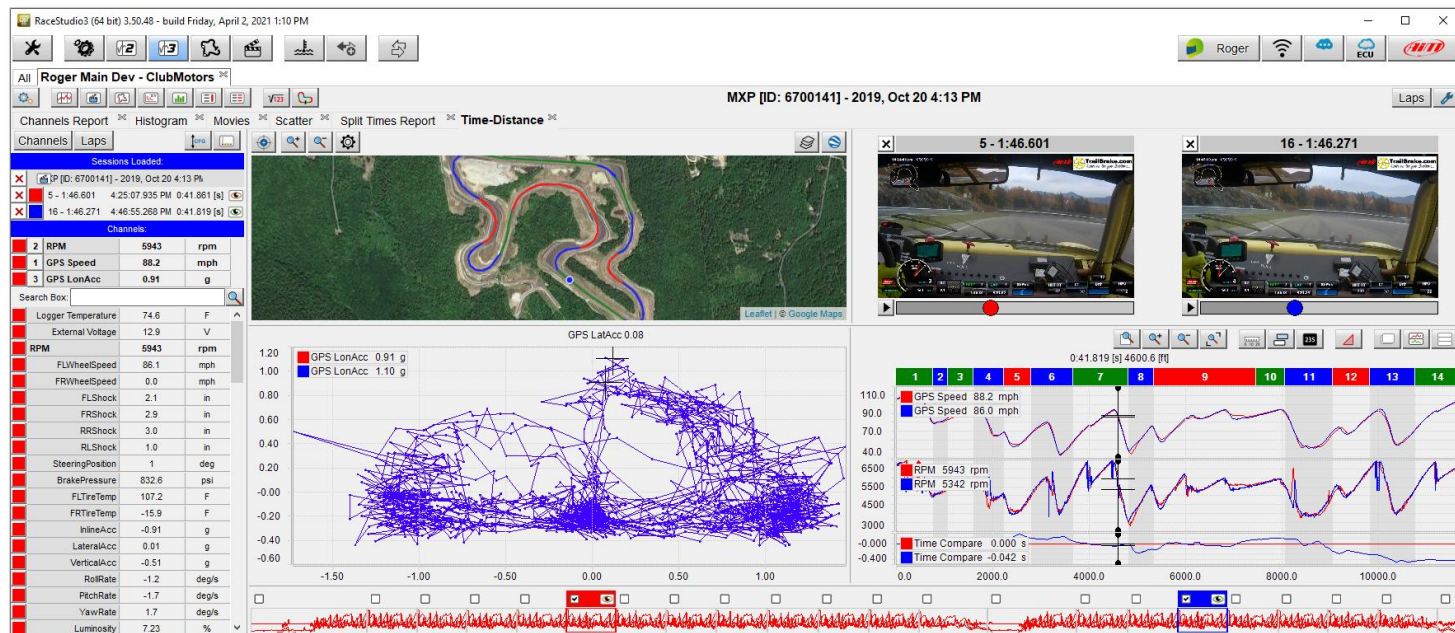


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What Are These Data Items?



Host:

Roger Caddell

AiM Sports - National Training Manager



Guest:

Matt Romanowski

TrailBrake.com



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Tuesday September 21st, 2021

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Co-Host:

Matt Romanowski

www.TrailBrake.com

 @TrailBrakeMatt



- Leading Technical and Stocking AiM Sports Dealer
- Seminars, at Track Coaching, Offsite Support, Online Sales, Pro Racing DAG
- Advanced CAN and Sensor Integrations, PDM Setup/Config, and more!
- 12 Time AiM Sports Webinar Co-Host!



www.TrailBrake.com

Matt Romanowski

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Words We Use

Important Definitions/Words

- Measure
- Distance Mode
- Time Mode
- G Force
- Lateral G Force
- Longitudinal G Force
- Time Compare
- Plot Types: Measures Graph, Scatter Plot, Track Map, Split Report, Track Report, Histogram

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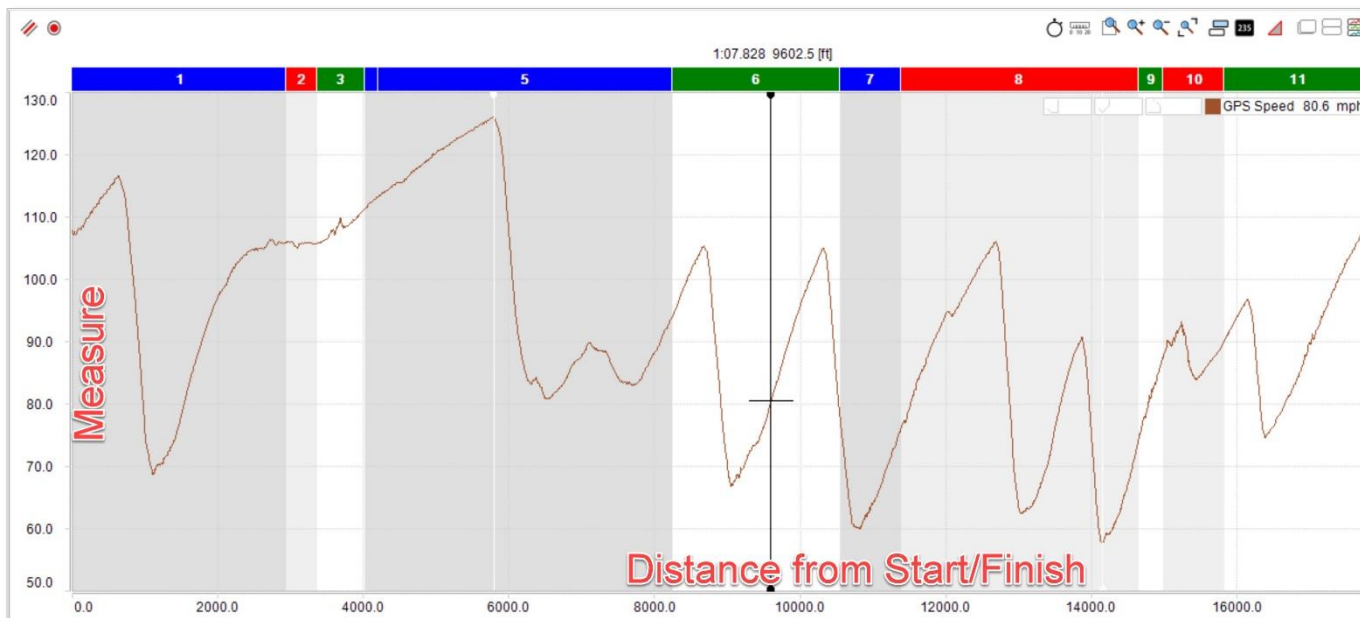
Words We Use

Measures Graph

Line Graphs



- Most Common Analysis Page
- Line Graph of the Selected Channel Versus Lap Distance or Lap Time
- Most Commonly Used in Distance Mode, But Can Also Be Used With Time



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Measures Graph – Line Graphs

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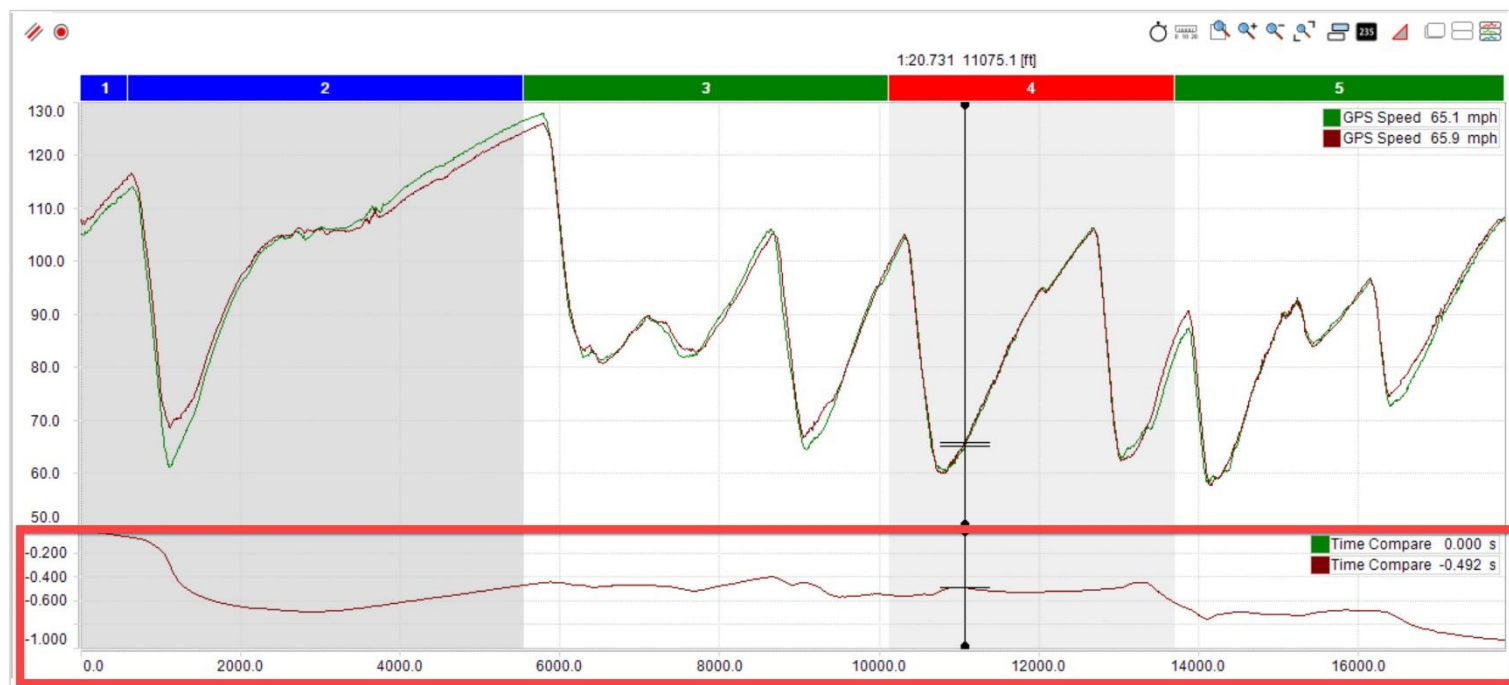
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Measures Graph

Time Compare



- Only Active When 2 or More Laps are Selected
- Shows the Time Difference in the Laps to See How Much Faster One Lap is at That Point on Track



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Measures Graph – Time Compare

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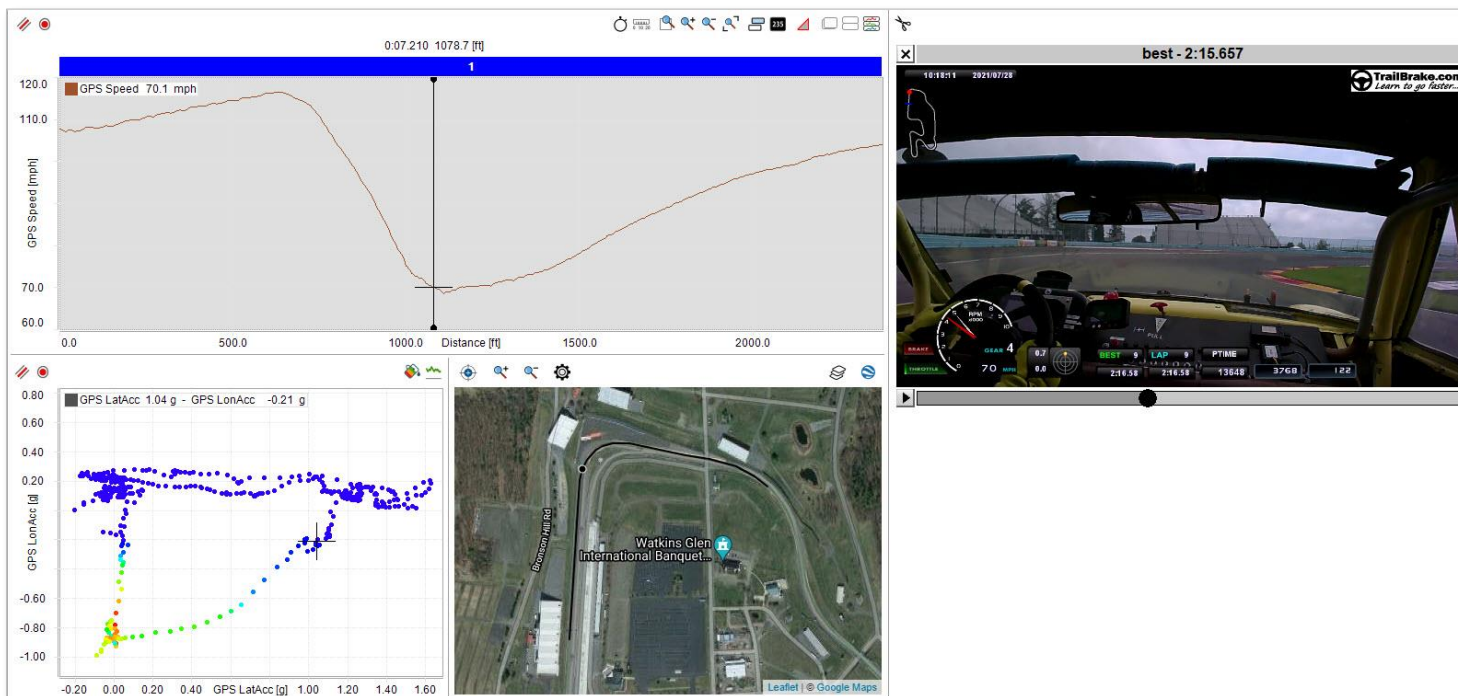
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Data/Movies

Synched Data and Video!



- Video and Data Synched
- Compare up to 4 Laps!



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Data/Movies – Synched Data & Video!

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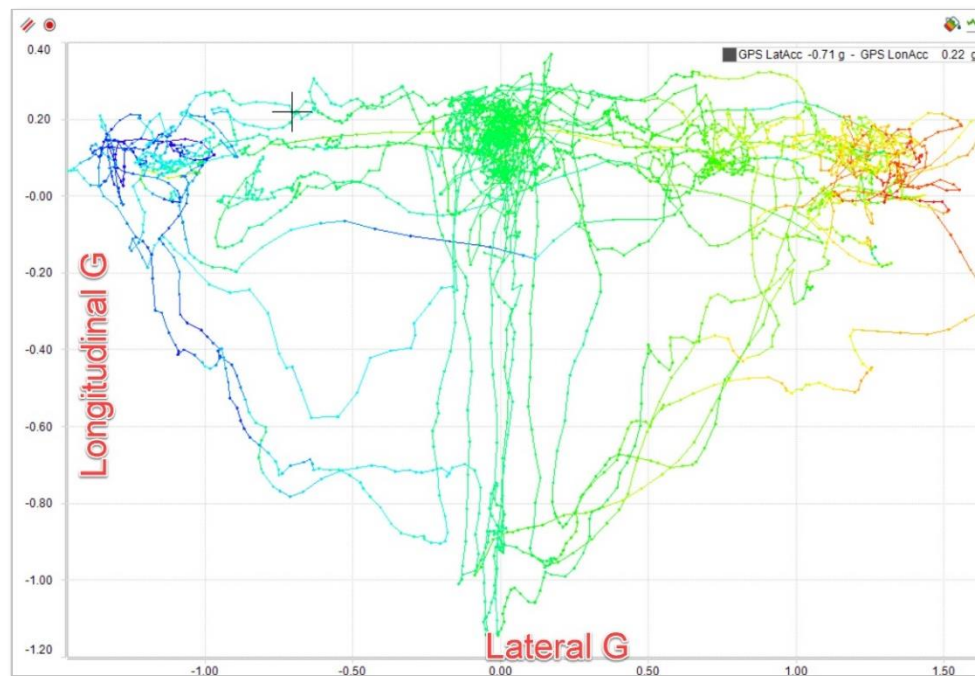


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Scatter Plot

XY Graphs

- Plots Two Channels Versus Each Other
- Popular for Friction Circle (G-G Graph)
- Shows Correlation (One Thing Affecting the Other)



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Scatter Plots – X/Y Graphs

Track Map

Visual Heat Map



- Colors the Driven Line Based on a Channel
- Great Way to Visualize Measures at a Point on Track
- Gives a Different View that is Less Mathematical, More Picture Like



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Track Map – Visual Heat Map



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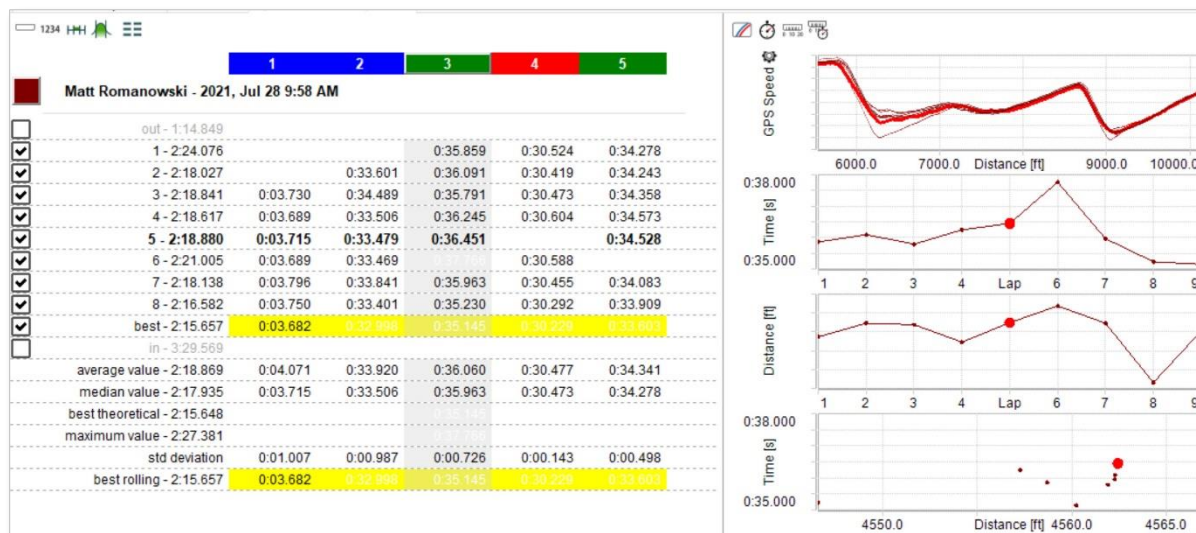
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Split Report



Tabular Form of Information

- Let's You Divide the Track into Segments for Timing
- Gives you Advanced Measures of the Segments like Distance Driven, Time, and Speed in a Graph
- Best Rolling: Adding up Consecutive Segments to get the Lowest Laptime
- Best Theoretical: Adding Best Segment Time Together for Lowest Laptime



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Split Report – Tabular Data

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Channel Report

Tabular Form of Information



- Displays Max, Min, Avg, or Other Value of a Measure Over a Lap
- Great for Checking Min and Max Values
 - Highest RPM, Highest Temp, Lowest Oil Pressure, Battery Voltage, etc.

☒	Lap	Time	[ft]	RPM [rpm] Max	External Voltage [V] Max	OILPRESSURE [psi] Min	OILTANKTEMP [F] Max
☐	1	3:38.925	5506.9	7008	13.6	12.67	214.5
☒	2	2:18.027	5409.8	7104	13.5	58.53	224.1
☒	3	2:18.841	5404.3	7032	13.5	51.84	233.6
☒	4	2:18.617	5402.9	7080	13.6	48.10	239.1
☒	5	2:18.880	5407.7	7000	13.5	53.31	240.6
☒	6	2:21.005	5408.0	7072	13.5	47.19	243.7
☒	7	2:18.138	5409.0	7020	13.5	53.34	243.9
☒	8	2:16.582	5401.2	7036	13.6	49.23	245.9
☒	9	2:15.657	5408.3	7076	13.5	53.77	247.7
☐	10	3:29.569	5552.2	6472	13.8	-1.05	247.7

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Channel Report – Tabular Data



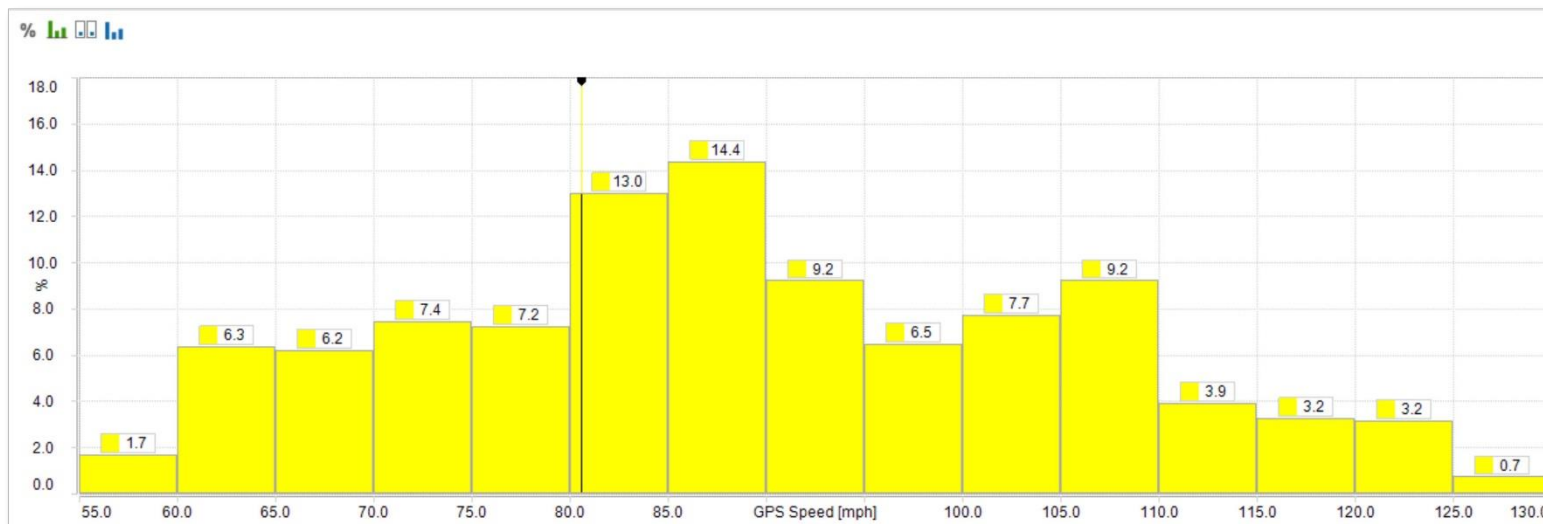
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Histogram

Bar Charts

- Puts Measures Into “Bins” and Gives the Total Time or Percent of Lap in that Bin
- Often Used for Shock Data
- Great for Looking at Profiles of Different Measures i.e. Give You a Great Speed Distribution for a Track



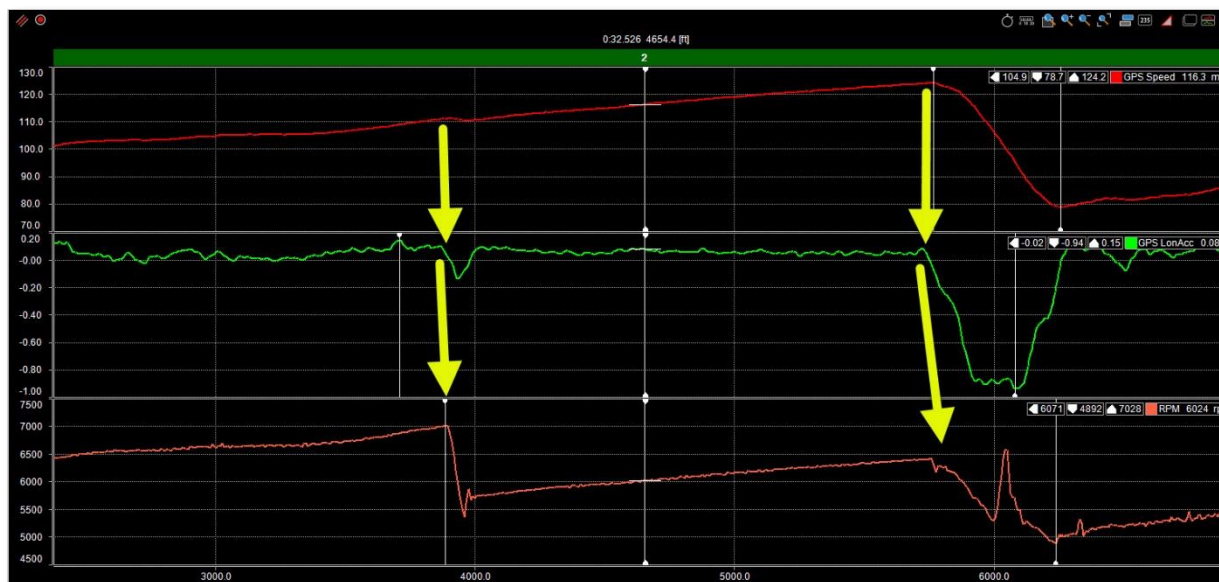
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Histogram – Bar Charts

Speed is King

Other Measures Explain the Speed Trace

- When the Speed Decreases, Long G Becomes Negative
- RPM Went Down as Well!
- The Hiccup in the Speed Trace Also Shows up in Long G. The RPM Trace Shows a Shift and the Car Actually Slowed Down From It!



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Speed is King

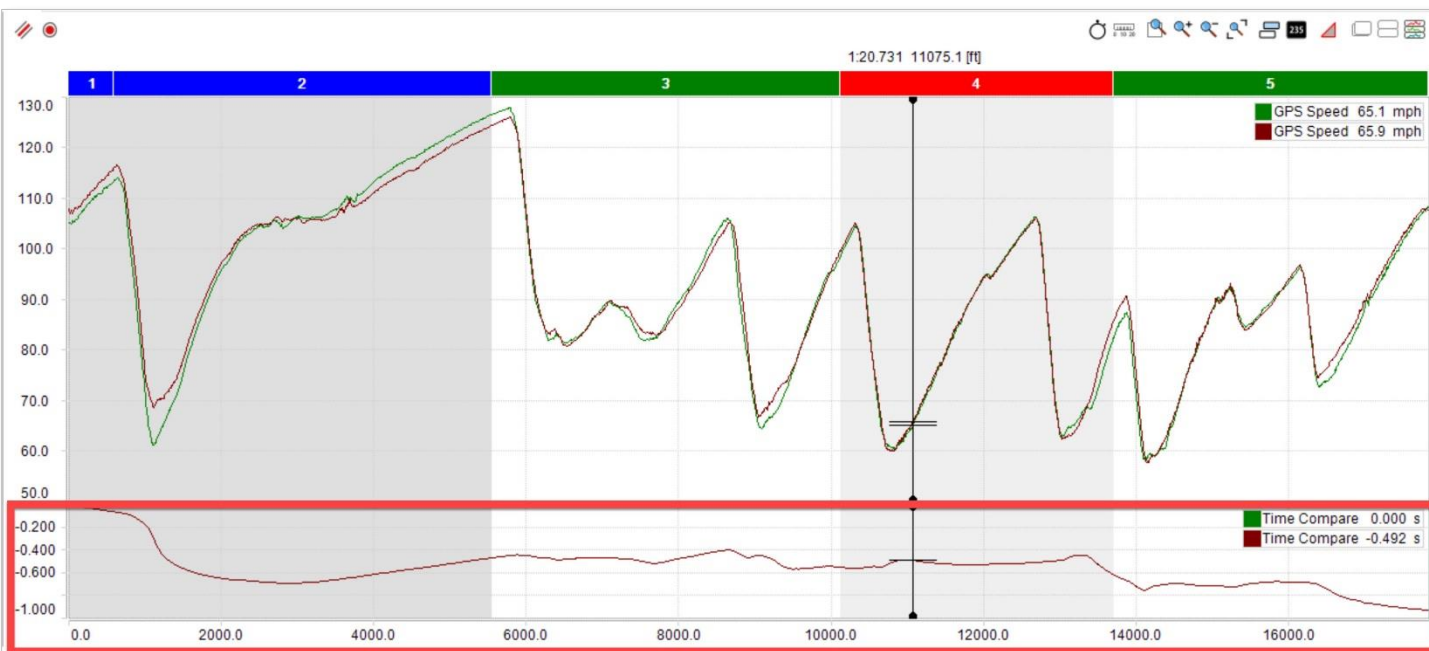
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Speed is King



Other Measures Explain the Speed Trace

- Differences in Speed Determine Difference in Laptime
- Time Compare Shows You Where the Speed Difference Made the Largest Difference!



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Speed is King

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Speed is King



Other Measures Explain the Speed Trace

- Differential Time Compare Shows THE RATE OF CHANGE of the Time Compare. You Can See Which Areas Make the Most Difference in the Time Loss



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Speed is King

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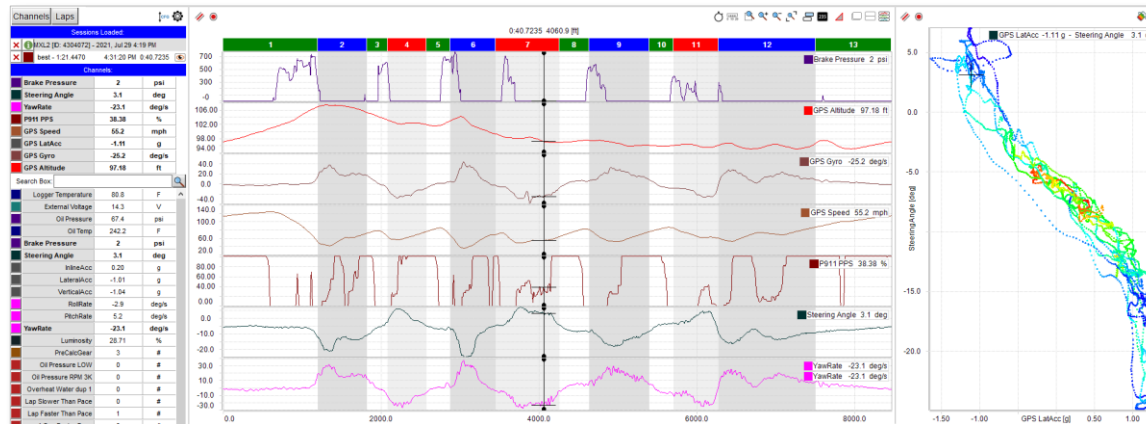


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The Data Analysis Triangle

Vehicle Health, Driver Performance, Vehicle Performance

- Ask These Questions:
 - What Happened?
 - Where on Track Did it Happen?
 - Why Did it Happen?
- When You Answer These, You Will Know What is Going On



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The Data Analysis Triangle

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The Data Analysis Triangle

Vehicle Health, Driver Performance, Vehicle Performance



Back to Basics

The Data Analysis Triangle



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The Data Analysis Triangle

Vehicle Health, Driver Performance, Vehicle Performance

1. What Happened?
 - Speed Dropped From 125 mph to 83.2 mph
2. Where Did it Happen?
 - 5,826 Feet From Start Finish
3. Why Did it Happen?
 - Brake Pressure Went from Zero to a Little Over 800 psi



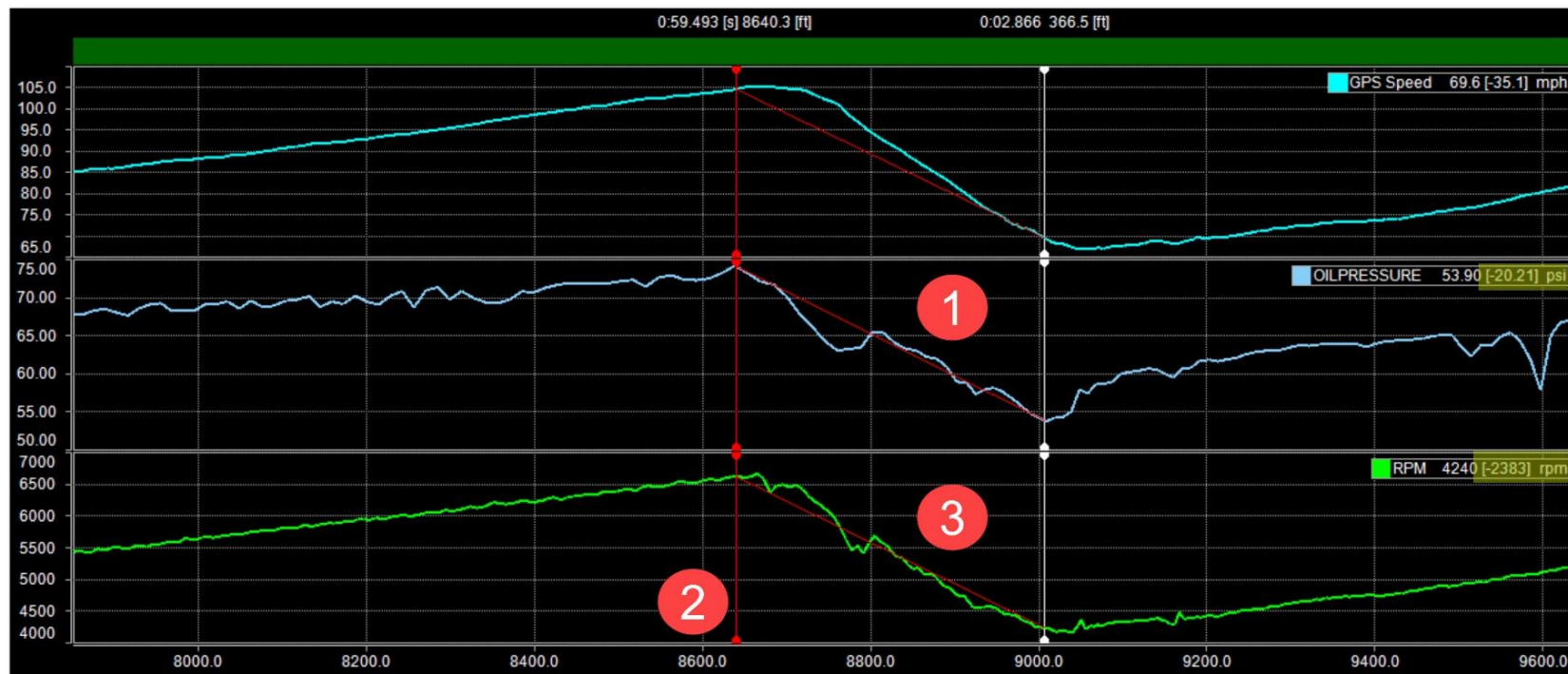
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The Data Analysis Triangle

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The Data Analysis Triangle

Vehicle Health, Driver Performance, Vehicle Performance



Back to Basics

The Data Analysis Triangle

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The Data Analysis Triangle

Vehicle Health, Driver Performance, Vehicle Performance

1. What?
 - Oil Pressure dropped 20.21 psi!
2. Where?
 - 8640.3 feet from start finish
3. Why?
 - RPM dropped from 6,623 to 20.21



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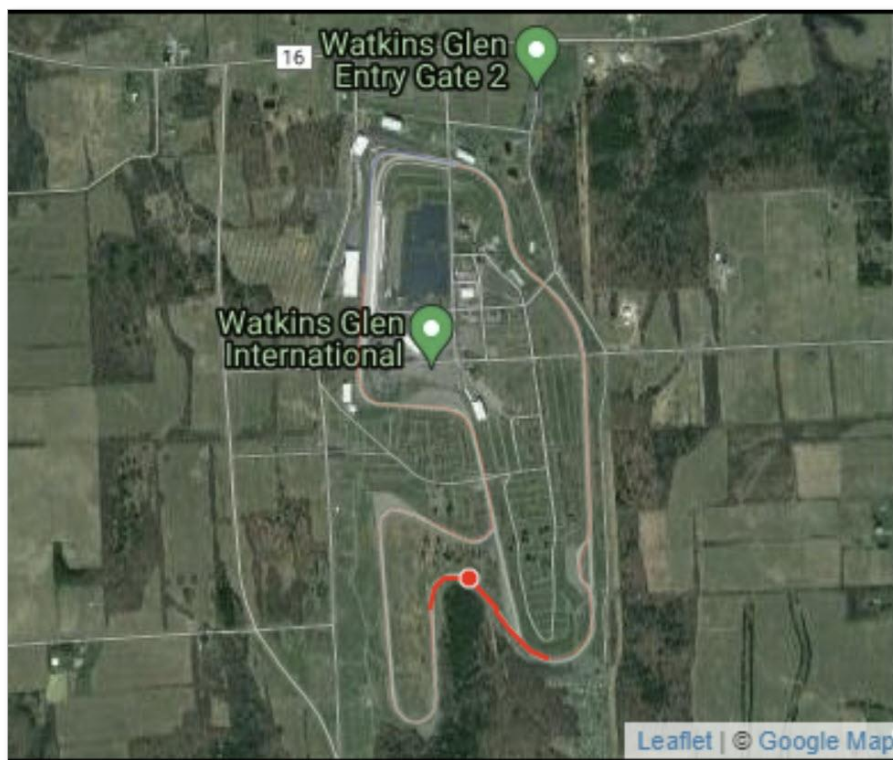
The Data Analysis Triangle

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The Data Analysis Triangle

Vehicle Health, Driver Performance, Vehicle Performance

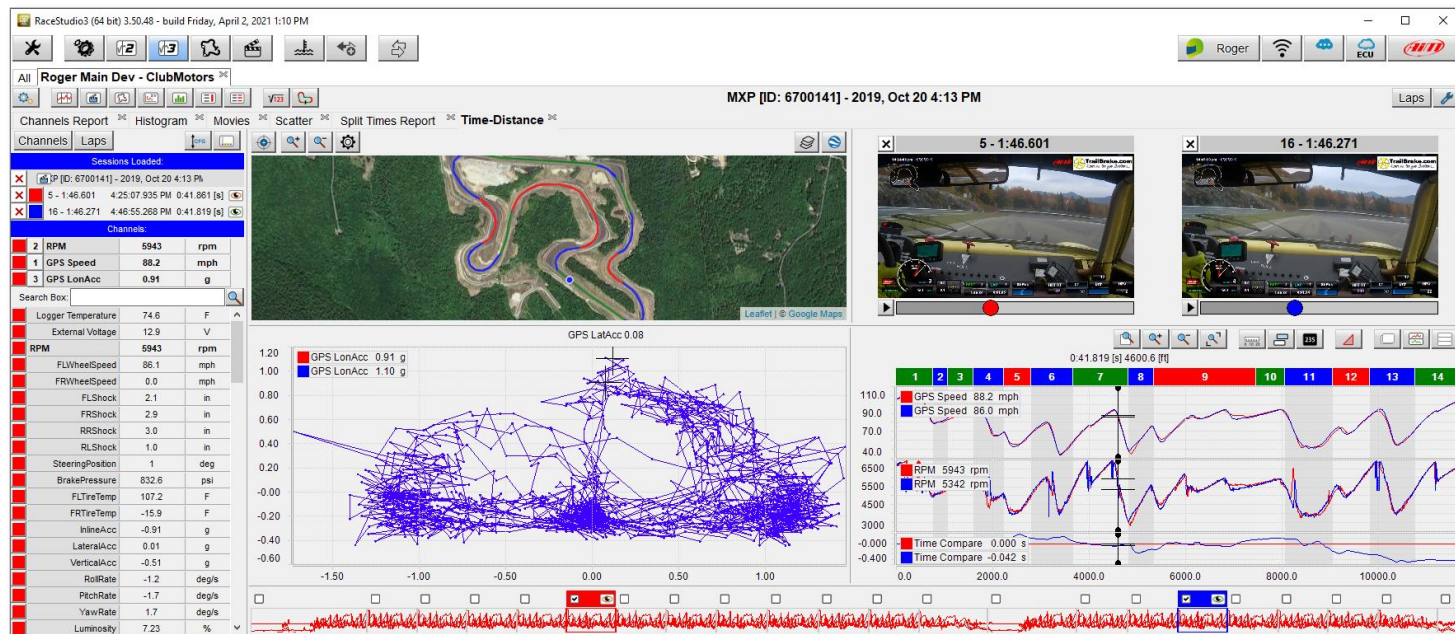
- Even Better 'Where' Info – Use The Map!
 - 8,640 Feet From the Start Finish is in T6



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The Data Analysis Triangle

Live Race Studio Data Analysis



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Live Race Studio Data Analysis

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Resources

Data Books

- Making Sense of Squiggly Lines by Chris Brown
- Data Power by Buddy Fey
- A Practical Guide to Race Car Data Analysis by Bob Know
- Analysis Techniques for Racecar Data Acquisition by Jorge Segers

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- Optimum Drive by Paul Gerard
- Driving on the Edge by Michael Krumm
- The Perfect Corner by Adam Brouillard
 - Lots of GPS Radius Application!

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Resources – Further Reading



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LearnFast™ E-Training Videos



Currently **177** Videos and Growing



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What Are These Data Items?

Host:
Roger Caddell
AIM Sports - National Training Manager

Guest:
Matt Romanowski
TrailBrake.com

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Sprint Kart Data Analysis
Three FAST Tracks!

Host:
Roger Caddell
AIM Sports - National Training Manager

Co-Host:
Eric Gunderson
AIM Sports - National Training Manager

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Webinar Series
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Data Download Options
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 - Software Updates with Race Studio 3
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 - 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
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 - Conditional Alarms
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Additional Materials

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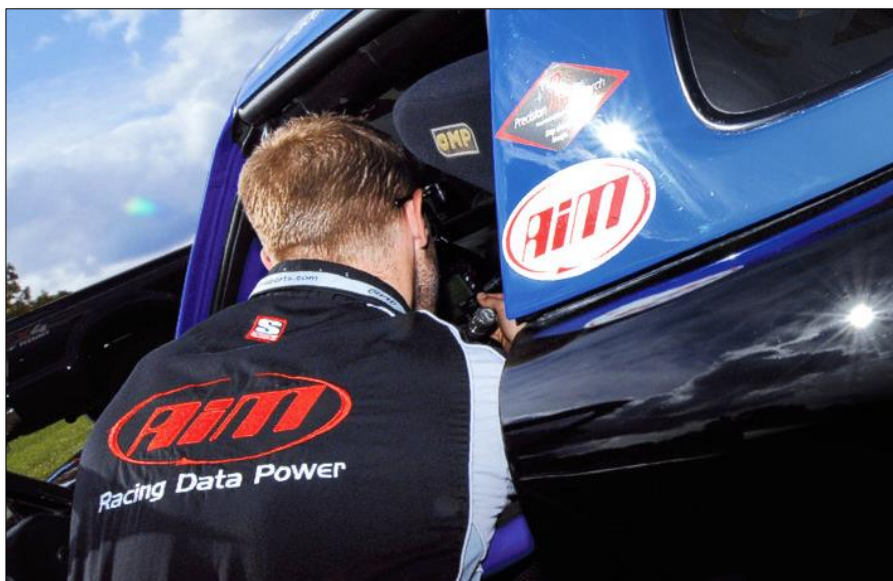
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Customer Support



AiM Sports Technical Support Staff Regularly
Attend Races and Other Events

Look For Us At An Event Near You
Or Call Us At **800.718.9090**



Customer Support

At An Event Near You!

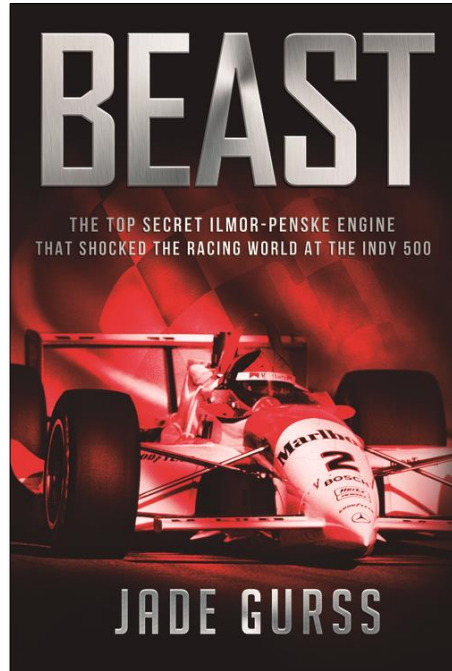
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BEAST

The Top Secret Ilmor-Penske Engine



Host:

Roger Caddell

AiM Sports - National Training Manager

Co-Host:

Jade Gurss

BEAST – The Top Secret Ilmor-Penske Engine

Next Webinar: Tuesday Sept 28th, 2021 - 10:00am Pac/1:00pm East



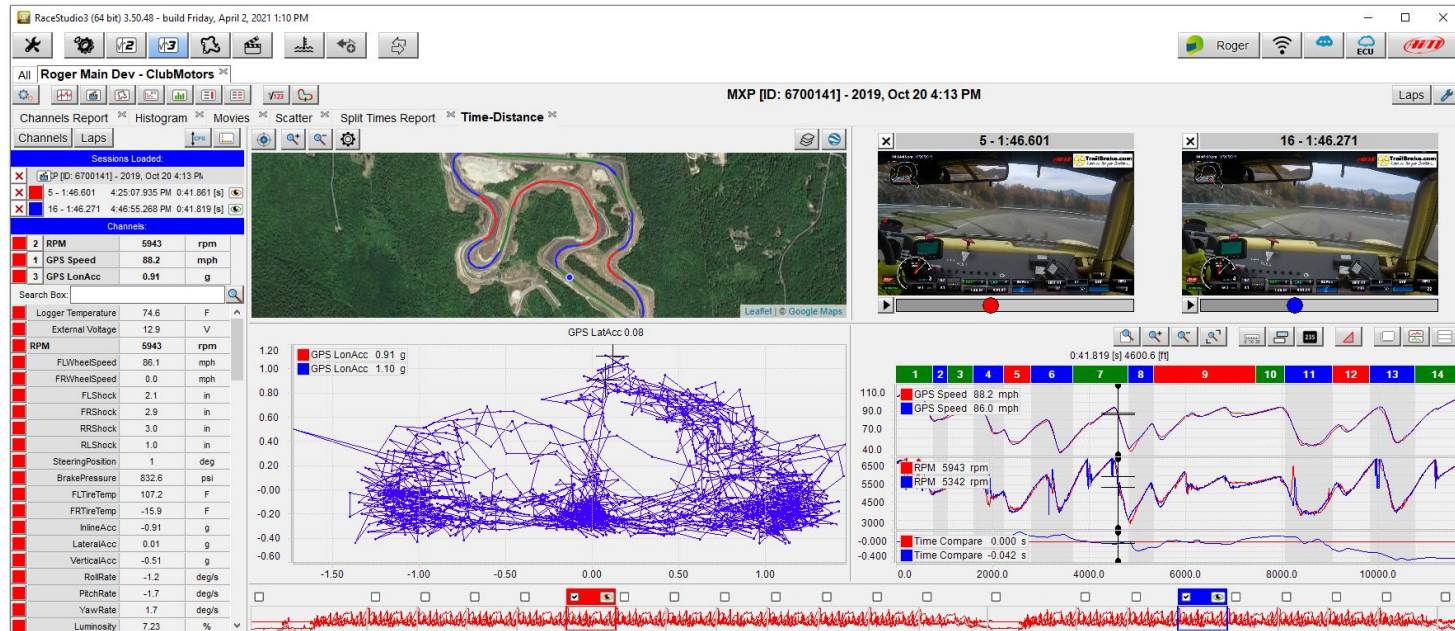
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BEAST

The Top Secret Ilmor-Penske Engine

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Tuesday September 21st, 2021

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