IN THIS ISSUE:

Summer break was much needed and allowed the team to rethink some of our design issues and tackle them one at a time. Since class has started again, we have all been extremely busy with the team. The vehicle is running! We’ve fixed our rear suspension issue that kept us from competition last year, the jackshaft and sprocket-rotor hubs are complete and the CVT is on. We’re announcing our first ever Sponsorship Appreciation Day, as well as the addition of some new sponsors for this year. UB Motorsports was noted in an international publication for our innovative design, and the new UBMS website is up. Project updates and more... read on!

SPONSORSHIP APPRECIATION DAY
OCTOBER 20TH, 2007

As a gesture of our teams sincere appreciation and gratitude for all the help our sponsors have given us over the years, we’re holding our first ever sponsorship day! This will be a way for you to come see our shop, vehicle, and what your help has done for the team. Lunch will be provided and there will be a chance to drive one of the Baja vehicles and maybe the formula vehicle. See the Itinerary below.

Saturday, Oct. 20th, 2007

12:30 PM  Arrive at shop
Shop tours
1:00  Lunch provide by team
Meet the members
2:00  Vehicle Presentations:
   - Formula, Baja, Snowmobile
   Vehicle Demonstrations
   Sponsors drive vehicles!
3:30 – 4:00  Wrap up

Please feel free to bring as many guests as you’d like. RSVP is requested. E-mail: ub-saeracing@buffalo.edu or call: Ben Leitsch (sponsorship coordinator) for more info, directions or RSVP. Cell: 518-578-0508

104 Jarvis Hall, Buffalo, NY 14261

Hope to see you all there!

UB Motorsports was recently recognized by Racecar Engineering magazine!

In their September 2007 issue, in an article on the Formula SAE competitions in Detroit, MI, Fontana, CA, and Silverstone, UK; our team was mentioned and praised for our unique and innovative design. Here is an excerpt from that article:

“... State University of New York – Buffalo had one of the most innovative designs in the field. The entry uses a two cylinder, air-cooled Briggs and Stratton V-twin along with a solid rear axle with pull rods and bell cranks. The rear axle and double A-arm front suspension have interchangeable parts (and the left and right front A-arms are also interchangeable), while the lightweight nature of the A-arms is offset by the mass required in the frame to support lateral loads. It also had a Satchell Link system tied into the roll hoop.”

High honors being mentioned with some of the most successful and prestigious teams in the competition.
**NEW SPONSORS ADDED!**

Gamma Technologies Inc. (GTI) develops and commercially licenses a suite of CAE (Computer-Aided Engineering) engine simulations, under the name of GT-SUITE. These tools are specifically designed for applications in the engine, powertrain and vehicle industries. In addition to supplying software products, GTI provides user support and training and carries out general consulting projects using its proprietary CAE tools.

GTI has graciously donated us a full license of their GT – SUITE software so that we can carry out a thorough and in depth modeling of our intake, engine and exhaust systems in order to optimize the design flow characteristics and boost engine efficiency and power.

Since 1954, Bell has been committed to providing customers with the same performance proven features and tailor-made fit incorporated in helmets designed for the world’s best drivers. Bell helmets have been worn and trusted by more champions, in all forms of auto racing, than any other helmet. The Bell name has always been synonymous with safety, technology, engineering excellence and legendary names like Andretti, Castroneves, Elliot, Fittipaldi, Foyt, Kinser, Labonte, Petty, Rahal, Schumacher, Senna, Unser, Villeneuve, and Waltrip to name a few.

Classic Tube proudly manufactures Pre-bent Tubing products for automotive and industrial applications. Brake, Fuel, Transmission and Vacuum Lines manufactured in O.E. steel, stainless steel and aluminum tubing from 1/8" to 1" diameter, to O.E.M. specifications or custom for cars, trucks, and street rods. Complete with fittings. Get an exact match for your vehicle.

Stainless Steel Exhaust Tubing and Aluminum Intake/Cooling System Tubing, straights from 3/4" to 5" diameter. Also Mandrel bent U-bends, J-bends*, 90°, 45°, 15°*.
CURRENT ENGINEERING PROJECTS

ENGINE TEAM:
This year, the engine team will have a large emphasis on analysis and physical testing. While employing the use of the Helmholtz Resonance Theory and Impedance Transfer Model, we are looking to explore more in depth ways of analyzing and tuning our engine. Modeling our Briggs V-Twin engine in GT-Power, our CAE software, has been our primary goal.

Having a virtual engine model is beneficial because it is necessary in validating our dynamometer results as well as being an important tool in the design of our intake and exhaust systems. In parallel with our modeling, will be a large amount of physical testing and validation. This may include construction of different configurations of intake and exhaust systems to maximize volumetric efficiency and engine power.

DRIVETRAIN:
For our car to be effective, tuning the CVT as accurately as possible is critical. To accomplish this task, our team is working to create a maximum tractive effort curve. The goal is for our whole rpm range to coincide with the maximum BHP of the engine.

Also work is being done to “tune” the rear axle of the vehicle. From using tire data from TIRF and Calspan, we will be able to estimate the cornering loads of the vehicle and from there find a proper amount of twist to tune into the axle. The redesign of the axle and torsion tube will be done with the primary goal of reducing the un-sprung weight of the vehicle by using design optimization with FEA and composite construction.

FRAME AND BODY:
Currently we are modeling the chassis and suspension in ANSYS to calculate the combined torsional stiffness of the two. After the model is completed, we will physically test the car on a chassis rig we are now designing. Testing it on the chassis rig will verify our FEA model. Once completed, we can begin to work on designing the new chassis to optimize the overall stiffness and weight.

IN THE NEXT ISSUE:
- Project Updates
- Design Review
- New Team Photo with Bell Apparel
- Tuning and Testing Results

Once again, we thank you all for your generous support. We hope that you may find the time to make it to our sponsorship appreciation day and check out the vehicle and team in person. The new website is up, check it out for any updates and some current pictures of the vehicle:

www.eng.buffalo.edu/sae

Thanks again!

Benjamin J. Leitsch
UBMS Team Co-Captain
Sponsorship and Marketing Coordinator
Cell: 518-578-0508 E-mail: bleitsch@buffalo.edu
SPECIAL THANKS TO ALL OUR SPONSORS!

Liston Mfg.  |  Murphy & Nolan, Inc  |  Spectrum 5  |  Stoffel Polygon
Indy Motorsports  |  BC Mfg.  |  Croisdale Metal Fabrication Inc.
Alcore Inc  |  APcams  |  Seal and Design  |  Clarkcraft  |  Tom O’Reilly
Dave Brown  |  Joe Griffiths  |  Engineering Machine Shop  |  Lee McElhinney
Mike Forbes  |  Don Strong  |  John Kopacz

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