A rough FSAE Michigan competition for the Clemson Tigers meant the pressure was on for CUFSAE at their first trip to FSAE Lincoln. A hard effort from a small team paid off in Nebraska with the first event win in team history. Read the whole recap from each competition in this issue.

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Clemson FSAE was plagued by mechanical issues from the very beginning of FSAE Michigan. Upon arriving at the track, there were electrical issues connecting the engine to the ECU, resulting on the team working through the night to find a solution. After the car was running properly, the team struggled to pass the final stage of technical inspection; that being the brake test. To pass, the car must get up to speed and then stop within a certain area while locking all four tires as well as keeping the engine running. After finding an improper fitting that had developed a small leak as well as making several suspension setup and brake bias adjustments, the team was finally able to complete the brake test with all four wheels locking.

By the time the brake inspection was finished, the team missed both the skidpad and acceleration events, however the team performed well in the static events. CUFSAE placed 19th in the Cost event, 38th in the Design event, and finished 8th in the Business Presentation, marking the best ever finish for Clemson in that event.

The team passed the technical inspection in time to make it to the autocross event, where driver Kenny Brown was able to complete a lap earning 55th place before a faulty oil regulator caused a drop in oil pressure and resulted in an engine failure for second driver, Grey Roberts. After a furious effort to swap engines on the morning of endurance, driver Amos Hine was only able to complete seven laps before an oil leak developed in the clutch cover, due to the short time that the sealant was given to set in the engine swap. After the multitude of issues, CUFSAE placed 64th overall of 120 registered teams. The team left the event disappointed at the mechanical failures but determined to improve the car for the Lincoln Competition.
FSAE Lincoln 2014 Recap

The crew was much smaller for the Lincoln competition, downsizing from 17 members to 6 team members to make the 2400 mile round trip effort. Despite the small team, the dynamic was seamless and problems were addressed quickly and efficiently to allow the team to complete each event in this competition to earn a 21st place overall finish and a first ever event win in Business Presentation.

The team arrived to a hot Lincoln Airpark with hopes high to correct the wrongs of FSAE Michigan. Things began well as the team passed technical inspection in one try, and proceeded to pass tilt table, sound test, and brake test all in one attempt. Between competitions, the team found that by switching master cylinders between the front and rears, all four calipers successfully engaged and locked each tire. While going through technical inspection, the team competed in the static events where again CUFSAE showed strongly. Clemson finished 32nd in the Design event, 22nd in the Cost event, and placed 1st overall in the Business Presentation. The 1st place finish earned a trophy for the shop and the first event win in the team’s history.

After the static events, the team took to the dynamic events where the car could show it’s true strength. Drivers Andy Brown and Kenny Brown turned in times within four-thousandths of a second of each other to finish 14th in acceleration. Drivers Grey Roberts and Amos Hine each turned quick laps in the skid pad to average out to a 25th place finish and Kenny Brown set a fast time in autocross to earn a 28th place finish. Although the day was encouraging, engine temperatures were high and as a result, the team dropped the oil pan for a routine oil change. Much to their dismay, there were metal shavings likely due to a bearing failure and the engine needed to be replaced before endurance once again. On the morning of endurance, the team took the engine tuned by Scott Braden and Isothermal Community College for its maiden voyage and got the car to the grid with mere minutes to spare. Due to an electrical issue, the fans did not run for the majority of the race which led to further overheating issues, however drivers Grey Roberts and Kenny Brown expertly maneuvered the car to a 20th place finish in the endurance event.

Given the small team and the lingering issues with the car, CUFSAE was proud to head home with a 21st place finish but reluctant to call this a complete year. Although the team did compete in two competitions and bring home its first event victory in school history, they were not satisfied with the issues at hand. Ever ready for the challenge, this summer will be dedicated to ensuring that these simple failures do not happen again and an even greater result will come next year.

Left: Graduating senior, Andy Brown, takes off down the acceleration lap for his 4.325 second run
We often discuss in a larger sense what a sponsor means to our team. As a whole, we owe everything to our sponsors; without you we could not build this car every year and compete at the level at which we do. However, all too often we don’t get a chance to share stories of how individuals are affected by this team and why our sponsors are truly the medium in which our education grows and continues into true professionalism.

This year, we had two veteran members of the team graduate and go on two very different paths. Patrick Clarke graduated after working with the team for three years and spending the previous two as the electrical division leader. Patrick’s time on the formula team and close integration with CU-ICAR as a sponsor compelled him to continue his studies to pursue a graduate degree from CU-ICAR and to maintain contact with the formula team throughout his time there.

As far as myself, I graduated after my third year on the team, spending the previous two as the Treasurer and Business Division Leader. I took my work on the sponsorship side of the team to lead me to law school at the University of North Carolina Chapel Hill, with the end goal of working at a legal firm that represents the interests of NASCAR and other automotive racing bodies within sponsorship negotiations. Even without engineering, Formula SAE has affected my life in such a way that my time here will reflect itself in my career.

Stories like mine and Patrick’s are not the exception within the Formula SAE world. The drive and commitment required to build these cars naturally draws the top tier students to this program, and our sponsors are directly allowing these students to grow. So for helping our team continue to succeed, I must say thank you to our sponsors. But for allowing me to find a unique career path and helping to support the program to which I attribute much of my educational success, I am forever grateful.

Sincerely,

Andy Brown
Clemson University ‘14
The Clemson Formula Team has once again captured the Burris Cup, signifying the best pushbar in the Michigan Competition thanks to the creative brilliance of team member Charlie Morgan. This year’s design was a real hit at the track with both the track workers and the other competing teams. Below you can see pictures of the development and final product that is now known as the Carbon Fiber Corvette.

Left: The free-hand-carved ‘57 ‘Vette body is gel coated and prepped with mold-release as a male mold for the carbon fiber body

Lower Left: The carbon fiber is applied in three layers in a cross pattern for strength and vacuum bagged for an even finish and resin distribution

Below: The finished carbon fiber body, ready for trimming, painting and final installation on the pushbar frame used to push the car.

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