



Week 6 Update

Team Paragon



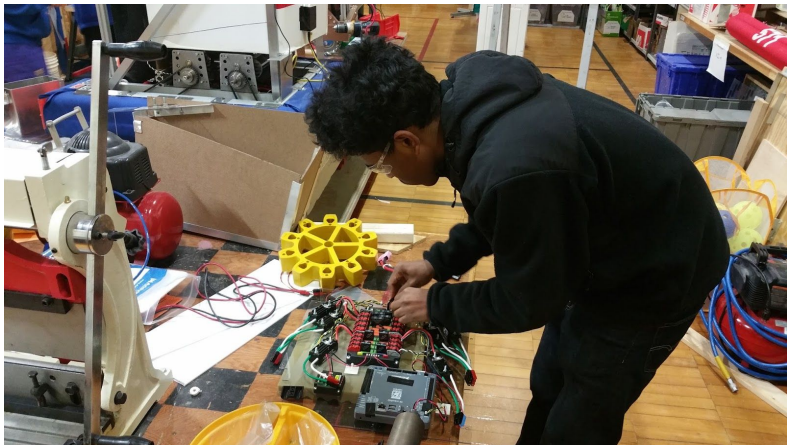
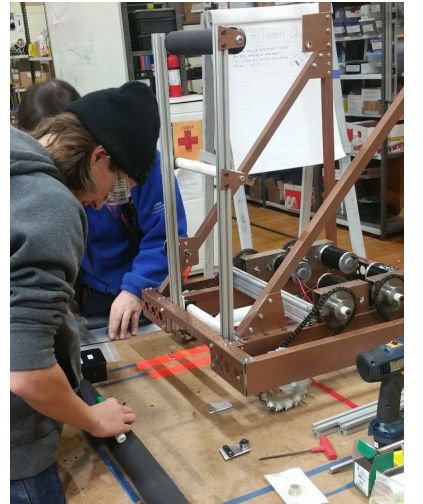
The Shakedown!

Our time with the Suffield Shakedown has passed. Team rookies have been granted a small taste of what a district competition is like, and veterans have experienced a sensation that they may have forgotten about over the passing year. This event has allowed for Paragon to gain first hand knowledge as to how the robot can be improved before the end of the build season on the following Tuesday.

Build:



This week in build, things got very intense. Preparation for both bag and tag day for our final competition robot and Suffield Shakedown for our practice robot were attacked with full force. We added a motorized gate to the practice robot, complete with limit switches, to release the fuel into the boiler on demand, and it works very well! Build has also been fiddling around with the belt to make sure pressure is applied evenly throughout all points in the belt so no balls slip out, and to prevent the belt from sliding around on the rollers.



Assembly of the final chassis was smooth and quick for the most part, but there have been noticeable stutters that have taken up much more valuable hours than anticipated. In one instance, a PVC pipe had been cut and drilled multiple times over a couple hours, only to find that one of the brackets it attached to needed to be changed.

When compared to recent years, build is behind on the final chassis at this moment, but the team plans to sink in extra hours with earlier build sessions in order to close the gap before the fated bag and tag. Time spent at Suffield has also yielded an important insight to

aspects of the mechanisms that still need great care.

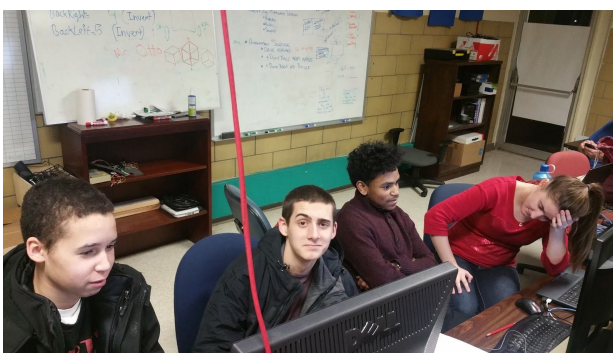
Imagery:



In Imagery, time raced to finish the pit book and the storybook. Pictures were taken and added to the story book, and through extra build hours the awards were able to be completed. After being painted last week, both sets were ready to be assembled fully and prepared for competition. Plans for the decoration of the robot are also completed. The stickers were ordered, cut out, and organized to place on the two sides of the robot. There will also be Lexan in front of the ball collector that more sponsor stickers will be placed on, as well as a new gear lightbulb design. The buttons for competition have been designed and resized to fit properly. Finally, a robot fact sheet has just gotten underway, with the background for the theme/name of our robot as well as characteristics of the drive and performance of this year's bot.



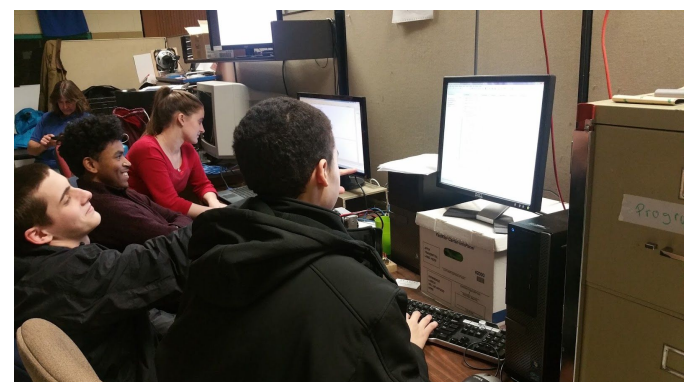
Programming:



Programming this week had a great deal of focus on communication with build about what needed to get done. Properties of the final robot and the practice robot were nearly identical in terms of coding, which meant the main goal was to ascertain that the practice robot was operational for Suffield. If the practice bot programmed correctly, it would likely be the same of the final bot.

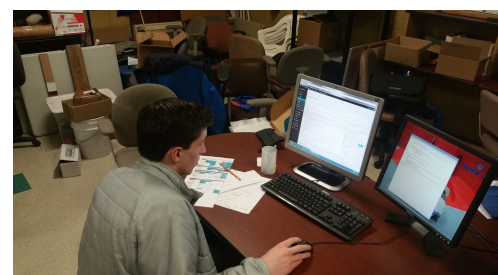
Outputs and inputs were reexamined to verify that the right motor (if any) would react correctly to the press of the right button. The

group ran through the entire drive station program to ensure that all aspects were up and running such as the Heads up Display, Camera feed, and error information logs.



Web:

Web continues with the incremental improvements. More dead links have been removed so no visitor is redirected to an infamous 404 error. Subgroups have also been updated so that each team member is correctly represented, and old mentors have been removed from the page.



Jaycees Presentation:

On February 14th, one of our students went to the Jaycees to present to them news and information about the team and give updates about how we are doing. The Jaycees have been sponsoring us for many years now, and we would love for them to continue sponsoring us in the future. Along with the news, they were also invited to our upcoming competitions. Shoutout to Kadri for tackling this project by herself!

Windsor Education Foundation Grant:

Thanks to the efforts of two Paragon students, the Windsor Board of Education graciously donated \$799 dollars to the team for the purchase of a digital readout for our milling machine for the upcoming year. This digital readout allows us to easily position the cutter on the milling machine to within .001” This attachment will make it easier to quickly machine parts with greater precision and accuracy, Thanks to Ebuka and Sadik for writing up the grant for the team!

Suffield Shakedown:

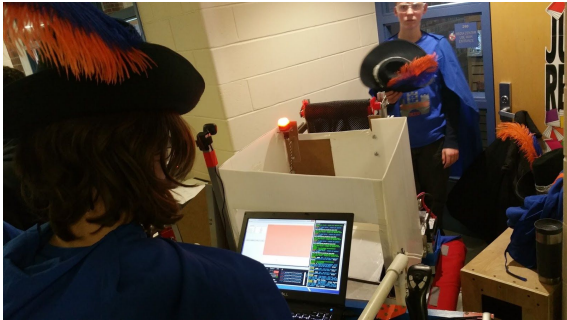
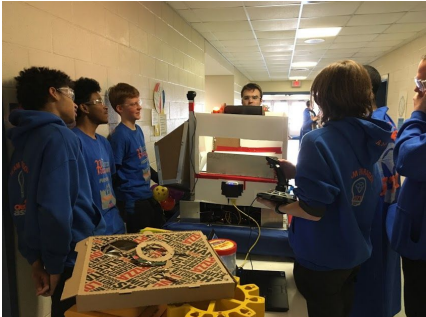
This year’s Suffield practice competition was very eventful, and allowed us to learn a lot about what our strengths and weakness were. Although a lot of things went wrong, we now know what needs to be fixed in the next three days to have a successful final robot for actual district competitions.

Starting the day bright and early, the team began to prepare their robot for battle in the pits. It was soon noticed the bottom roller was cracked, and would be unable to be used. For the first few matches we avoided use of the rollers entirely, and focused mainly on the transport of gears. After lots of thinking (and lots of duct tape), the team was able to fashion a solution to the cracked roller. The victory was short lived, as we then realized the belt kept sliding from side to side, therefore making it difficult to pick up balls effectively. After lunch, a few team members had the brilliant idea to try cutting circles out of our pizza boxes to act as washers and prevent the belt from sliding (#resourcefulness). Although the team remained working on this aspect for the remainder of the day without a final successful pizza-washer, it was still something to think about for our final robot.

During the matches, the computer had quite a bit of trouble connecting to the field controllers, but eventually the problem was figured out. Programming realized they might need to spread the robot functions out to more than one controller in order to have easy access for both the driver and the operator. Because Suffield was not able to assemble the FIRST Airships for this competition, the pilots stood on the side of the field with PVC pipes to attempt to

grab the gears from the robots (a little bit like fishing). This initially worked out for the team, but when they placed springs on a wooden structure in the center of the field for us to try out, we faced much greater difficulties. The gear collector was too high to properly reach the spring on the airship. With more duct tape, we were able to lift the gear collector up higher and get more practice with that. Those who were eligible for drive team and wanted to try out for spots rotated through different positions to get a feel for what they were each like. The mentors were also able to see the potential of a future drive team. Although much more practice is needed, it was a great learning experience to understand the movement of this

year’s robot compared to those who have driven other robots in previous years. We are again incredibly thankful to Suffield High for hosting this event!



Bag and Tag:

Because we lost a whole day of build to be at Suffield on Saturday, an extended session the following Monday was held to finish our final robot and its modifications on time. The team had created a ball gate with a motor and limit



switches, as well as a more durable strap to hold the battery on the robot. The battery moved it's place to the center of the robot instead of the side for a better hold. We also put Lexan all around the outside of the robot for protection, as well as to hold the names of our sponsors on the stickers. We even had a few moments to test fit the final red and blue convertible bumpers onto the frame. Finally, we were able to spend some time working on the components for the climbing mechanism which will get added in Waterbury. This was something we were not able to practice with on our practice bot at Suffield. The robot is being shy and is not yet ready to reveal its name or portrait.



Congratulations on a build season well done everyone!

Upcoming Events:

Waterbury Competition - March 3rd - March 5th

Once again Wilby High School (460 Bucks Hill Road) will be hosting a FIRST robotics regional competition. Come out and cheer for the Blue and Orange (or copper) of Team Paragon at our first regional event!

Hartford Competition - March 31st - April 2nd

Our second regional event will be back at Hartford Public High School (55 Forest Street). This is our "local" regional competition, just down the street in Hartford, CT. Come out and support on any of our competition days to see our spirit!

-AMANDA AND JUSTIN 