Volume 2, Issue 3 November 8, 2005

Mississippi State University

X-cited!

Year 2 Presents Challenges, Opportunities

Special points of interest:

- *What happens in year 2? Read the adjacent article.*
- *See what each thrust is working on in our regular Thrust Update Area.*
- *Kyle Crawford is featured as this edition's Student in the Spotlight.*
- *Elementary school students! Give us your ideas for a name for our Equinox! See page 2.*

As the MSU team submits their first progress report this week, they have plans in place for a busy year 2.

Reporting procedures have changed somewhat since the first year of the competition. Year 2 will have fewer technical reports because of the amount of time the team will have to spend working on the vehicle. This year's reports will be broken down into 2 technical reports and 3 progress reports to give an update on the team's progress of integrating their architecture into the Equinox.

As always, the team must work toward specific technical goals to keep in form with the competition. Year 2 technical goals include integrating the architectures and modeling development from year 1. The team also plans to emphasize pre-competition readiness in the areas of safety, performance, and technical reporting.

A group of EMCC students listen to Ron Lewis as they learn about Challenge X and tour the CAVS facility. The visit was a part of the outreach program for year 2.

The outreach program also remains strong for year 2 of the competition. This year will include all the outreach events from last year, and a few more. One new event this year is a "Name our Vehicle" contest for children in grades K-8. This contest will give even younger students a chance to learn about Challenge X.

Thrust Update Area: What are they working on?

Vehicle Modeling and Controls

The vehicle modeling and controls group spent last week putting together all component values and efficiency maps that are as close as possible to the actual values. This is in preparation to simulating their powertrain in PSAT with the final VTS, for the Fall Technical Report that is due soon.

They also ran a few analyses in PSAT to compare the 5-speed VW transmission and the 6 speed GM transmission.

Thrust Leaders: Jimmy Mathews and Kennabec Walp

Mechanical

The mechanical group pulled the engine out of the Equinox and are nearing completion of the cradle jig.

Thrust Leader: Brian Christian

Electrical

The electrical group is continuing to work with the controls group on developing the control strategy and testing the various functions.

We are also continuing to develop the various wiring harnesses for the Equinox.

Thrust Leader: Ron Lewis

Powertrain

We are working on completing the required documentation for the progress report. Christopher went to Virginia last week to meet with CCA Inc. to discuss a NOX reduction strategy.

Thrust Leader: Christopher Whitt

Outreach Program

Last week we had our first visit of the year from EMCC students. They visited Friday to learn about the Challenge X competition and took a tour of the CAVS facility. More visits are scheduled.

Outreach Coordinator: Amanda McAlpin

Fall is finally here!

Even in Mississippi, November brings cold weather. As you unpack your coats and sweaters, remember to think about how the **colder temperatures affect your vehicle**. David Oglesby, leader for the MSU Challenge X team, says to remember vehicle maintenance in the cold weather. And a car that runs better is a car that gets better gas mileage!

"As the weather gets colder, you should make sure to check the antifreeze in your vehicle," said Oglesby.

And, as always, check your oil and make sure your tires have plenty of air. Being stranded with car trouble is even worse when it's freezing outside!

Atta-Dawgs

- Good job **mechanical group** on removing the engine from the Equinox!
- **Brian and Stephen** got the VW engine running on the test stand!

Upcoming Events

November 4—First team progress report for Year 2 due.
November 8—Safety tech talk.
November 17—First technical report rough draft due.
December 1—Technical report #1 final draft due.

"Name our Vehicle" Contest

Open to grades K-8

Submit your idea for a great name for our vehicle! If your idea is chosen by the Challenge X team, we'll put it on our Equinox and you'll get a prize!

Deadline January 15

Please submit name ideas with your name and contact information to:
Challenge X
200 Research Blvd
Starkville, MS 39759

Students in the Spotlight

This column gives you a behind-the-scenes look at the students who are working on the Challenge X competition at MSU.

This week's student in the spotlight section features Kyle Crawford, a part of the powertrain group and our resident emissions expert. Kyle joined the Challenge X team in May and has since been invaluable in that area of the competition. Kyle has become a great asset to the dynamics of the MSU team, and is simply a pleasure to be around. That is why we chose him for this edition's spotlight.

Name: Kyle Crawford
Hometown: Columbus, MS
Major: Graduate student in Chemical Engineering

Here Kyle answers a few questions about his experience with Challenge X.

Q. What do you feel like you are gaining out of being part of Challenge X?
A. Challenge X has provided me an opportunity to be in a full-time job atmosphere despite being a graduate student. It is much like the real work force in that we work as a team and each member is responsible for accomplishing tasks in his or her area of expertise. Also in our competition many times the responsibilities of group members overlap so we have to help each other out in these situations. All of the people working on this project are committed to representing Mississippi State well on a national basis, and we are all more than willing to help another member in need.

Kyle runs an emissions test on the Equinox.

Q. What is the most difficult part of Challenge X for you?
A. The most difficult part of Challenge X for me has just been getting caught up. I am relatively new to this team and I had to learn fast about the challenges I was facing as a leader for the emissions area. I feel like we are close to being on pace for the Year 2 competition in emissions now. We still have a lot ahead of us, but things seem to be running smoother now.

Q. What do you plan to do after you get your degree?
A. I hope to get a job in a similar field to the emissions work I'm doing now. This is a very interesting area, one where much improvement can and will be made. With the great emphasis on environmental impacts today, improved car emissions could be very beneficial to areas such as global warming and general health issues related to large amounts of vehicular emissions. I believe this will be emphasized even more for many car manufacturers in the near future.

For newsletter suggestions or corrections, please contact Amanda McAlpin at amcalpin@cavs.msstate.edu.