

04/22/16 Testing

Purpose of test sessions

- Gather information on new QA1 ProMaStar shocks and establish baseline settings for bump/rebound
- Develop baseline tire pressures for new Hoosier VFF tires
- Evaluate performance of Hoosier VFF tires versus Dunlop 9092 tires
- Evaluate Flir One camera performance vs Raytek IR thermometer

General Info

Pikes Peak International Raceway

Fountain, CO

CCW Direction (Normal) Turn #1/#2 on the high bank! With infield road course

Weather:

Temp: 72 -76 degF

Sky: Clear

ToD: 13:00 to 15:30 Hrs

https://www.wunderground.com/history/airport/KFCS/2016/4/22/DailyHistory.html?req_city=Fountain&req_state=CO&req_statename=&reqdb.zip=80817&reqdb.magic=1&reqdb.wmo=99999

Test Equipment

- Intercomp Tire Pressure Gage- 0-30PSIG.
 - Checked against precision test gage setup.
 - Test gage reads 14.85 PSIG when Intercomp reads 15 PSIG
- Raytek IR thermometer
- Flir One Thermal Imaging Camera, for Android
- Durometer (A Scale)

Initial Check of Hoosier VFF Tires

52-55 Durometer @ 88-92 degF tire surface temp

Car Info

1969 Lotus, Type 61 Formula Ford.

Notes: Willow Springs gearing still installed, which was way too tall for PPIR. 1st was about 1000RPM short for the infield. 3rd gear was typical 4th for PPIR. Willow jetting was still in.

Car Setup

- New QA1 shocks front, Koni 8211s rear
- Car corner weighted before Session #1
 - LF- 234# RF-235# LR-349# RR- 352#

- Traditional Dunlop setup
 - -.5deg Camber F/R
 - 1/16" total toe in, Front
 - 0" minus toe in, Rear

Session #1

Out –

- 14 PSIG Front- 16 PSIG Rear
 - Lacking any better information, I used my typical initial Dunlop pressures.
- Shocks set to 4/4 from full soft

In-

Left Front				Right Front		
113	114	108		111	115	113
Left Rear				Right Rear		
114	112	124		124	126	123

Hot tire pressures-16/19 PSIG

Notes:

- Really pussyfooting with new shocks.
- 10 laps
 - Down to 1:09.2
- Lap times flattened out, came in to check tire temps and change shock settings.

Session #2

Shocks set to 3/3

Cars testing in same session:

- G Tapp's (Winkleman WDF-1)- Dunlop's Durometer 45/52 F/R
- J Tapp's (Merlyn MK 11?)- Dunlop's Durometer 52/52 F/R
- Mihalich Hoosiers Durometer 50/50 F/R

Out-

- Shocks set to 3/3
- Tire pressure 14/16

In-

Left Front				Right Front		
113	123	122		118	123	117
Left Rear				Right Rear		
129	132	131		124	128	124

Hot tire pressure-15/17 PSIG

Set down to 14/16

Notes:

- Too much bounce going over “Tunnel Dip” between Turn #1/#2.
- 10 Laps
 - Down to 1:08.1

Session #3

Out-

- Shocks set to 4/4
- Tire pressure 14/16

In-

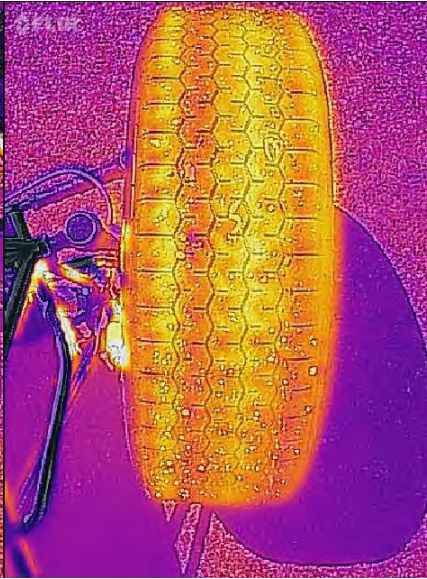
Left Front				Right Front		
112	115	114		109	111	109
Left Rear				Right Rear		
118	125	125		124	125	122

Hot tire pressure-14/16 PSIG

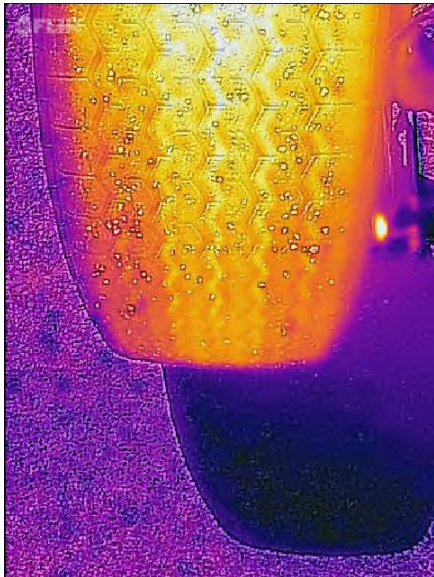
Left Front



Right Front



Left Rear



Right Rear



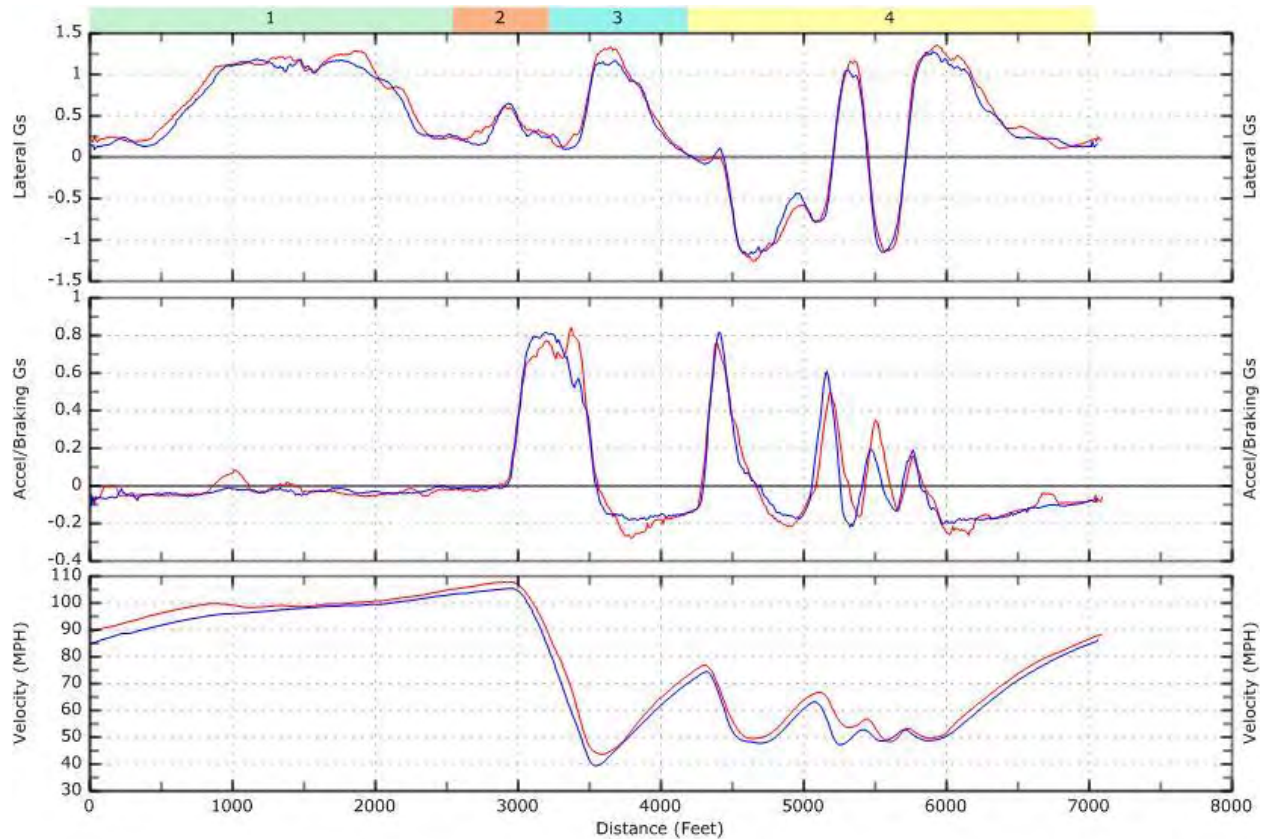
Notes:

- 7 laps
 - Down to 1:08.2
- Student traffic
- Starter failure, end of testing
- Next day cold tire pressures- 11/13PSIG

Results

Data Comparison Session #3, 04/22/16 to Afternoon Race, 10/24/15

Red is 10/24/15, on Dunlops, blue is Session #3, 04/22/16, on Hoosiers.



Data shows that performance levels between the VFF Hoosiers and Dunlop 9092s are quite comparable. I did not get to the point of locking up the tires in any of the braking zones. I did not get the Hoosiers to talk to me as the Dunlops will do when approaching their cornering adhesion limits. I would get an occasional cornering chirp, but I don't think I was anywhere near the limits of the Hoosiers.

Considering that the Hoosier tire pressures are not fully worked out and I was not pushing the car, I believe that there are still significant performance gains to be realized.

Conclusions

I'm thinking that hot pressures need to be about 13/15 PSIG. Morning cold pressure could be as low as 10/12 PSIG. Inter session pressures need to be worked out.

I really like the new Hoosiers and am looking forward to further setup & development. ... and got to love the pricing @\$720 per set.