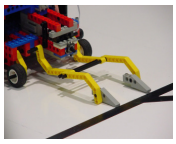

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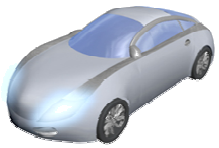

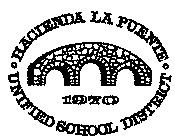

LAAE

LOS ALTOS ACADEMY OF ENGINEERING

Los Altos Academy of Engineering

BUILDING A CLEANER, MORE FUEL EFFICIENT TOMMOROW

focus

New Plans for Infusion

by Crystal Lopez

April 2007 was a big month for our engineering program. It was the month of the Shell Eco Marathon, when our fuel cell team raced Infusion. Infusion is a hydrogen fuel cell car that LAAE built with pride and hard work. However their hard work, pride, and invested time, was quickly demolished when they heard the news that their precious car was partially damaged while being shipped back to Los Altos from Texas.

How did Infusion get from Ontario to Houston? The Shell Group was very impressed with Infusion and asked the team if they could take it with them for a few weeks and show it off at their annual meeting. Shell had a special container constructed for the vehicle. When the car was being readied for the shipment back, it was accidentally put in the container backwards and was tied incorrectly. The whole trip back Infusion was crashing against the sides of the container. When students unpacked the container, they were devastated to see pieces of the car that took almost five years to build. LAAE was given $11,000 dollars from the shipping company for repairs. Philip Ybarra, mechanical team leader, said, “We think it will be enough money, but still, not many of us know the extent of the damages.

With the money given, the mechanical team is planning on fixing Infusion to accomplish its original goal of traveling forty miles per hour for one hour on an oval track. However, we do have hopes of building a new car. The idea of building a new car is starting a small competition among the students. While our advisor, Mr. Robert Franz, wants to make a new body just like the one the Infusion had, Mr. Mike Keirns, wants to bring back High Voltage, a vehicle built awhile back that ran solely on battery power. Keirns wants to change the battery pack in the back of the car into a small internal combustion engine that could run on either hydrogen or compressed natural gas (CNG). What will also make this concept quicker than Franz’s is that the body and mold of the car are already made while the students will have to start from scratch trying to build Infusion over again. With Keirns’ idea, the students might finish in time to race next year in April, while building another Infusion would take more than the allotted time.

Infusion makes its way along the track of California Speedway.

Whatever strategy the students choose, it is certain that they will invest their time and hard work in fixing the Infusion as well as building a car to race in the future. With high hopes, the students plan to finish the car in time to race again.

Solar Boat

by Brian Yang

After having placed an overall seventh in the 2007 Solar Cup, the Los Altos Academy of Engineering's solar boat team has high hopes going into the 2008 race. The plan for this year will be slightly different from last year's. While the team plans on using the same boat design and structure, it will be making its own solar panels, in hopes of reducing the overall weight of the boat by about forty pounds. The propeller of the boat will also be changed to make it more efficient.

The Solar Cup will be held at Lake Skinner in Temecula in May of 2008, and the solar boat team has no time to lose. Last year's disorganization and poor time management led to a mishap during the sprint qualifying event, as the boat failed to run because of an unconnected wire. To avoid its previous mistake, the team plans to manage its time and be more prepared going into the impending competition. About a month before the actual event, members will test the boat at least twice. With more dedication, more preparation, and a valuable learning experience from last year's competition, the Los Altos Academy of Engineering solar boat team will definitely be looking to make some noise come May of next year.

Skipper, Amy Yu , waves hi to the camera as she gets ready to start the race.

Build Your Dream Vehicle

by Angela Chen

Early last year, students were excited as they began to blueprint their cars for the Build Your Dream Vehicle Competition, hoping that their cars would be success stories like the ones displayed around them. Students were creating cars that would be very efficient and futuristic. The plans varied, but all were creative and very well planned, although some of the students had no prior knowledge of cars before joining the club. It took a few weeks for the students to come up with plans for what their cars would feature: cup holders that heated or cooled beverages, a built-in computer, and even keys that only worked when used with a fingerprinting device. Some students even began to draw plans for the exterior and interior of their car when the news hit them like a rocket.

Daimler Chrysler was no longer interested in investing their resources in a program that they had been running for years. They thought that it had spent an excessive amount of money on a program that it did not completely benefit from, although it did give the company ideas for future vehicles.

Los Altos High has been competing in the Build Your Dream Vehicle program since 1996, winning back-to-back championships in 2005 and 2006, a feat that had never been accomplished. Students benefited greatly from this program because it taught them skills including public speaking and marketing. These skills are important in the business world, and many of the alumni of this program have done extraordinarily well in college after leaving Los Altos High.

Despite the loss of the Build Your Dream Vehicle program, Los Altos Academy of Engineering is still doing well, but would like very much to gain such a valuable program back. The public relations branch of Los Altos Academy of Engineering is in the process of appealing to Daimler Chrysler to recreate the program because of the number of students it has benefited. Public relations is hoping that this program will be revived sometime this year, so be ready to see Build Your Dream Vehicle again.

Kari perfects her model for the BYDV competition.

Top Row: Raymond Raya, Philip Ybarra, Jeffery Ong, Christopher Valencia, Dustin O'Neill
Bottom Row: Lydia Wei, Sabrina Liu, Amy Yu, Andy Chen, Alex Najarro, Ted Wang, Christopher Wong

LAAE Autonomous Vehicle *by Edward Lu*

This past summer, the LAAE autonomous vehicle project received a $10,000 grant from Edison. This was a major donation and is very important in the progress of our vehicle. With the additional $10,000, the autonomous vehicle team hopes to finish the autonomous vehicle this year. The team is currently running the project on a mule. LAAE is trying to get the mule to run on remote control, and are working our way to full automation. Hopefully, they can get the mule to run on GPS coordinates in the next few months. The LAAE autonomous vehicle project is still moving forward. Last year, we were unable to obtain a Scion xB; therefore, we had to send in a video of our mule to the qualifying event. Although we were rapidly improving our vehicle, the DARPA competition required entrants to use a production vehicle and not just a mule. Because of this, we did not make the final cut of the DARPA competition. However, we will be going to the competition this year to watch the race. The competition will take place in Victorville on November 3rd, 2007. During the race, we will observe other cars for more ideas on how to approach the project. Currently, we are attempting to make the vehicle run primarily on four LIDARs. The LIDARs work like radars do, they map out how far each object is although they only see in one horizontal plane. Then using CMU cams and SONARs, we can better predict when to turn and avoid objects. However this is not as easy as it seems. Ted Wang, the lead programmer for the project, says that, "the hardest part is getting the sensors to communicate effectively with the programs." Even with these obstacles, we should be able to create programs that smoothly run our vehicle.

The design for LAAEs Autonomous Vehicle, which features LIDAR and CMU cameras.

The team wants to acquire a Scion xB so that once they are able to get the mule to run fully automated, they can switch over to the xB. The mule is designed similarly to the xB and mounting the equipment on the xB should not be a problem. Our goal is to finish the project this year.

Updates *By Vincent Tieu*

It's a whole new year for LAAE and we're trying to get everything planned out so that we have a successful and exciting year. Things on our to-do list include:

DESIGN
-Teach everyone the basics like Auto CAD and Photoshop
-New Infusion drawings (chassis)
-New solar boat
-New T-shirt designs

PUBLIC RELATIONS
-Revive BYDV
-Plan Advisory Committee Meeting
-Get everyone familiar with LAAE History

ELECTRICAL
-Run up Solar Shadow II
-Run up solar boat
-Make their own solar panel
-Run fuel cell for Shell Eco Marathon
-Pass on prior knowledge to younger members

INFORMATION TECHNOLOGY
-Improve website so it will run ten times faster
-Add multimedia
-Manage computer network so that it will work smoother
-Help with technology problems for any other team
-Learn more about how to run the network

COMPOSITE
-Accomplish a new composites chassis
-Race the chassis in the Shell Eco Marathon
-Improve High Voltage body

MECHANICAL
-Fix Infusion
-Make two new high-mileage vehicles
-New drive system
-Finish solar boar early
-Repair Solar Shadow II

These are just a few of the things that we plan to do. These and other plans are being made so that once again we will have a successful year.


In order to guarantee a great start to a new year, Solar Boat Co-Captains Amy Yu and Raymond Raya, as well as Club Advisor, Robert Franz give interested members an informative lecture.

LAAE 2007-2008

Top row: Lydia Wei, Mark Aguilar, Philip Ybarra, Alex Venturoso, Chris Valencia, Steven Rodriguez, Edward Lu, Sungyop Whang, Mark Norris, Stephen Tan, Oswaldo Gutierrez, Raymond Raya, Jeffery Ong, Shaymus DiGiantomasso, Elliot Jung
Middle Row: Christopher Wong, Andy Chen, Vincent Tieu, Calvin Lee, Arielle Barnes, John Weng, Ernie Ortega, Jerry Ho, Abraham Lin, Ryan Tsao, Brian Yang, Dustin O'Neill, Andrew Hlavaj, Michael Saldivar, Dipak Prasad
Bottom Row: Amy Yu, Stephanie Heredia, Eric Romero, Sharon Shim, Anne Shin, Angela Chen, Sabrina Liu, Crystal Lopez, Paola Gonzalez, Eric Munoz, Marina Macias, Alex Najarro, Joseph Lin, Ted Wang

THANKS A BUNCH

by: Amy Yu

THE LAAE BOOSTER CLUB HAS ALWAYS BEEN VERY SUPPORTIVE OF THE STUDENTS HERE AT THE ACADEMY. OVER THE SUMMER, BOOSTER CLUB PARENT MR. RUDY YBARRA VOLUNTEERED COUNTLESS HOURS TO HELP RENOVATE OUR SHOP. HE HELPED INSTALL PIPING NECESSARY FOR STUDENTS TO USE COMPRESSED AIR- POWERED TOOLS. NOW THAT YBARRA HAS PUT IN THE PIPING, COMPRESSED AIR CAN BE USED THROUGHOUT THE SHOP. MECHANICAL TEAM MEMBERS, ELECTRICAL TEAM MEMBERS, AND COMPOSITE TEAM MEMBERS NOW HAVE QUICK AND EASY ACCESS TO COMPRESSED AIR. THE STUDENTS ARE VERY GRATEFUL FOR THE PIPING AND HOPE TO PUT IT TO GOOD USE.

NEWSFLASH

Annual Advisory Committee Meeting– Tuesday, November, 13th at 6:00 pm in room A14

Staff Writers:
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Brian Yang
Vincent Tieu
Angela Chen
Crystal Lopez
Edward Lu

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