

Folks,

During a discussion on actually realizing the efficiency of our vehicles at WTEA last Thursday I came upon the idea of running two different formats. One race, let's say RA, would include a 1 minute pit stop, the other race, lets say, Fox Valley would not include a pit stop and the drivers would be on the road for exactly an hour.

This would be a proposed experimental attempt at actually checking out the true potential of our vehicles batteries.

After much discussion the small group meeting with Sara thought it would be interesting to try this year with the specifics as to which race being determined later.

What do you think?? Shall we give it a go??

Damon Smith

EC North High School

I do not understand how one minute would change much in regards to efficiency (not running of out of battery power)???

That is a good question.

It amounts to more than a minute. There is a certain amount of ramp down time while your driver moves to their pit, then the minute starts, then there is ramp up time in the pits and on the track while getting back up to speed. I am guessing but I think it will amount to a 1/2 a lap or more at RA and 2 laps or more laps at FV (depending on the track used).

Another item to remember when thinking about this idea is amperage use while the vehicle is ramping down and then back up. Our vehicles will utilize only 40 amps while cruising on an even keel at say a speed of 30 mph. When we are coasting then we use none. When we slow down to say 10 mph we use over 60 amps and when we start up without the ramp up feature on our controller activated we utilize well over 100 amps. All in all we are not able to get a clean assessment of our vehicles abilities when we are forced to stop and start.

Finally, the concept of gearing the vehicles to the course comes in with a pit. For class one vehicle no shifting is allowed. There for my students mathematically determine the speed (gear ratio) they need to run to finish the course on a wing and a prayer. This becomes much more complex when the pit stop is calculated into the equation, primarily because the amperage draw is variable depending on the other vehicle traffic and how the driver drives through this traffic while entering and exiting. All of this determines the gear ratio used on each track and it is mighty tough to figure out. Therefore without the pit stop we can more easily calculate the ratio needed depending on the amperage draw at the speed we need to keep to empty our batteries and still be rolling on the course as time ends.

I hope this long winded answer helped answer your question, please consider allowing for this trial to happen.

Damon

Thanks for a very good answer! What you say makes sense. However, my guess is not much will change as far as where a car places) as long as speed limits and time limits remain the same (battery power left at the end of the race). One thing I want my team to improve upon is data collection. Last year being our first we didn't do an adequate job. I'm sure you are several years ahead of us.

No pit stop would make it more of an endurance race. Did pit stops become the rule for safety concerns?

Maybe the Oostburg race time could be extended since the HMV will not be there?

I have no problems with one race being non -stop. Let's try one and see what happens.

Allan

Damon,

I could care less either way, I know your goals in this are to truly pursue the engineering aspects you are building into your program, which is where we all would hope to be some day! I only wish I had the DE background to this level that our students could grasp this detail in the outcome and application of our cars! We do go for engineering and data collection, but do not have the knowledge you and your students have yet for that deep of comprehension of the data...

My only comment, and it is our problem as advisors to make this decision, not yours, is if we do hold a non-stop event and schools wish to pit to change out drivers, there is likely no chance of them placing any more in the endurance part of the contest. It is like putting an XRV up against a true class 3 vehicle, there is no comparison! So I do suggest this only happens at one heat this season personally, as there are ALOT of advisors out there pushing driver time versus true data collection and we want to remember everyone's goals as we progress forward. Watertown's varsity car will not be changing out drivers this year, where as our other two probably will. We will adapt though!

Jesse Domer, Watertown High School

For the 2009 Spring Season:

Both 1-minute mandatory pit stops will remain at Road America.

The first heat at WIR will have a 1-minute mandatory pit stop; the second heat will not. We will use 2009 as a test year to determine whether the vehicles efficiency actually increases without a pit stop. The best heat will still be counted for points/awards.