Subteam Updates: Race Strategy

Race Strategy has been working on creating more accurate optimization models and moving closer to vehicle testing. The main goals of RS are to optimize every part of the vehicle, make sure all the aspects of the car work together, and understand our energy system. The team is preparing for our first test in the Michigan Engineering wind tunnel. We will use a 1/4” model of our new body design constructed from tooling board to help quantify our aerodynamic drag. Even though we plan to average only 15 mph during competition, we will have the opportunity to test our model up to 120 mph in the tunnel.

Race Strategy has also made significant changes in our Data Acquisition system. This system collects altitude and position data around the track, and will calculate the optimal speed at each position. This year, we are working to integrate our real-time data onto a smartphone, which will allow us to make better mid-race decisions. In addition, the new mobile device will have greater connectivity and a much more intuitive interface than the previous Arduino system. However, the move to a smartphone requires us to develop a network communication between the phone and base computer in order to have the required computing power.

Race Strategy’s third focus is rolling resistance testing. The cold weather has stalled our plans, but just like many people do, we are trying to continue to exercise our vehicle on a new indoor treadmill. In addition to protecting our vehicle (and members) from the elements, a treadmill test has no wind contamination, providing us with more accurate results.

Sponsor Highlight: College of Engineering

The University of Michigan’s College of Engineering is continuously ranked as one of the top ten engineering schools in the nation and one of the top fifteen in the world. Founded in 1854, the College was the first public university in the country to grant an engineering degree. As of today, there are over 7,000 enrolled students from undergraduates to grad students, as well as 60,000 living alumni. The College of Engineering offers many multidisciplinary opportunities to its students. Students have access to the Wilson Student Team Project Center as well as over 100 labs and opportunities to assist with their projects and research. The Wilson Center allows students 24/7 access to a machine shop, vehicles, workspace, a design room, and more. The Wilson Center also offers training in basic machine work as well as specific methods such as mill and lathe. Supermileage appreciates all the University does to support us.

Go Blue!
What is modular design? Professor Bell, our multidisciplinary mentor, has called it a “plug and play” system, and the idea of modular design is instead of creating one piece, or in this case building a single vehicle, we build many pieces of the vehicle individually and once they’re complete, assemble the finished single vehicle in its entirety. Instead of permanently fixing every element into the vehicle, each part is attached by a mounting point previously set into the carbon of the body. This allows more time for testing and optimizing specific aspects individually.

In the past, if we needed to redesign a specific function of the vehicle that had already been completed, we would have to remove it from the body before doing so. Not only does this technique risk damaging the body, but it is time consuming and forces everyone to work in a very cramped space. The rules of our competitions state that significant changes must be made annually to the vehicle. Modular design allows us to adhere to this rule by simply replacing last year’s mounted parts with this year’s redesigned ones. As DII lead John Young states, “With this ability to only change one system from year to year we have much more time to optimize our designs, leading to a higher quality and more competitive vehicle”.

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**Modular Design**

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**What are your plans for the New Year?**

- Research new testing methods
- Start Tech Talks at GBMs to increase member understanding
- Produce team documentation so we don’t forget our past mistakes or solutions
- Create local restaurant sponsors
- Create a Systems engineering position to foster intra-team communication
- Revamp the website to be easier to navigate
- Get more sleep!
- Set up a Work Day carpool to get members from Central Campus to North
The purpose of a newsletter is to provide specialized information to a targeted audience. Newsletters can be a great way to market your product or service, and also can create credibility and build your organization's identity among peers, members, employees, or vendors.

First, determine the audience of the newsletter. This could be anyone who might benefit from the information it contains, for example, employees or people interested in purchasing a product or requesting your service. You can compile a mailing list from business reply cards, customer information sheets, business cards collected at trade shows, or membership lists. You might consider purchasing a mailing list from a company.

Next, establish how much time and money you can spend on your newsletter. These factors will help determine how frequently you publish your newsletter and its length. It's recommended that you publish your newsletter at least quarterly so that it's considered a consistent source of information. Your customers or employees will look forward to its arrival.

Your headline is an important part of the newsletter and should be considered carefully. The subject matter that appears in newsletters is virtually endless. You can include stories that focus on current technologies or innovations in your field. You may also want to note business or economic trends, or make predictions for your customers or clients. If the newsletter is distributed internally, you might comment upon new procedures or improvements to the business. Sales figures or earnings will show how your business is growing.

Some newsletters include a column that is updated every issue, for instance, an advice column, a book review, a letter from the president, or an editorial. You can also profile new employees or top customers or vendors.

Selecting pictures or graphics is an important part of adding content. Contact Information

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