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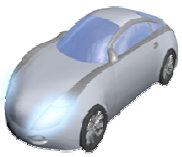
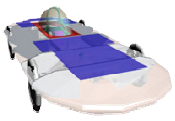


LAAE



LOS ALTOS ACADEMY OF ENGINEERING
Los Altos Academy of Engineering

BUILDING A CLEANER, MORE FUEL EFFICIENT TOMMOROW

focus

Toyota Donates Scion xB

By: Brian Yang

Toyota Motor Corporation made Los Altos Academy of Engineering (LAAE)'s dream of competing in the DARPA Urban Challenge a reality. LAAE had been contacting several different corporations for a Scion xB donation for over a year. Six months ago, LAAE found a solid contact and has been in constant communication with Scion representative Steve Hatanaka. Finally, after months of persistent phone calls and e-mails, Toyota Motor Corporation agreed to sponsor LAAE with a $16,000 Scion xB for the DARPA Urban Challenge. With the help of Mike Acuna, also a Scion representative, the Scion xB was delivered to LAAE on January 15, 2008.

DARPA, The Defense Advanced Research Projects Agency, is the central development organization for the Department of Defense. The DARPA Urban Challenge is an annual autonomous vehicle competition where the car actually drives itself. The objective of this past year's competition was for an autonomous vehicle to safely execute missions in a complex urban environment with moving traffic.

The Los Altos Academy of Engineering has been building a test platform of the autonomous vehicle, using the dimensions of Scion xB in hopes of competing in this event. Toyota Scion's generous donation has allowed LAAE to take the next step in accomplishing this feat. LAAE hopes to be in the competition as one of the few high school teams to participate.

Now that LAAE has the Scion xB car for *Project Zeus*, the team has some work to do before it will be able to contend. Students will have to design new actuators for the car and be able to control the acceleration and braking, which is scheduled to be completed by June. Changing the gear to fit the car may be another modification that has to be made. Once these tasks have been finished, sensors must be mounted onto the car and then an intense stage of programming will begin.

On Thursday, January 24, newspaper reporters, HLPUSD Board Members, La Puente Valley ROP members, and Scion's Product Communications Administrator, Allison Takahashi, came down to LAAE to see the program and the Scion xB. Students talked about LAAE and what it represents and had visitors leaving very impressed. LAAE has a way to go before actually participating in the DARPA Urban Challenge. However, Toyota Motor Corporation's car donation is a major stepping stone in the journey of achieving one of the most prestigious challenges this program has ever taken on.

LAAE Team Leaders stand proudly beside the Scion xB Left to Right: Andy Chen, Ted Wang, Abraham Lin, Philip Ybarra, Chris Valencia, Alex Najarro, Jeff Ong, Amy Yu and Lydia Wei

JPOI Contest Conquests

By: Angela Chen

On November 30, the Japanese American Optimist International Club hosted their annual essay competition. Students from the Los Altos Academy of Engineering were introduced to this competition by alumnus Nikki Kodama, active member in the Japanese American Optimist International Club. The students were given notice of the competition in early October via e-mail. The public relations team immediately sought out three willing students for the competition and found them in Sabrina Liu (design team leader), Marina Macias (composites) and Angela Chen (public relations). The three contestants were then given the rules and requirements of the essay contest. This year's essay topic is only five words, "Today's Choices Shape My Future."

Like any other competition, there are rules that must be followed. The general rules tell the contestants that there are three levels of competition: club, district, and international, with club being the lowest. The contestants are to enter the competition through a local Optimist Club and compose an original essay that can be duplicated or published without payment to the author. Furthermore, the contestants must be under the age of nineteen as of the 2007-2008 school year, can only compete in one contest per year, and cannot be a returning winner of an Optimist Essay contest. In addition to these general rules, there are specific rules that describe the format of the essay, the judging process, and the awards at every level of competition.

Since the topic is only five words long, the students were allowed to interpret it in any way they wished. Not knowing how to approach the topic, both Sabrina and Angela found the topic to be extremely challenging. However, Marina found it fairly easy. "The topic was not hard. It came into my head, and the ideas just popped," recalls Marina. When asked what they wrote about, the students had varied replies, each unique, reflecting each person's personality. "I wrote about our engineering program and how it will help improve my future," stated Sabrina.

On Monday, January 7, the results of the competition were finally announced by Nikki Kodama via e-mail. Angela Chen (Los Altos Academy of Engineering) came in first place with Salvador Pacach (Belmont High School) coming in second and Jose E. Lopez (Belmont High School) in third. All the contestants were invited to the Japanese American Optimist International Club on Wednesday, January 23, at 7 PM at the Taix French Restaurant near Echo Park. On January 23, Angela set out for the award dinner at 5:00 PM. The other two winners were not present due to their school system.

On March 5, the Optimist International Club will be hosting their annual Oratorical Contest for students under the age of sixteen at the Taix French Restaurant at 7 PM. These students will be responding to the prompt: "Why me, Why not?" John Weng and Liza Magat from the Los Altos Academy of Engineering will be participating, and their speeches are looking good. Hopefully, their performance will reflect LAAE as well as Angela did.

Angela posed with important people at the awards dinner. From left to right: Nikki Kodama, Edward Richter, Sue Shen, Angela Chen

Updates

By: Edward Lu

DESIGN
- Bridge Building Contest (2/27)
- High Voltage suspension
- New Botball & MSR t-shirts designs
- All solar boat drawings finished
- Update old software

IT
- Working on new website banner
- Working on DAPRA project
- Networking

MECHANICAL
- Complete mechanical parts for Infusion II
- Complete mechanical parts for HICE
- Fix up the xB for the competition

COMPOSITES
- Complete Infusion II and HICE chassis
- Get Infusion I finished
- Video of infusion

ELECTRICAL
- Complete the wiring systems for Infusion II
- Complete the hydrogen tubing for refueling and consumption for Infusion II
- Complete the starter motor circuitry for HICE
- Electrical system repairs on Infusion I
- Work with IT on the Autonomous Vehicle.

PUBLIC RELATIONS
- Grants
- Have a rollout before the Shell Eco-Marathon competition
- Revive BYDV through any car company
-Create a video on water conservation for the Metropolitan Water District

Sunny Improvement

By: Amy Yu

Solar Boat has officially kicked off its fifth year. The team attended the hull building workshop in December and left the water district with a brand new boat and high hopes. New designs, new ideas, and new members gave the team a new sense of motivation to make this year's boat the best the academy has ever built.

Mechanically, the boat will mostly stay the same. The drive system from last year performed very efficiently, and the team will be continuing with the same design. However, team leader Raymond Raya has decided to improve the transmission by making it lighter. By doing so, the rear end of the boat will contain less weight, thus making the boat more balanced. This design will be helpful in the sprint portion of the competition. The boat will also be the same as last year's in terms of wiring, with a few minor exceptions here and there.

The major change in the 2008 model compared to past boats will be in the solar panels. In previous years, the team has talked about making their own solar panels, but due to time constraints and other complications, LAAE has never been able to race with solar panels built by students. However, this year, students have made contact with a Sunpower solar cell distributor and has managed to obtain the cells needed to make the project happen. Currently, students are designing the most efficient panels possible in terms of size and the number of cells used. Moreover, Mr. Jason Brown has volunteered to help the team understand how to make solar panels, from wiring the pieces together to coating the finished product with silicon.

As a whole, the boat is scheduled to be finished by late March. By finishing more than a month in advance of the race, the extra time can be used to test the boat in the water along with making more improvements and alterations. This group of dedicated students have put much effort and thought into the boat, and hopefully it will all pay off in May.

Present Solar Boat sanded and varnished. It is yet to be completed with steering, drive train, wiring and mechanical components before it is fully complete.

Important Upcoming Dates for Solar Boat

March

March 1– Test old solar boat

March 12– Visual display script due

March 27– Drive Train/ Steering Repair

April

April1-30– School Visits

April 17—Visual Display due

May

May 3— Technical Inspection

May 16—Solar Cup: Qualifying

May 17—Solar Cup: Endurance

May 18— Sprint Race and Awards Ceremony

Unique in Presentation

By: Crystal Lopez

On January 16th, public relations and information technology team members from the Los Altos Academy of Engineering gave a presentation to the Los Angeles County Association of Superintendents and Principals about LAAE history, as well as its progress and plans.

Mr. William Roberts, Los Altos High School principal, approached one of the LAAE advisors, Mr. Robert Franz, told him about the conference and asked if he wanted some students to give a presentation to the Los Angeles County Association of Superintendents and Principals (LACASP). Franz was excited to see a small group of his students give the presentation about the program to such an important group of people. The students included public relations team Leader, Lydia Wei, information technology team leader Chris Valencia, and PR team member Crystal Lopez.

The presentations given were required to be fifty minutes long and expected to be impressive. The team had no trouble in meeting this time requirement. In fact, the students actually found trouble in keeping their presentations under the fifty minute limit. Not only did the students have to worry about the time limit, but they had to give the presentation two times back-to-back.

Overall, the presentation went very well, leaving many principals and superintendents very impressed. We know that another presentation experience such as this one may come again . With a lot of hard work, preparation and time, the next presentation any students will have to give will be a success like the one given to the L.A. County Association of Superintendents and Principals.

A scrapbook beginning to the well-prepared presentation.

A New Year, A New Asset

By: Vincent Tieu

Recently, the Los Altos Academy of Engineering received its highly anticipated computerized numerical control mill. When governor Swarchezneger was elected governor, he wanted to earmark schools that provided hands-on activities and provide funds for these schools. Marie Tyra, a former employee for Career Technology Education, was the person responsible for dealing with all the paperwork and politicians. She was able to make the purchase possible for LAAE with her persistence and determination. The members of Los Altos Academy of Engineering would like to recognize and cordially thank Ms. Tyra for all her effort and assistance.

In the industry, machinists use the cnc mill due to its precision, flexibility, and production speed. The cnc mill will face off and cut the surfaces of the materials. In a broad sense, the mill makes the program more effective. However, in order to run the mill, the members of Los Altos Academy of Engineering will need a lot of training. It includes a carousel containing tools that can be programmed to cut materials such as metal and wood. However, unlike computers, the errors created on the cnc mill cannot easily be fixed. In fact, errors on this machine could be hazardous to both the machine and the operator. Nevertheless, the new cnc mill allows LAAE to be able to accomplish several tasks with more efficiency and ease.

New CNC Mill proudly sits upstairs, shiny and waiting to be used.

Show and Shell

By: Lydia Wei

The Los Altos Academy of Engineering is well on its way to the Shell Eco-Marathon! This year, the Shell Eco -Marathon will be hosted on April 10 - 13 at the California Speedway. It is a competition in which vehicles try to go the farthest distance on the least amount of fuel. All registrations were completed and submitted on February 1. LAAE is entering three different vehicles and taking 24 students to the competition. From now until April 10, LAAE will be working very hard building the three vehicles: Infusion I, Infusion II, and HICE.

LAAE has recently finished repairing Infusion I and successfully ran the vehicle on February 9. The composites team has worked more than three months repairing both the show and the race body. With the new modifications and newly improved bodies, Infusion I is ready to be painted. Several of the students have been talking with LAAE's long term supporter, Haddick's Auto & Body, about the paint job. Hopefully, Infusion I's race and show body will be painted as soon as possible, so LAAE can be one step closer to competing in the Shell Eco-Marathon.

LAAE's second vehicle is Infusion II. When the Infusion I project started over five years ago, its original intention was not to be the most fuel inefficient race vehicle. However, now that LAAE has more experience and knowledge about hydrogen fuel cell, it is ready to build a new, improved, lighter, and more fuel efficient hydrogen fuel cell vehicle. It is a new vehicle that is designed specifically for the Shell Eco-Marathon. All the parts and functions are built to make Infusion run the farthest with the least amount of fuel. LAAE is hoping to use Infusion II to win the Shell Eco-Marathon. As of now, Infusion II is still a work in progress.

In addition to Infusion I and Infusion II, LAAE is also entering a new vehicle, HICE (Hydrogen Internal Combustion Engine. It is a completely new project for LAAE. The vehicle is mostly in the research and planning stage because it is the first time that the students and advisors have ever tried to build a hydrogen internal combustion vehicle. LAAE plans to build a full composite chassis connected to the body.

LAAE has high hopes as they enter the second year of Shell Eco-Marathon. Finishing all three vehicles will be a huge feat, but the students of LAAE have been spending additional time after school and on Saturdays. With all the dedication and hardworking students, LAAE is expecting great success in the 2008 Shell Eco-Marathon.

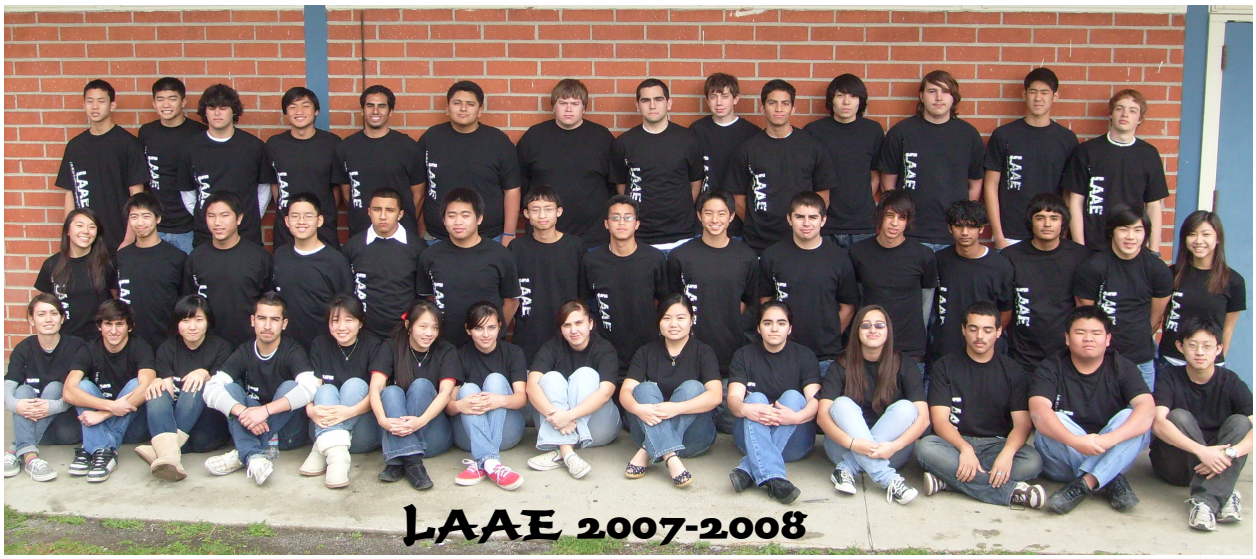
Like a phoenix, the old High Voltage rises from the ashes and becomes HICE [Hydrogen Internal Combustion Engine].

Website of the Month

By: Brian Yang

The Los Altos Academy of Engineering's website, www.LASV.org, was recently named the "Website of the Month" for December by Tech Directions Magazine. The information technology team submitted the website to Tech Directions for review, and out of all the websites Tech Directions received, www.LASV.org was the one site chosen for the title. The link of the LAAE website was posted by Tech Directions on their website for all of December. The honor brought several new visitors to the site and allowed many new people to be informed about our program.

December's School Web Site of the Month is www.lasv.org, sent in by Shaymus DiGantomasso, IT team member, Los Altos Academy of Engineering. The students in the IT team work on the website.



Top row: Edward Lu, Stephen Tan, Steven Rodriguez, Sungyop Whang, Philip Ybarra, Chris Valencia, Dustin O'Neill, Osvaldo Gutierrez, Mark Norris, Raymond Raya, Jeffery Ong, Shaymus DiGiantomasso, Elliot Jung, Alex Venturoso

Middle Row: Amy Yu, Joseph Lin, Vincent Tieu, John Weng, Andrew Hlavaj, Ryan Tsao, Jerry Ho, Abraham Lin, Brian Yang, Ernie Ortega, Michael Saldivar, Dipak Prasad, Mark Aguilar, Calvin Lee, Lydia Wei

Bottom Row: Stephanie Heredia, Eric Romero, Sharon Shim, Eric Munoz, Anne Shin, Angela Chen, Paola Gonzalez, Crystal Lopez, Sabrina Liu, Marina Macias, Arielle Barnes, Alex Najarro, Andy Chen, Ted Wang

Thank You Toyota!

And a special thank you to all our sponsors who continue to support us.

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