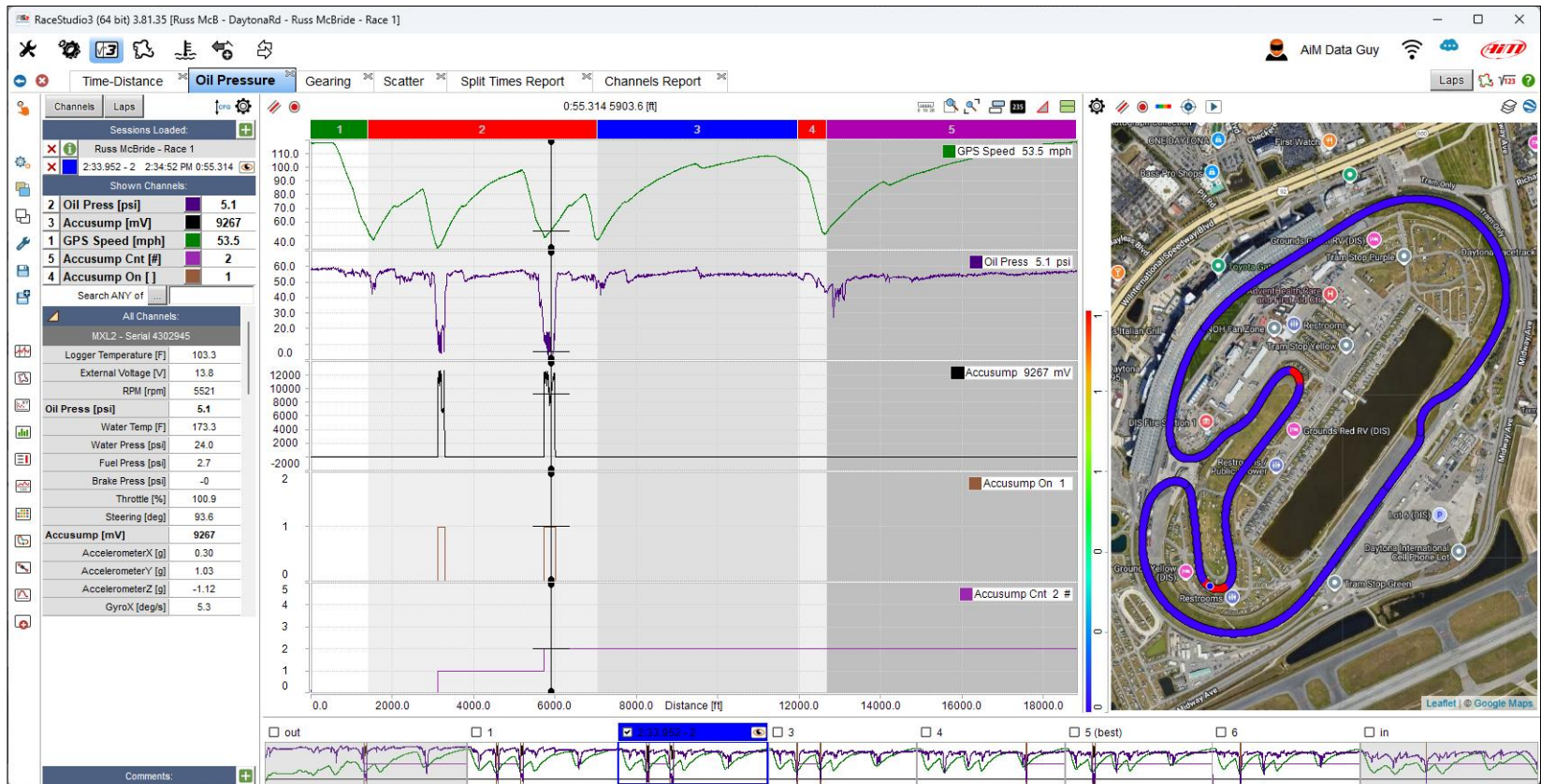


Analysis Example – Vehicle Health

Based on a Recent AiM Support Call



Host:
Roger Caddell
National Training Manager
AiM Sports



aimsports.com

Tuesday October 14th, 2025

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Initial User Contact

- User 1st contacted me in July 2025
- He has a MXL2 in a road racing Fiat X19
- Wanted to connect and configure an Accusump valve
- This was data that I have had interest in for a while

ID	☒	Name	Function	Sensor	Unit	Freq	Parameters
RPM	☒	RPM	Engine RPM				
Spd1	☐	Speed1	Speed				
Spd2	☐	Speed2	Speed				
Spd3	☐	Speed3	Speed				
Spd4	☐	Speed4	Speed				
Ch01	☒	Oil Press	Oil Pressure				
Ch02	☒	Water Temp	Water Temperature				
Ch03	☒	Water Press	Pressure				
Ch04	☒	Fuel Press	Fuel Press				
Ch05	☒	Brake Press	Brake Circuit Pressure				
Ch06	☒	Throttle	Percent Throttle Load				
Ch07	☒	Steering	Steering Angle				
Ch08	☒	Accusump	Voltage				
InIA	☒	InlineAcc	Inline Acceleration				
LatA	☒	LateralAcc	Lateral Acceleration				
VerA	☒	VerticalAcc	Vertical Acceleration				
Roll	☐	RollRate	Roll Rate				
Ptch	☐	PitchRate	Pitch Rate				
YawR	☐	YawRate	Yaw Rate				

Channel Settings

Name:

Function:

Sensor:

Sampling Frequency:

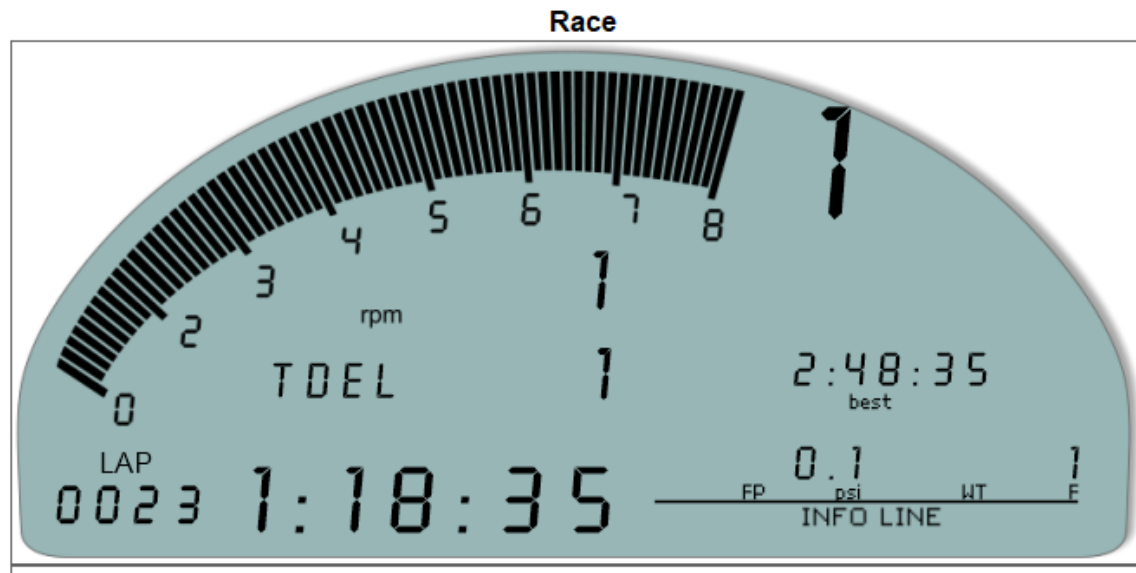
Unit of Measure:

Save Cancel

General AiM Support Questions



- Helped him understand the difference - Digital vs Analog Channels
- How to wire the sensor to the AiM harness
- Confirmed some RS33A user interface settings
- Supplied him with some sensor calibration documents (Steering, Throttle, Suspension) for future use
- Adding an external mic to his SCHD



Analysis Example – Vehicle Health

General AiM Support Questions



aimsports.com

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Facebook Post

AiM Sports Users Group - Sept 2025



Russ McBride

Top contributor · September 19 at 11:06 AM · 🌐

My PreCalcGear didn't work this morning (when it has in the past).

Not urgent, but would be nice to fix.

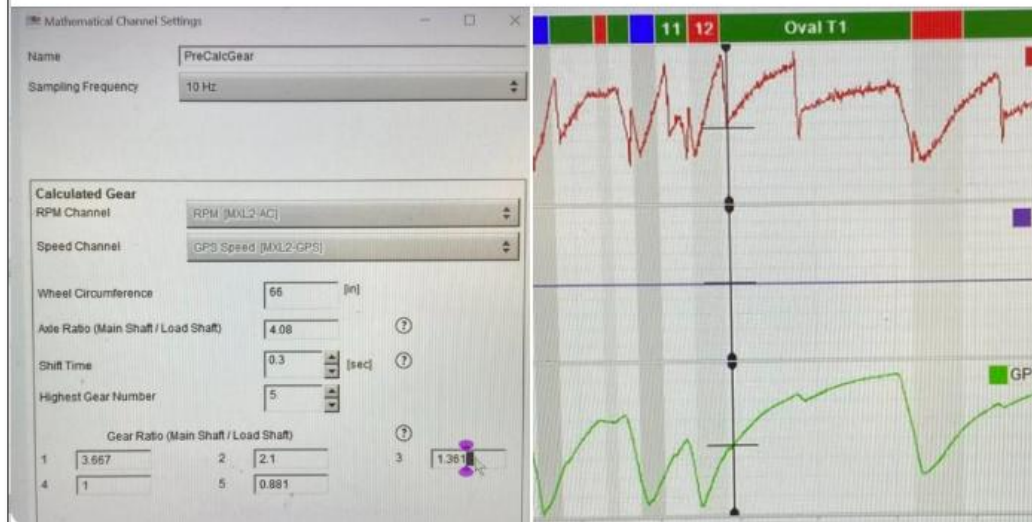
GPS Speed and RPM seem to be logging fine.

First pic is my config. Second pic shows GPS Speed, PreCalcGear (not changing) and RPM.

SW and FW are current.

Any thoughts?

TIA.



Analysis Example – Vehicle Health

Facebook Post – Sept 2025

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Facebook Post

PreCalcGear Issues



- He sent me a data file and his configuration file
- I checked everything and things looked ok
- I rebuilt (from new) his config fully and he loaded it
- He tested and the PreCalcGear worked well
- With some recent issues with an updated RS3, I wanted to make sure we fixed his issues for his race weekend
- I did fine tune some of his 26 Alarms, 4 Status Variables, 3 Math Channels, and his shift lights

☒ Gear dependent shift lights

Max gear number

Choose the gear channel:

Select colors and threshold values for shift lights:

Gear	Shift Light 1	2	3	4	5	6	7	8	9	10	
5	0	0	0	0	0	0	0	0	0	0	
4	7100	7200	7300	7400	7500	7500	7400	7300	7200	7100	
3	7100	7200	7300	7400	7500	7500	7400	7300	7200	7100	
2	6700	6900	7100	7300	7500	7500	7300	7100	6900	6700	
1	6300	6600	6900	7200	7500	7500	7200	6900	6600	6300	

Data Analysis

With a Focus on Oil Pressure Issues

- Tuesday evening after his Daytona race weekend we met via Zoom
- His Oil Pressure and Accusump data was the main topic
- My 1st stop for 'Vehicle Health' is a well setup Channels Report

Analysis Example – Vehicle Health

Channels Report – Vehicle Health



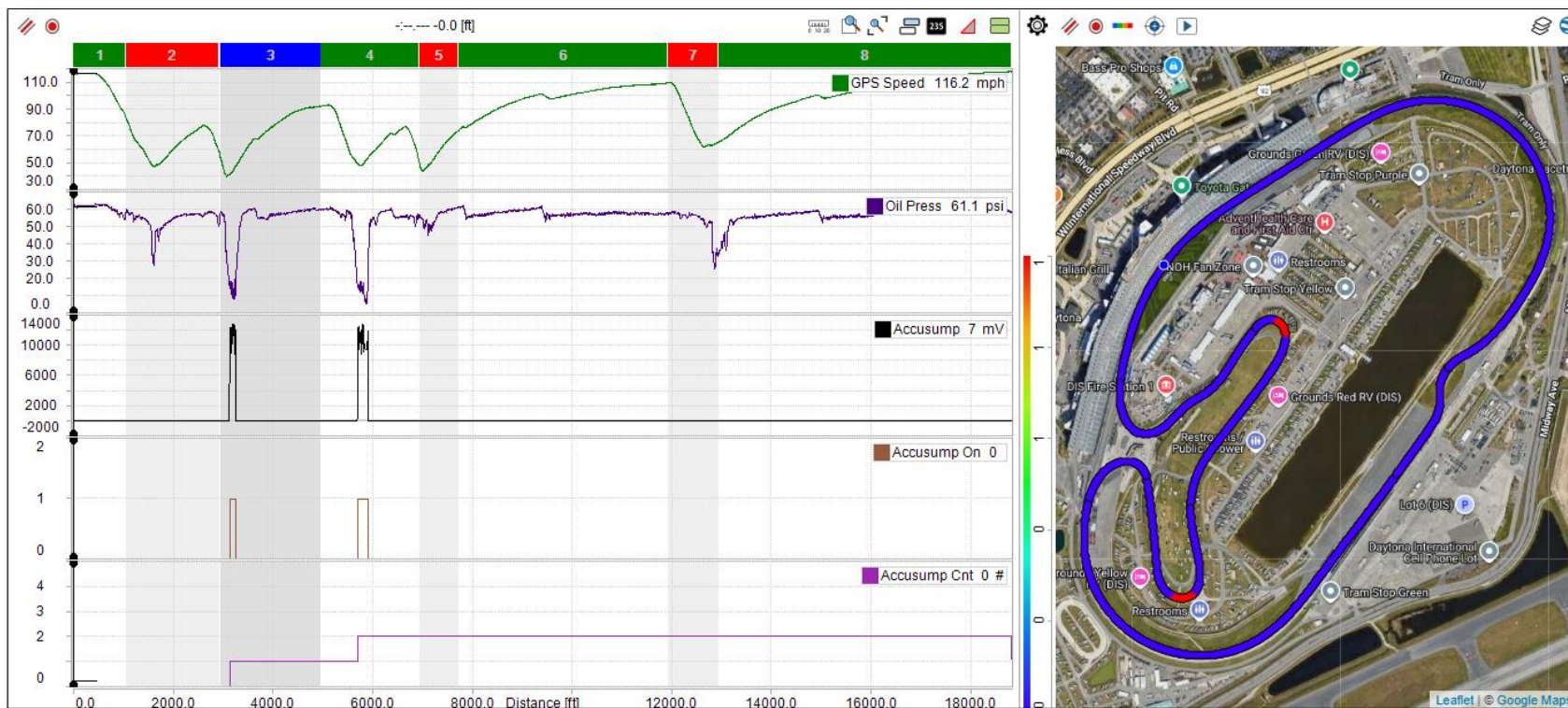
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Data Analysis

With a Focus on Oil Pressure Issues

- Next is a 'Oil Pressure' custom Time Distance page
- Including all Oil Pressure channels and a couple of math channels



Analysis Example – Vehicle Health

Time Distance – Oil Pressure

Accusump Math Channels

- Accusump On = "Accusump"[mV]>1000
- Accusump Cnt = LAP_EDGE_COUNTER("Accusump On", Rising)

?

Name

Accusump On

Freq. 50 Hz

☒ Stepped Values
 ☐ Linear Interpolation
 ☐ Cubic Interpolation

Group

Roger

Comment

Reports a 1 when the Accusump mV values exceed 1000mV

Formula

"Accusump"[mV]>1000

The output of this formula will feature, as function:

Boolean

The output of this formula will feature, as unit of measure:

The channel will be shown using unit of measure:

The channel will be shown using decimal figures:

0

Channels Used and Parameters

Channel with name exactly matching: Accusump [mV]

?

Name

Accusump Cnt

Freq. 10 Hz

☐ Stepped Values
 ☒ Linear Interpolation
 ☐ Cubic Interpolation

Group

Roger

Comment

The count of the times the Accusump 'hits' per lap

Formula

LAP_EDGE_COUNTER("Accusump On", Rising)

The output of this formula will feature, as function:

Number

The output of this formula will feature, as unit of measure:

#

The channel will be shown using unit of measure:

#

The channel will be shown using decimal figures:

0

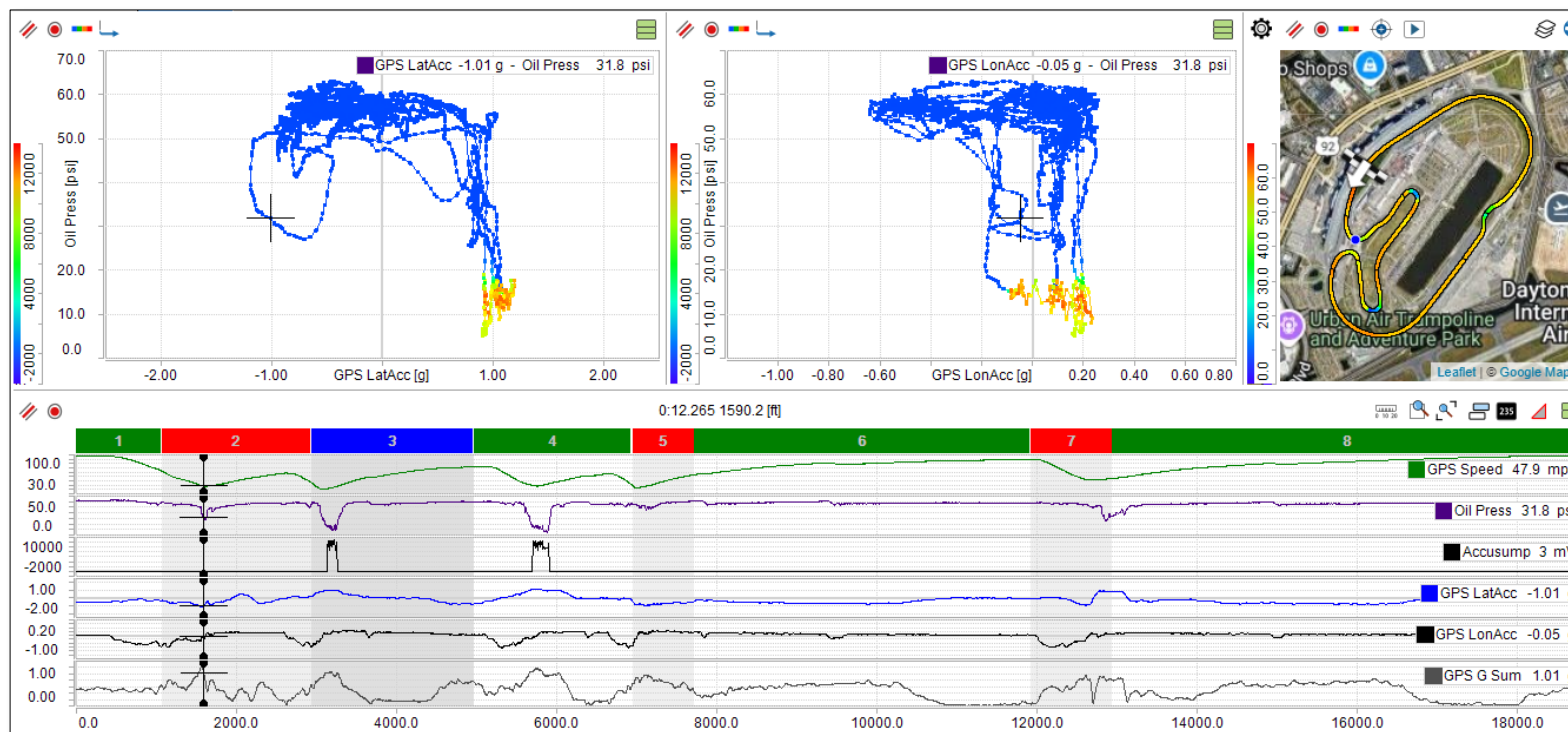
Channels Used and Parameters

Channel with name exactly matching: Accusump On []

Data Analysis

With a Focus on Oil Pressure Issues

- Next is a 'Oil Pressure' Scatter Plot page
- Including Oil Pressure vs. both Lat and Long Acc channels
- Scatter Plots and Track Map colorized by Oil Pressure



Analysis Example – Vehicle Health

Scatter Plot – Oil Pressure

Data Analysis

Comparing Two Sessions

- Here we have a Channels Report with two sessions open
- 'Race 2' had an additional 1 Qt of oil in the sump
- Some oil pressure improvements but more needed

Lap	Time	Dist [mi]	Min [mph] GPS Speed	Max [mph] GPS Speed	Min [rpm] RPM	Max [rpm] RPM	Max [F] Water Temp	Min [g] GPS LatAcc	Max [g] GPS LatAcc	Min [psi] Oil Press	Max [psi] Oil Press	Avg [psi] Oil Press	Max [#] Accusump Cnt
Russ McBride - Race 1													
out	3:26.678												
1	2:34.915	18688.7	39.7	118.1	3302	8928	170.3	-1.19	1.19	5.1	63.1	54.1	2
2	2:33.952	18706.9	40.6	118.9	3618	8872	174.2	-1.02	1.27	1.4	59.7	51.6	2
3	2:31.651	18739.9	42.5	119.3	3594	7852	176.8	-1.13	1.18	6.6	58.3	51.8	2
4	2:31.726	18695.8	42.0	120.3	3386	7704	177.9	-1.06	1.22	4.0	57.4	51.1	1
5 (best)	2:30.719	18685.3	40.6	120.4	3184	8656	179.0	-1.23	1.21	0.4	56.3	50.4	1
6	2:31.428	18689.6	42.2	120.1	3806	7524	179.1	-1.08	1.24	1.5	56.7	50.8	1
in	3:02.096												
average value	2:32.398	18701.1	41.3	119.6	3482	8256	176.2	-1.12	1.22	3.1	58.6	51.6	2
maximum value	2:34.915	18739.9	42.5	120.4	3806	8928	179.1	-1.02	1.27	6.6	63.1	54.1	2
minimum value	2:30.719	18685.3	39.7	118.1	3184	7524	170.3	-1.23	1.18	0.4	56.3	50.4	1
std deviation	0:01.644	20.5	1.1	0.9	231	632	3.4	0.08	0.04	2.4	2.5	1.3	1
Russ McBride - Race 2													
out	8:51.576												
1	2:34.791	18727.6	42.3	118.1	3476	8832	174.1	-1.06	1.15	9.3	63.2	55.6	1
2	2:33.142	18711.5	41.0	121.0	3744	7572	176.4	-0.98	1.18	19.6	58.3	52.5	0
3	2:34.417	18751.5	41.6	122.2	3652	8208	178.1	-1.05	1.15	14.3	64.4	51.4	1
4	2:32.285	18690.7	41.6	119.5	4062	8872	178.9	-1.10	1.14	19.0	58.8	50.8	0
5 (best)	2:30.422	18711.6	41.1	119.8	3348	8976	180.3	-1.06	1.20	19.4	55.5	50.6	0
6	2:31.970	18702.4	39.5	120.5	2868	7572	180.4	-1.11	1.15	13.5	56.2	50.1	1
7	2:31.914	18693.0	40.8	119.7	2894	8936	180.6	-1.06	1.20	21.1	58.1	50.4	0
8	2:32.144	18708.3	41.4	118.7	3658	8976	179.4	-1.00	1.20	14.1	56.4	50.3	1
9	2:31.559	18708.1	39.7	118.7	3924	7856	179.7	-1.11	1.17	3.5	56.5	50.1	2
10	2:32.091	18714.6	42.3	118.1	4088	7776	180.7	-1.06	1.20	5.4	57.0	50.1	1
11	2:31.267	18719.0	38.8	120.4	3808	7584	180.6	-1.18	1.13	20.0	56.5	50.4	0
12	2:31.470	18688.5	41.4	118.5	4040	7912	180.3	-1.08	1.21	17.5	57.8	50.5	0
in	11:01.876												
average value	2:32.289	18710.6	41.0	119.6	3630	8256	179.1	-1.07	1.17	14.7	58.2	51.1	1
maximum value	2:34.791	18751.5	42.3	122.2	4088	8976	180.7	-0.98	1.21	21.1	64.4	55.6	2
minimum value	2:30.422	18688.5	38.8	118.1	2868	7572	174.1	-1.18	1.13	3.5	55.5	50.1	0
std deviation	0:01.263	17.4	1.1	1.3	418	611	2.0	0.05	0.03	5.9	2.8	1.6	1

Analysis Example – Vehicle Health

Channel Report – Two Sessions

Conclusion

- The User was thankful about his new MXL2 configuration
- Also happy about his new general RS3 understanding
- He was really glad that we analyzed his engine oiling concern
- Best news, he won the Sunday Race #2!
- He later found more info on his Accusump setup, including that he was even lower on his sump oil level than he thought



Analysis Example – Vehicle Health

Conclusion

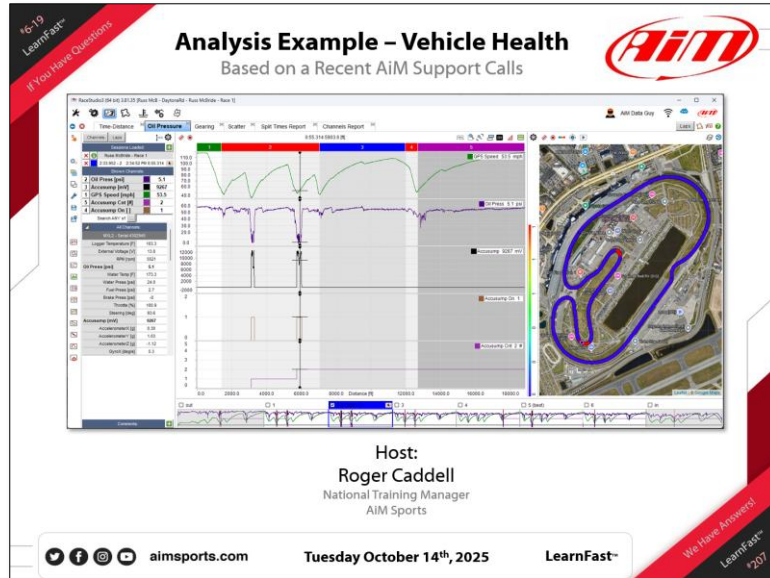
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Currently **293** Videos and Growing

YouTube www.youtube.com/aimdata



- All New 2020 - 25 Live Webinar Videos
- Software Updates with RaceStudio 3
- Pre-Calculated Gear Position Function
- Configuring WiFi Communication
- Customizing AiM Device Logos
- RaceStudio 3 Basic Configuration - Part 1
- RaceStudio 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
 - Selection Criteria
- Data Views
 - Sensor Calibration
- Measure Units
 - Conditional Alarms
- Sort Channels
 - Gear Position
- Test Properties
 - Firmware Update
- Per Lap Color
 - Solo Configuration
- Export Tests
 - Transmit Tracks
- Channel Reports
 - Gps Manager Overview
- Setting Time
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Additional Materials

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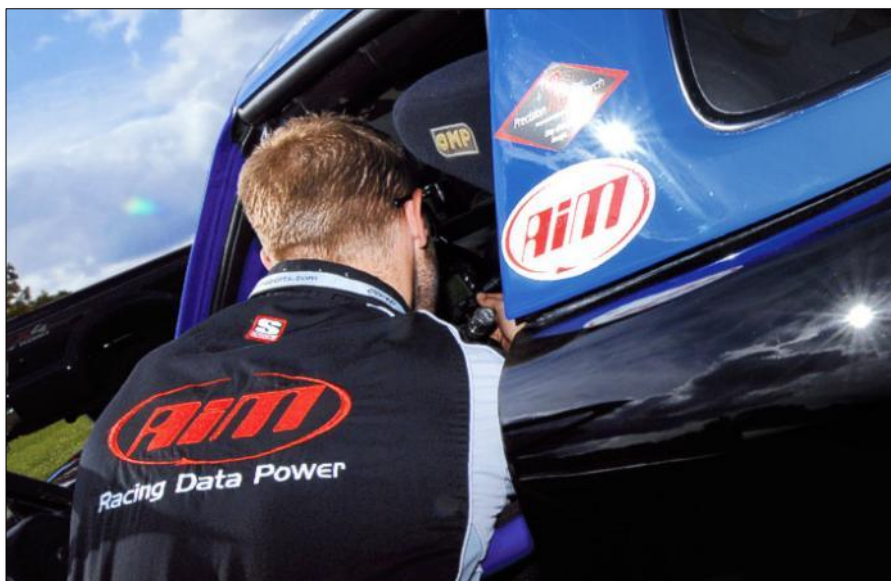
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Customer Support



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!

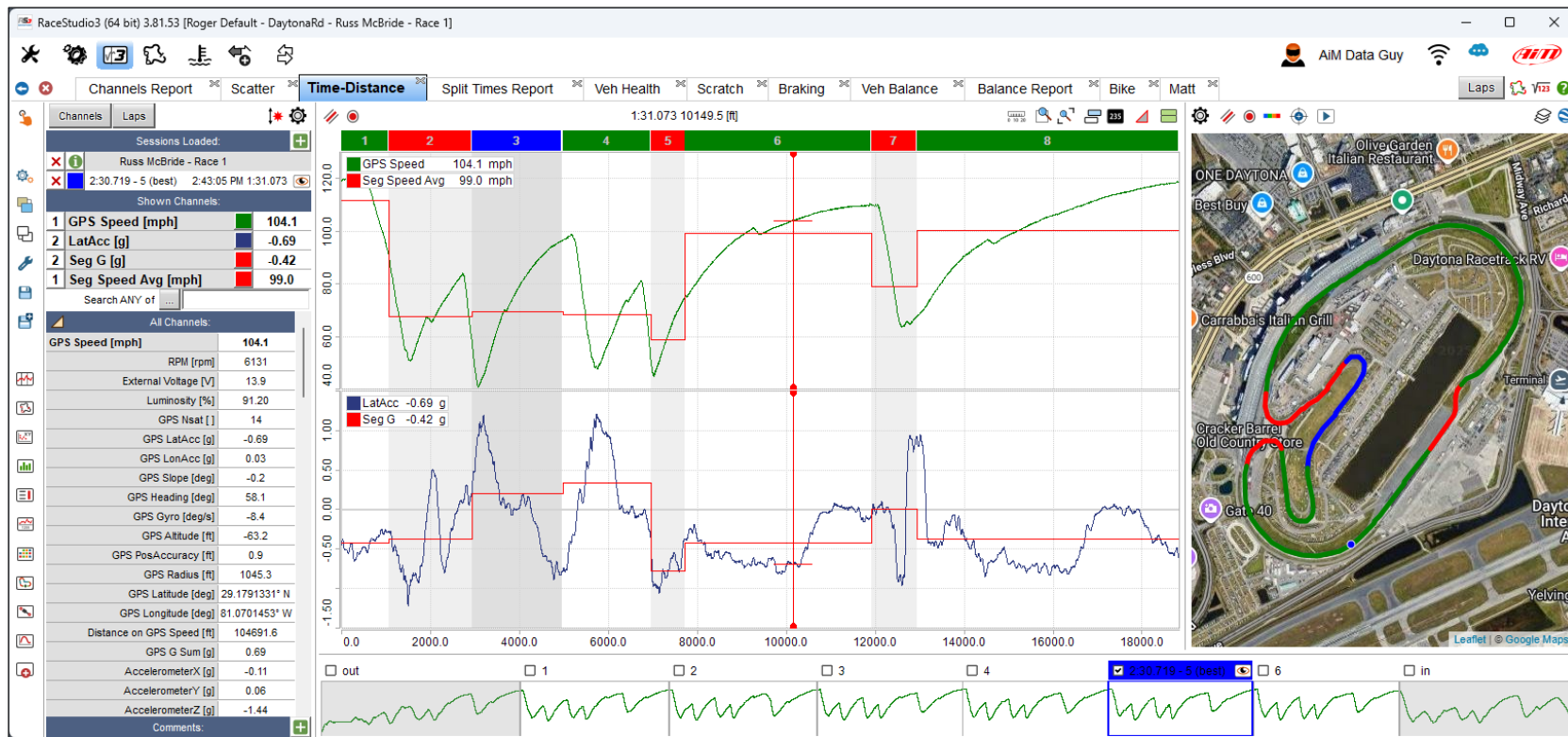
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Segment Based Math Channels

Ray Phillips – Precision Driving Analytics



Next AiM Sports Webinar

Tuesday, October 28th, 2025 – 10am Pac / 1pm East

Next Webinar

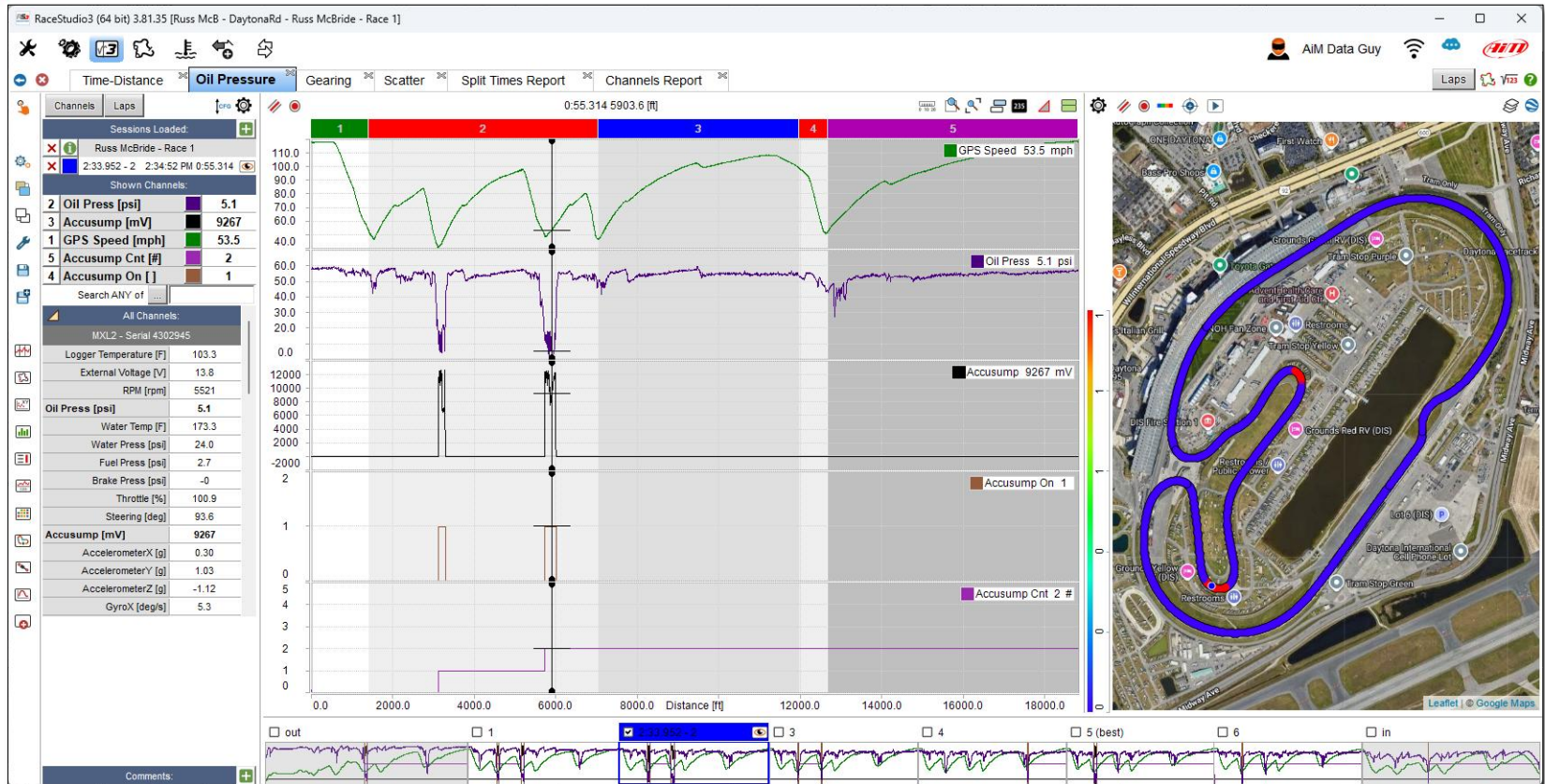
2nd & Last Tuesday of Each Month

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aimsports.com

Tuesday October 14th, 2025

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