

CRIMSON RACING NEWSLETTER

September 2016

Greetings from Crimson Racing!

With the start of the fall semester comes a new football season, and like our football team, we never stop working here at Crimson Racing. We are excited to announce that many of our designs are finalized! However, that is just the beginning. We are now moving into the manufacturing stage of our season. We are very fortunate this year as many new students are showing a lot of interest in joining our team. This will help us maintain our schedule to have a running car by March. We look forward to a great year.

Chassis

Suspension

The suspension team has completed all designs for the CR 17. We are excited about the reduction in unsprung weight, the majority of which will come from new tires and wheels. We are reducing our wheel size from 13" to 10"; therefore, we are estimating a 30 pound reduction in weight from last year's car. This is a huge step toward our overall weight goal of 450 pounds. The tire reduction estimate does not include weight loss in the uprights, spindles, or brakes which are predicted to result in another 5 to 10 pounds decline. We would also like to thank Bob's Speed Shop for donating some suspension tuning equipment. We have already been able to use it on several drive days and it was a huge help.

Aero

The body design is complete and we have started manufacturing the mold. We are happy to announce that we have acquired a large donation of carbon fiber from some new sponsors, Hexcel and Textreme. These donations will allow us to build a lighter, more professional looking body. We are excited about our new sponsorship and would like to thank them tremendously.

Frame

The frame has been designed and the roll hoops are in house. We would like to thank Brown and Miller for supplying us with the roll hoops from their CNC bender. We are awaiting the arrival of additional frame materials in order to begin fabricating it. Frame fabrication always consumes copious amounts of time; however, we plan to finish and powder coat the frame before we depart for winter break.

Powertrain

Engine

Thus far, most of our time and resources were spent on rebuilding the stock engine that we traditionally use. We have added high compression pistons and have lightened the crank shaft and several gears. We plan to have custom ground cams with even lower opening durations than last year's model.

Dyno

This year we will run our new engine on a water dyno generously provided by the university. This will take a lot of working time, but in the end we will be able to prove that we are getting the most power out of the engine as possible. We look forward to experimenting with and producing stronger power curves compared to last year.

Differential

We have completely redesigned the differential that we have been using for the past five years. With this redesign, we will drop weight and have a more effective limited slip differential in order to put down increased horsepower.

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Electrical

PWM Circuit

This year we plan to use a PWM circuit to run all of the electrical motors on the car, such as the fuel pump, water pump, and cooling fans. The new circuit will reduce the current draw on the battery and allow us to charge the car more efficiently. Before competition last year, we added a second battery for driver change because we discovered during testing that a single battery would not restart the car after half of an endurance run.

Paddle Shifters

We are very excited about implementing a paddle shifting system into our car. Air solenoids are used to activate the shifter and the clutch. The system cuts spark on the upshifts and engages the clutch on downshifts. After preliminary testing of the new system, we believe it will be extremely effective. Shifts are now more consistent and smooth. The driver can even downshift while loaded up in a corner without upsetting the car.

(Right) President Bell sits in the car while chatting with the team about last year's competition.



(Left) Suspension Lead Zach Hagan driving during a suspension tuning day.

Looking Forward

This year should be an exciting one for the Crimson Racing Team. As we start putting the pieces together, we hope you will reach out to us with any comments or questions you have about the car, the team, or the competition in May. We look forward to hearing from you, and as always, thank you for all your support!

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