Collegiate Design Series News

Volume 2, Issue 6 March 2005

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AERO DESIGN EAST		
Design Reports, Plans and Payload Prediction Graph	Send 3 copies to: Eric Schwartz 12208 Calaboose Ct Orlando, FL 32825	March 4, 2005
Late Registration deadline		March 3, 2005
AERO DESIGN WEST		
Design Reports, Plans and Payload Prediction Graph	Send 3 copies to: SAE c/o Lockheed Martin PO Box 150928 Fort Worth, TX 76108	March 18, 2005
Late Registration deadline		March 18, 2005
CLEAN SNOWMOBILE CHALLENGE		
Engineering Design Paper (PDF format)	http://www.mtukrc.org/upload.htm	March 4, 2005
Technology Implementation Cost Assesssment (TICA in Excel format)	http://www.mtukrc.org/upload.htm	March 4, 2005
FORMULA SAE		
Safety Structure Equivalency Form	Send via email to: katklauz@aol.com	February 1, 2005
Design Report & Design Spec Sheet	Send via email to: fsae@sae.org	March 1, 2005
Cost Report (Must be postmarked by)	Send via mail to: Attn: Suzy Zukowski Team SAE - DaimlerChrysler Corporation CIMS 483-01-14 800 Chrysler Drive East Auburn Hills Michigan 48326-2757	April 1, 2005
Fuel Type Order	Notify Kathleen McDonald of the type of fuel you use via email katklauz@aol.com	April 15, 2005
Paddock Spacing	Notify Kathleen McDonald if transporter exceeds parking limit via email katklauz@aol.com	April 15, 2005

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SUPERMILEAGE		
Design Proposal	Sent 3 copies to: Fredric Lee Kinney Prod Engrg Truck Comp Oper NA Eaton Corporation, Trans Div PO Box 4013 Kalamazoo, MI 49003-4013	March 31, 2005

MINI BAJA		
	Late Registration	Roll Cage Specification, Design Reports Due & Cost Reports Due
EAST	March 21, 2005	March 28, 2005
		Email to: minibaja-east@sae.org Mail to: Rochester Institute of Technology Attn: Mini Baja East 2005 Mechanical & Manufacturing Engine 78 Lomb Drive Rochester, NY 14623
MIDWEST	March 21, 2005	May 2, 2005
		Email to: midwest-minibaja@sae.org Mail to: Randall Roth Honda R&D Americas, Inc 21001 SR 739 Raymond, OH 43067-9705
100th	March 21, 2005	May 2, 2005
		Email to: minibaja-100@sae.org Mail to: SAE International Attn: SAE Mini Baja 100 400 Commonwealth Drive Warrendale, PA 15096
PLEASE REFER TO RULE BOOKS FOR COMPLETE DETAILS ON DEADLINES!		

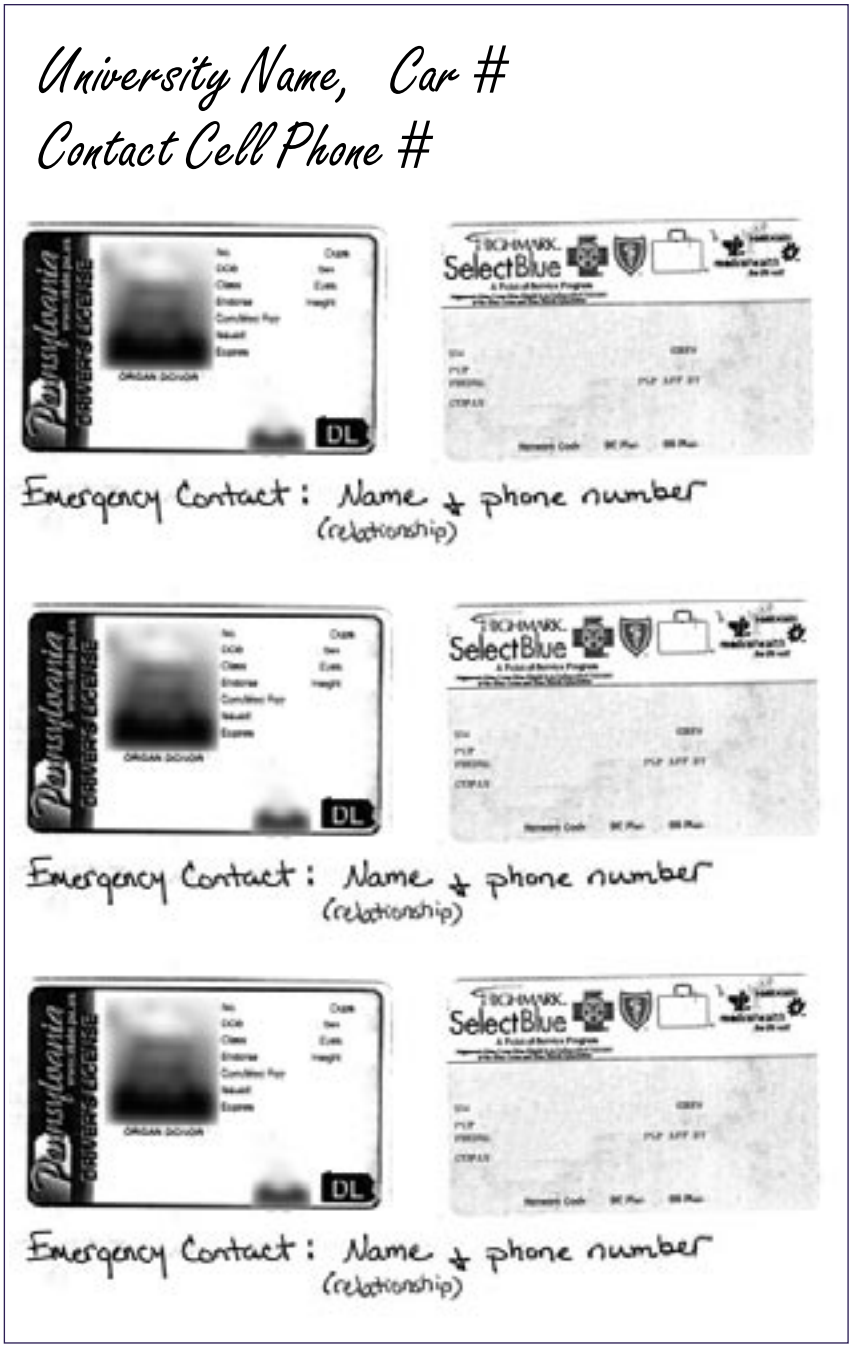
Simplified On-Site Registration for ALL Competitions!!

On-site registration at all Collegiate Design Competitions is being simplified to make the process quicker and easier. Starting this year, there will be only 2 required forms. First – The liability waiver which must be completed and signed by all participants. Second – The new team record sheets which YOU create and bring with you to the event.

Team record sheets are just copies of each team member's driver license and insurance with their emergency contact information written below the cards. It is simple and should be relatively easy to create. The layout to the right shows what we have in mind, although we don't care how many members you include on each sheet – just make sure that you have all the information present.

If you don't create the team record sheets covering all the team members, then you will be required to fill out forms on-site which will take time and cause your registration to be delayed.

If you have any questions about this improved process, please email collegiatecompetitions@sae.org.



2005 FSAE Notices

Technical Inspection

Due to the limited space inside the Main Tent, only four (4) team members will be allowed into the Tech Inspection area. All other team members, the Faculty Advisor and other spectators will be required to watch from the periphery of the tent along with any toolboxes and your rain tires. The Dynamic Passes that you will receive at Registration will be used as the "pass" into the tent. Team members may rotate in and out of the inspection area as required as long as there are no more than four in the tent at any one time.

Also, at Technical Inspection, we will need ALL your drivers to present themselves when you come to Tech, not just the tallest one as we have required in the past. The Technical Inspectors will select who to use for the roll bar height check and for the egress test. They may well be different people.

If you have any questions, please forward them to katklauz@aol.com.

Push Bar Requirement-REMINDER!

After a review of the Formula SAE site layout and our operating procedures the organizers have decided to require that, starting with the 2005 competition, cars must be moved using a push bar. This is an operating procedure change and is not part of the requirements and restrictions governing the vehicle itself. The new push bar requirement should not affect your vehicle design. A number of teams already use simple push bars of various designs and we leave it to you to produce a device that works well with your car.

Although for FSAE 2005 the push bar is being handled as a procedural requirement, the Rules Committee anticipates adding it to the rules starting in 2006.

Rule 5.11.1 "Moving Vehicles" is unchanged and remains in effect.

And, before anyone asks, the push bar is not part of the car and should not be included in either the cost or design reports.

2005 FSAE Operating Procedure Requirement - Push Bar

Each car must have a removable device that attaches to the rear of the car and allows two (2) people, standing erect behind the vehicle, to push the car around the event site. This device must be presented with the car at Technical Inspection.

Formula Program Information

The month of January is now gone, it is now February and the 2005 FSAE event is only 3 months and 2 weeks away!! **Information is NEEDED by the Education Relations department for the completion of the 2005 FSAE Program.** By now, you should be inputting your vehicle specs online under your team registration page. If you do not input this information before March 31, 2005 then your team's information will not be published. Also needed is a list of your team members, advisor, and sponsors by the deadline of March 31, 2005. Again if this information is not obtained by the deadline, the information will not be published. The list can be emailed to fsae@sae.org. Please email in a word document and refer to the example below:

Team Members:

Name, Team Captain_____

Name _____

Name _____

(You can title your team captain, but no other titles will be published)

Faculty Advisor:

Name _____

Sponsors:

Name _____

Name _____

Name _____

Mini Baja 100 Preparedness

Mini Baja 100 will be very hot and very dry and you'll need to be ready for those conditions. Tucson's average high temperatures in June is 99° F (37° C) and there is a 90% chance of clear skies, so dehydration and severe sunburn could be real possibilities.

Whether your team is from the Sun Belt and believes it knows all about heat and sun or you're in the North still shoveling snow and scraping ice, please read the following.

Dehydration – Dehydration can only be avoided by drinking lots of water. Exactly how much water you need depends on such conditions as how hard you're working, the temperature and the available shade. Experts on desert survival agree on the following: (1) thirst is a bad gauge of how much water you need and (2) you must keep drinking regularly. The Army Survival Manual says "At temperatures above 38 degrees C, drink 1 liter of water every hour." Chapter 13 of the Manual, "Desert Survival", is well worth reading and, fortunately, it's on-line at a number of sites - just search for FM 21-76.

Sunburn – The only way to prevent sunburn is to reduce the amount of radiation hitting your skin. That means (1) sun blocks, (2) clothing and (3) shade. As starting points make sure you're well protected with sun screen and wear a hat. Remember that radiation reflects off the ground so you need to protect yourself from sunburn from both directions.

As to what to wear, here's a thought: while it may not be practical to dress like the Bedouin during a Mini Baja keep in mind that they know a lot more about desert living than we do.

Shade – One way to avoid over heating is to stay out of the sun – so bring canopies, umbrellas, tents or anything else you can think of to make shade. Shade not only protects you, but will reduce ground reflection and heating. In desert conditions the ground temperature can be significantly higher than the air temperature. Think of a road baking in the summer sun, it's the same situation. Anything exposed will heat up – your car, your tools, yourself – take precautions.

Suggestions

We suggest bringing at least the following

(1) Water in bulk – Get several large insulated water jugs/coolers that can be filled at your motel. Throw in some ice and it should be good for most of the day. Avoid bringing cases of bottled water if at all possible. We want to keep the site clean and leave the environment as we found it so the more bulk water, and the less bottles, we bring the better.

Note: MB100 will be on an isolated course without any water. Plan to bring what you plan to drink.

(2) Sun screen – Buy it in the large containers with pumps.

(3) Shade – Bring canopies, umbrellas or anything else you have that will make shade.

(4) Sunglasses – It's going to be very bright!

Fourteen Educators to be honored with 2005 Ralph R. Teetor Educational Award

This award annually recognizes outstanding engineering educators, offering them an opportunity to become acquainted with the professional activities of the automotive and aerospace industries. The program accomplishes this by underwriting the costs of bringing award recipients to an SAE meeting to participate in hosted industry tours and one-on-one meetings with industry professionals. Established in 1965, this award is funded through a generous contribution by the late Ralph R. Teetor, 1936 SAE President, who believed that engineering educators are the most effective link between engineering students and their future careers.

The awards will be presented during the Honors Convocation on April 12, 2005 at the SAE 2005 World Congress or at the SAE AeroTech Congress & Exhibition on October 5, 2005 as indicated below.

The formal list of recipients can be found online at http://www.sae.org/news/releases/05teetor.htm.

Transponders for the 2005 Mini Bajas

Scoring accuracy is an essential part of Mini Baja. As part of our ongoing efforts to have fast and accurate scoring we are planning to introduce the use of transponders at the 2005 competitions. The National Technical Inspectors are currently running a series of tests on an off-road capable transponder system using a vintage Mini Baja vehicle. The preliminary test results indicated that the system will work under Mini Baja conditions and, absent an unexpected glitch; we will introduce the system at this year's competitions.

Starting with Mini Baja East 2005 in May the use of transponders will be required. For this season the transponders will be rented from the system supplier, AMB, on-site at each competition. The rental price will be about $30.00 per unit per competition. We realize that this is an additional cost however; we believe it is more than off set by quicker and more accurate results.

We will run two independent transponder receiving units at the competitions. Since this system is new to Mini Baja, and there is always a chance that something unexpected will happen, we will continue to do manual lap counting during the 2005 season. If the results from the transponder systems disagree, or are otherwise unreliable, then and only then will the manual lap counts be referenced.

If this timing and scoring system is successful in 2005 as we anticipate, then we plan to require teams to add a specified transponder to their cars in 2006 and beyond. Teams will be responsible for purchasing their own transponder which is currently estimated to cost $200.00 - $250.00.

Based on the initial tests we anticipate mounting the transponders on the upper horizontal segment of the rear roll hoop (RRH) between points BR and BL with zip ties and picking up the signal with an overhead wire.

Insuring an adequate transponder signal requires a maximum antenna to unit separation of about 2 feet. To achieve that distance we have decided to suspend rule 24.6 "Vehicle Flag" for the North American competitions only. Please note that the flag rule still applies to Mini Baja Brazil, Mini Baja Korea and Mini Baja South Africa.

2005 Aero Design East Update

The 2005 Aero Design East competition is less than 60 days away. Nearly 30 teams have registered...deadline for registering is March 3rd. T**he organizers would like to keep you updated as to the latest information so be sure to check the website at http://www.aeroeast.cecs.usf.edu often for updates and changes.**

A couple of items worth noting here:

Lockheed Martin will be sponsoring the Awards banquet. They will also have engineers on-site (as will other companies) so be sure to bring some resumes! Also be prepared for onsite interviews!

Every team will need to bring their own laptops for the oral presentations...this is a must! However, it is also recommended that if you have an LCD projector to bring it as well to the competition.

This event is shaping up to be a great one, good luck to all the teams!

If you have any questions please email eds3236@aol.com.

SAE Supermileage 2005

2005 will be the 26th year for SAE Supermileage at the Eaton Corporation Proving Grounds in Marshall, MI. The two-day competition will be held on Thursday and Friday, June 9-10. The facility is a non-smoking and no drinking-alcohol environment.

The main activities for Thursday will be registration, technical inspection, practice laps, and a drivers' meeting. The drivers' meeting will review safety and operating procedures for the fuel economy trials on Friday. The introduction of timing transponders in 2004 allowed a dozen vehicles to run concurrently, and the need for safe operation is essential to a good event. In the 2004 competition, teams with dependable vehicles were able to complete more than six successful fuel economy trials. Trials are held as long as safe weather conditions are present.

Eaton Corporation will once again provide an on-site awards banquet Friday evening. The traditional meal of pizza and soda pop will now also include hot submarine sandwiches. Awards will be given for both the collegiate division and the high school division for best design proposal and overall vehicle performance. New in 2005 will be award plaques for team attitude, vehicle visual appeal, and closest prediction to best actual fuel economy.

Registered teams will receive information packets in early April with more specific event details.

About the Career Center

The SAE Career Center is an interactive online resource specifically designed to meet the needs of SAE member engineers and professionals as well as employers and recruiters in the automotive, aerospace, and heavy duty industries by bringing them together in one location. http://www.saecareercenter.org/

You must be a paid SAE member or student member to use the member features of the Career Center.

SAE Members: Take advantage of the many services to help you find a job and advance your career:

- View and apply for job openings
- Receive email notification of new job postings in your field
- Post your resume online and let employers come to you (confidential postings available)
- Store cover letters online
- Access Career Resources
- Search the Employer Directory to target your job search

If you have comments or questions about the Career Center, please email us at careerresources@sae.org or call Customer Service at 1-877-606-7323.

Not an SAE member? Join now and enjoy access to Career Center services and many other benefits.

Employers and Recruiters: Post jobs instantly, find the perfect candidate through resume search, access other recruitment advertising and promotional opportunities and more!

Register today to enjoy access to Career Center services.

If you are an employer or recruiter and have questions about the SAE Career Center, please email advertising@sae.org or call us at 724-772-7114.

Apply Now for SAE Scholarships & Loans

SAE is accepting applications for the scholarships listed below. These scholarships are geared toward college juniors who will be entering their senior year of undergraduate studies in the fall of 2004. Details and applications are available on the SAE Web site at www.sae.org/students/scholarships.

Yanmar/SAE Scholarship - This scholarship was established by the Yanmar Diesel America Corporation and awards a $2,000 scholarship to a recipient who is pursuing a course of study or research related to the conservation of energy in transportation, agriculture and construction, and power generation, with emphasis placed on research or study related to the internal combustion engine. Application deadline: April 1, 2005

SAE Long Term Member Sponsored Scholarship - The scholarship continues to be supported through generous contributions from long-time members of SAE. Several $1,000 nonrenewable scholarships are awarded annually to SAE student members who actively support SAE, the collegiate chapter or the local SAE Section and its programs. Student grade point average is not a determining factor within the scope of this scholarship. Application deadline: April 1, 2005

William G. Belfry SAE Memorial Grant - Two $1,000 grants sponsored by the SAE Foundation Canada and the SAE Central Ontario Section are awarded annually. Eligible applicants will be citizens of Canada and will be juniors entering their senior year of full-time undergraduate engineering studies at a Canadian university. Application deadline: April 1, 2005

Doctoral Scholars Forgivable Loan – A number of $5,000/year forgivable loans are available for PhD students in North America who plan to teach engineering at the university level upon graduation. For each year of eligible teaching, one year's loan is forgiven. Apply at http://students.sae.org/awdscholar/loans/ by April 1, 2005.

2005 Collegiate Competitions Sponsors

Interested in being a sponsor? Email Doug Shymoniak at **Shymoniak@sae.org** for sponsorship opportunities.

Corporate Sponsors

FSAE Consortium Member Companies

DaimlerChrysler Corporation
Ford Motor Company
General Motors Corporation

Platinum Sponsors

Briggs & Stratton Corporation - Mini Baja and Supermileage

Gold Sponsors

ArvinMeritor, Inc. - FSAE
Bruel & Kjaer - FSAE
Gage Products - Clean Snowmobile Challenge
Goodyear Tire & Rubber Co. - FSAE
Henkel Corporation - FSAE
Honda R&D Americas, Inc. - Mini Baja
Hoosier Racing Tire - FSAE
International Snowmobile Manufacturers Association (ISMA) - Clean Snowmobile Challenge
Land & Sea, Inc. - FSAE
Lincoln Electric Co. - FSAE
Lotus - Clean Snowmobile Challenge
Michigan Snowmobile Association (MSA) - Clean Snowmobile Challenge
Robert Bosch Corporation - FSAE
Solidworks Corporation - FSAE
Visteon Climate Control - FSAE

Silver Sponsors

DENSO - Clean Snowmobile Challenge
Emitec - Clean Snowmobile Challenge
Polaris Industries, Inc. - FSAE and Mini Baja
Yazaki North America, Inc. - FSAE

Bronze Sponsors

American Council of Snowmobile Associations (ACSA) - Clean Snowmobile Challenge
Blue Ribbon Coalition (BRC)..... - Clean Snowmobile Challenge
CPC Colder Products - Clean Snowmobile Challenge
PCB Piezotronics - Clean Snowmobile Challenge
Portage Health System - Clean Snowmobile Challenge
Risse Racing Technology - FSAE
ThermoAnayltics, Inc. - Clean Snowmobile Challenge
Woody's - Clean Snowmobile Challenge

Supplier Sponsors

Corsa Instruments, Inc. - FSAE
Goodyear Tire & Rubber Co. - FSAE
Honeywell Turbocharging Systems - FSAE
Hoosier Racing Tire - FSAE
igus, Inc. - FSAE, Aero Design, Mini Baja
Imagine Software, Inc. - FSAE
Mechanical Simulation Corporation - FSAE and Mini Baja
Performance Electronics, Ltd. - FSAE
Risse Racing Technology - FSAE
Superior Engine Technology - FSAE
Visteon Climate Control – FSAE

Award Descriptions

Briggs & Stratton Overall Performance Award - Mini Baja
Bruel and Kjaer Quiet Car Cup - FSAE
Goodyear Best Performance Award - FSAE
Honda R&D Americas Endurance Award - Mini Baja
Honda R&D Americas Engineering Design Award - Mini Baja
Hoosier Tire Autocross Award - FSAE
Lincoln Electric Welding Award - FSAE
Polaris Innovative Suspension Award - Mini Baja
Polaris Intake Systems Design Award - FSAE
Robert Bosch Corporation Engine Management System Award - FSAE
Society of Plastics Engineers' Composites Division Award - FSAE
Solidworks Fastest Time to Market Skid Pad Award - FSAE
Yazaki North America Cost Award - FSAE
Yazaki North America Presentation Award – FSAE

Organizing Sponsors

Ecole de Technologie Superieure
Caterpillar Corporation
Lockheed Martin
Rochester Institute Technology
SAE Arizona Section
SAE Dayton Section