



# JULY

COMPETITION & COVID-19

NEWSLETTER

7/31/2020

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# COMPETITION REVIEW

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Between the end of the semester and the start of the summer, the team prepared for a virtual competition. In preparation, leads and other dedicated members assembled presentations as if they were participating in the regular competition. To ensure that the team's younger members gain experience participating in competitions, our senior members took on a more advisory role. As a result, most of this year's leads now understand the nuances of arguing the team's design under high scrutiny of the design judges.

New to our design presentation in 2020 is the addition of the data acquisition team and an emphasis on knowledge transfer. The data acquisition team is a dedicated data collecting team that provides our sub-team leads with the support for validating design choices. To complement the increase in information gathered, we created a team wiki to archive information and to improve knowledge transfer to future new members. Having a well-documented set of design processes, manufacturing methods, software guides, and so much more in one place for members to access and indulge is critical for the team to stay successful. When implemented correctly, the wiki can mitigate losses in knowledge transfer, reduce the time needed to lecture new teammates, and extend the knowledge base of senior team members. The combination of a data acquisition team and the team wiki gave judges something to laud and a



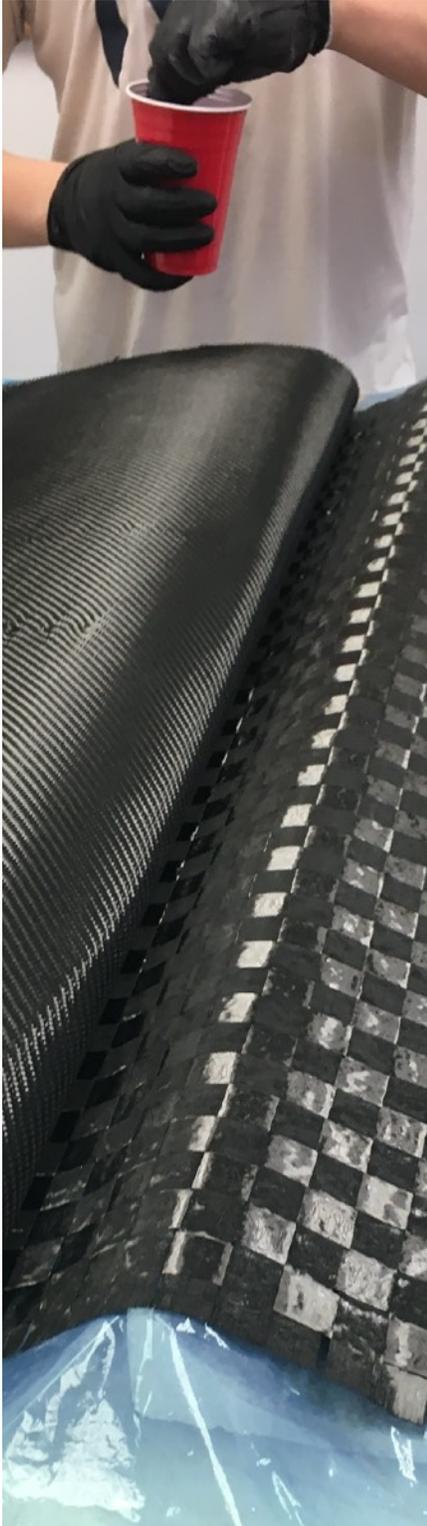
**FSAE ONLINE COMPETITION EVENT BANNER**

fantastic upper hand throughout the design competition.

After our presentations concluded, the judges gave us their closing remarks. The judges told us to reflect on some choices, focus on the new tools, and continue a good lineage of competitive cars. It is made evident every year that judges have our best interest in mind. Although they may have many criticisms and plenty of opinions, it always comes from a place that hopes to see developing engineers learn and succeed. Thank you to our alumni class of 2020 and members that made the virtual competition a success. With a great deal of advice noted for this coming season, we look forward to doing much better in next year's competition.

# SUMMER UPDATE

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**MANUFACTURING AERO**

As the competition season ended, the team elected new leads for the challenges ahead. These new leads are excited to finish the last few weeks of manufacturing and begin a vast regiment of testing and validation for a new race car. The team was able to manufacture most of the car before the school's closing. The progress allows us a relaxed schedule to produce the aero package, resolve minor issues, and pursue a definitive schedule for testing and validation.

Every sub-team is still working throughout the summer to ensure the car can endure an arduous testing season. Controls looks to make sure that shifting is operational and dependable while electronics continue to fit sensors and work with other sub-teams to prepare the car for testing. Data acquisition maintains healthy oversight with continuing data collection and archiving. Aerodynamic and composites team members rush to finish an effective aero package with new materials and reliable manufacturing.

With the help of every member, a comprehensive drive day materialized. Reliable engine starts and healthy performance gave a great deal of hope but were followed with some failures of mountings and seals. Although not as successful as the team wished, the drive day developed an understanding of what needs to be done for the car to endure a full drive day. As July ends, the team obtains a nearly finished car and the new challenges that come with it. Being active in the current situation is extremely challenging. However, our members' hard work and determination show that so much can still be accomplished even in difficult times.

# FIRST DRIVE

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**COMPONENT INSPECTION**



**MICHAEL FABIANO**

On July 10th, We tested the car to see if it could drive. The team was able to complete some small drives and see what needed to be addressed. Throughout the following week, a few more composite pieces were manufactured, controls were checked, and further checks were done by each subteam to ensure the car was ready for a serious drive day.

On July 17th, the team set up shop on the Princeton Airport tarmac to find out how well the car could drive. Alumni came to look over the car to help give supporting eyes to what may need to be tightened down or looked over again. Newer members were able to be more acquainted with the car through a detailed bolt check and preparation of the course for the

first few acceleration tests. Once everything was verified safe and ready for the driver, we began the full testing process.

The team started with quick acceleration tests dotted with pit stops to check and make sure all is still well. With some loose connections in the cooling system and a few more minor issues, the team reconvened to troubleshoot them. The team continued to pursue several successful acceleration tests. Then we set up a simple road course. After several successful laps and more checks of the car, the team pushed on to test the limits of a young vehicle. In the last several hours, the team prepared a skidpad course, but after only a few laps, some more issues appeared in some cooling connections. After an exhausting day in the summer heat, the team finished its last few laps and returned to the shop to evaluate the car. Throughout the month, the team will continue to make sure the car is ready to pursue quicker lap times and train more new drivers.

We are so grateful for every member, alumni, and sponsor for getting us this far in this challenging season. Keeping us supported in such significant ways keeps the team learning outside the classroom. Thank you, Princeton Airport, for giving us the critical space to test the car and give the team a reliable place to test and improve!



**UNFINISHED RFR20 ON FIRST DRIVE DAY**



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