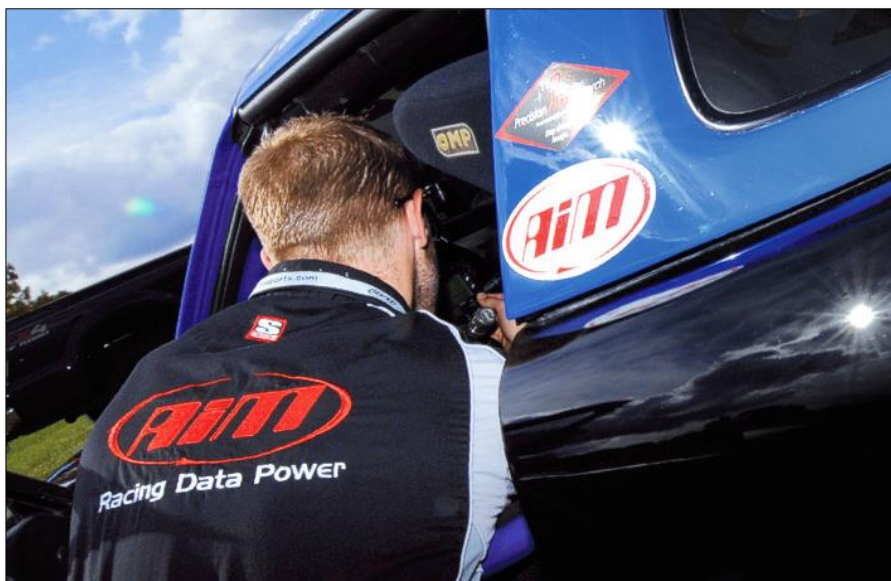
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AiM Sports Technical Support Staff Regularly
Attend Races and Other Events

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Or Call Us At **800.718.9090**



Customer Support

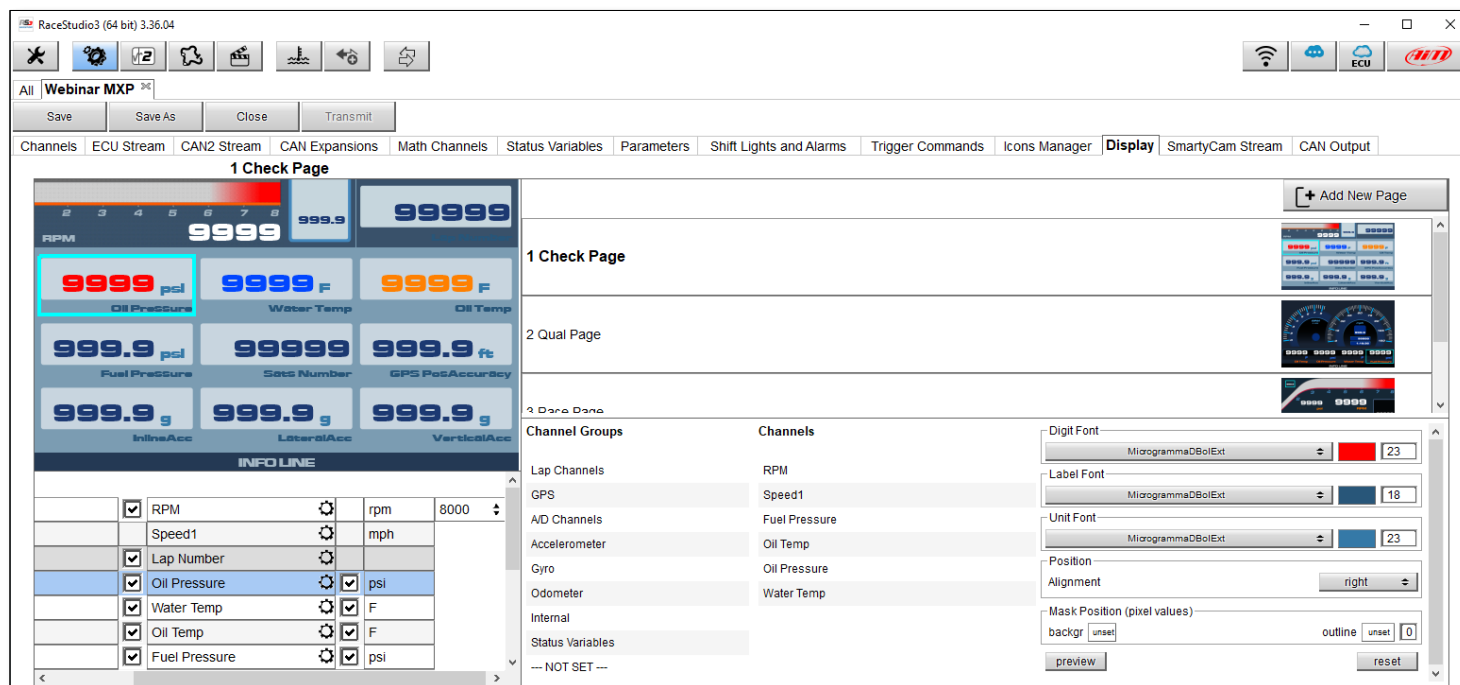
At An Event Near You!



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MXx Color Management



Host:

Roger Caddell

AiM Sports - National Training Manager

Co-Host:

Robbie Yeoman

AiM Sports Technician

Next Webinar: Tuesday April 20th, 2021 - 10:00am Pac/1:00pm East

Next Webinar Topic

MXx Color Management

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Contact Information



Host:

Roger Caddell

AiM Sports - National Training Manager
roger@aimsports.com

Co-Host:

AJ Hartman

AJHartmanAero.com
ajhartmanaero@gmail.com



aimsports.com

Tuesday April 13th, 2021

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