Here is a video that should put to rest any concerns about the safety of Li-Ion phosphate batteries.

http://www.valence.com/assets/flash/safety_video_large.html

I often wonder about the safety hype of batteries when we have no problems driving around on 15-35 gallons of gasoline.

We are interested in the Li-Ion Phosphate batteries. If they are allowed in the Wisconsin Electrathon, the Eau Claire North team would be interested in using them for our Class-II vehicle. Do you know how we could obtain these batteries?

Thanks, Eau Claire North Electric Vehicle Team

We are also interested in using them for the class II vehicle since there are no spending caps on these cars. We received ours from Valence technologies.

Here is my take on the Lith-Ion Batteries....

The batteries Oostburg High School are planning to use that weigh 65.4 lbs rated at 65Ah. That means class three vehicles (the only class we would allow battery variances) won't have any problem going well over 25mph at FVTC. I think we are going to have to limit the weight of Lith-Ion batteries if we want them to be competitive with Optima's.
NOTE: I now see why Iowa does not allow Lith-Ion. We could determine a weight comparison to Optima. Which according to my calculations a Lith-Ion battery has approximately twice the battery energy of a lead acid Optima. See calculations below

Optima (Red Top 35)
12.8v x 44 Ah = 563.2 Watt Hours / 33.1 lbs = 17.0 Watt Hour Pounds

Lith-Ion(uev-18xp)
19.2 x 65 AH = 1248 Watt Hours / 32.7 lbs. = 38.2 Watt Hour Pounds.

I have two possible solutions to keeping the Lith-Ion batteries in competition with Optima.

1. Limit the weight of Lith-Ion batteries to 33.5lbs (1/2 of 67lbs)

2. Allow variances in the rules for experimental purpose only, they would then not qualify for an award. This would allow teams to experiment and still keep teams meeting the rules in a competitive format. What do you think?

NOTE: we are considering changing the classes of Electrathon this year by adding a class three. This would be patterned after Iowa classes.

Wow... I knew those batteries were powerful... but not THAT powerful.

I'd be the first one to say... allow them to use them for experimental purposes. I'd love to see what those batteries could really do if they are going to run a standard weight pack.

Would have to agree on the limiting of weight for a trophy though, otherwise you might just price class 3 out of the reach of the smaller teams. Those batteries are not cheap, but you get what you pay for.

This would still allow the "out of the box" creativity for this class.

We would more likely use them as “experimental” at road America then. I’m not really keen on the idea of racing a typical Class 2 car in class three against the XRV’s just because of battery technology. I think we will be seeing lots of different battery technology in the future. For instance the Graphite Foam Injected Lead Acid battery.

http://www.news.com/8301-10784_3-9807447-7.html

These would give an extreme advantage and still fit into the current rules. There are also teams that cannot afford brand new optima batteries at every race. They will certainly be disadvantaged as well. Let’s reflect on Wisconsin dells, I have to be careful in my wording here, but I think we are able to talk openly. We used old red top optima’s, they had been compromised from the race we won at FVTC. The same cars raced at WI Dells, only I believe our opponent’s cars had new Optimas and they came out ahead, by a lot. Many new teams cannot afford new Optimas every race or even Optimas at all.

So, riddle me this, is there a difference in competing with 67lbs Li-Ion as opposed to competing with brand new Optimas for every race, or every heat?

We already have a letter into the aforementioned company regarding Graphite Foam Injected Lead Acid batteries, if they are acquired we will again be testing the solidity of the rules as stated.

I believe class 2a in Iowa also states 6. No multi-speed transmission will be allowed to race.

So is it the board's vision that most class 2 teams will be moving to class three? Is there harm in opening up class three/Open class to include XRV's and battery technology to include 67 lbs? Is the Open class really that fair anyway, when there are no spending caps? Should Open class be a place for the experimental vehicles as well and still be in contention for a trophy? Maybe the vision of "Open" class should be safety and that is all? This class is where we will see new technologies introduced and designs being pushed to the absolute limit. High schools could compete with colleges to invigorate every possibility in green transportation. This is cutting in to my bow hunting time

-OUT-

Bow hunting.... We're going to have to talk Luke. I'm a bow hunting fanatic. Our batteries at Wisc. Dells had been used once at FVTC. But both cars had mechanical problems so the batteries were never drawn down past 10.5 volts.

Would you compete in class three against XRV's (street stock) if they had to weigh more to balance the increased battery weight so the power/weight factor would be similar to standard Electrathons?

Isn't it like a right of passage in Bayfield? I'll regress and quote J.M. on this.

"The XRV was NEVER meant to compete against the class 1 & 2 vehicles. There is no way it could with the rolling resistance of the DOT rubber. "

This is complicated; would increasing the power/weight factor for XRV's make them heavier and unsafe to race w/ standard Electrathon? I'm trying to picture this race, XRV's, Oostburg car #2 and college cars. It would be like racing apples against oranges and then awarding a pineapple, very fruity. It wouldn't be very exciting to limit the

XRV's to 67lbs of lead acids, while college teams would probably not have much of a chance racing against li-ion and XRV's with 134lbs of batteries.

"Class 3 - Open: This class would have no spending limits, battery restrictions would also be removed or changed. XRV's would be allowed but regulations would require vehicle to have a similar weight/efficiency to a standard Electrathon. Battery Chemistry would be opened up, but restrictions in weight would keep the energy levels similar to 67lbs of lead-acid battery(Optima). Also. Post High School/Adult teams could compete"

How would we measure "similar weight/efficiency" for XRV's?

What about the transmission rule? Are they only allowed in class 3 like Iowa?

We are trying to include 3 new things, XRV's, Battery Composition and College Teams. Instead of making more rules and classes should we just ***create more awards***? Class 1, Class 2 like always. College awards so they are racing w/ class 2 but competing against each other. XRV awards so they too are racing w/ class 2 but competing against each other and awards for alternative Battery Composition, we would race w/ class 2 and likely compete against ourselves this year but may not be alone in the following years. Lots more winners. Less rules. Comments?

I would like to see the Lith-Ion batteries used in the open class due to their cost.
As to level the playing field between the Lith-Ion and the Optima you could use the weight format and or put in a cost format for batteries as well as weight. Just a thought.
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Fishing is the answer
the ice is good and the weather is great
however, the fish are not eager to jump onto my cookstove :-(
Since class three is an unlimited class with money being the only constant I think that any new battery technology should be permitted.
Please remember that the object is NOT TO WIN but to allow the students a chance to experiment with different materials, motors, gearing, tires and so forth.
personally Bradford's auto students are just excited about going to Road America even if our car is not finished
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