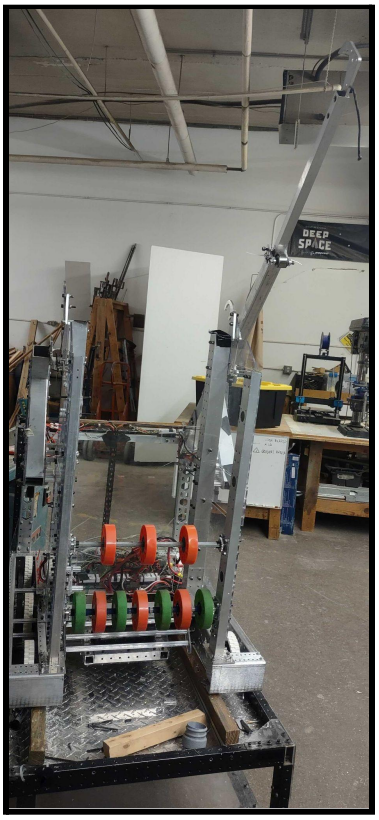
BONDS 581P

Welcome to our ninth weekly BONDS Status Report of the 2022 season, where we summarize what our team has achieved in each week of our build season! In this entry, you'll see what BONDS Robotics accomplished in the ninth week of the build season for the 2022 FRC competition, Rapid React!

Build, Electrical, and Drive Team



On Monday, March 7th, we continued assembling the climber mechanism. We also installed the intake axle for our ball manipulator, mounted our last two motor controllers, finished getting the power switch attached, and reinforced the electrical board. On Saturday, March 12th, we started mounting our robot signal light and finished smoothening our two climber arms. Very soon, we'll attach motors onto the climber and begin testing how effectively our robot climbs!

This week, we also drove our robot for the second time! Any opportunity to drive the robot during practice is greatly appreciated. During competition matches, in-between making repairs and updating our robot's code, there's little time for us to practice driving. Therefore, our robot driver must get enough practice controlling the robot before we compete.

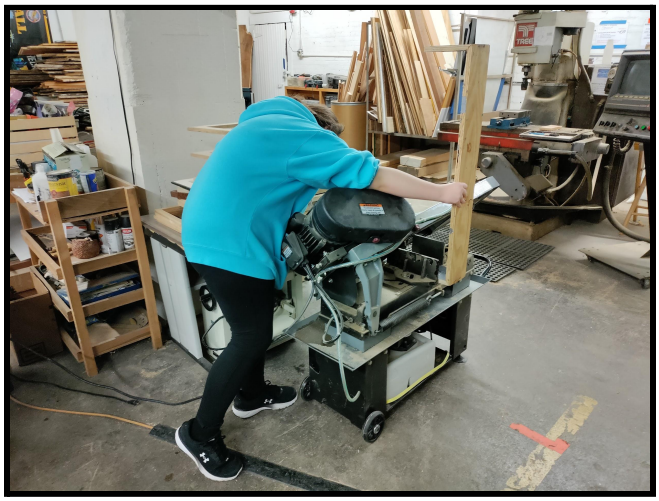
As the robot gets closer and closer to being finished, it's a good idea to discuss what our strategy will be for our upcoming competition! This year, our robot will be able to drive and turn, climb to at least the middle rung, pick up cargo balls and shoot them into the lower hub, and move during the autonomous period.

Our most important priority is being able to drive and turn. Without the ability to do either, our robot won't be able to move across the field and score points! We've focused on not just making a moving robot, but also one that moves quickly. At the competition, the center of the field will have the most activity between teams. Having a robot that can quickly weave in and out of the action will give us a big advantage when we need to score cargo balls into the lower hub. Additionally, it will help us whenever we want to opt for a defensive strategy, when we prevent opponents from scoring points by obstructing their view when they attempt to shoot cargo balls or by blocking a pathway they have to travel through.

Another high priority we have is to climb to at least the middle rung of the hangar zone. Although we're building our robot to be capable of climbing to higher rungs, we want to ensure that our climbing mechanism can work perfectly for the middle rung, since we have to start from the middle rung to climb to the higher ones.

At the beginning of the season, our team decided that developing a working climber was a higher priority than creating a complex mechanism for scoring cargo balls. Therefore, we've focused on creating a simple mechanism that intakes cargo balls on the ground, pushes them up using sets of axles with wheels attached to them, and shoots the balls into the lower hub.

Another goal we've set for the competition is to move during the autonomous period, the first 15 seconds of every match. Valuable points are given to teams who can program their robots to move and even score cargo balls during the autonomous period. Our programming team has worked hard across this season to perfect our robot's code!



There's another important aspect of competitions that we've spent this week focusing on: robot safety requirements! One safety requirement each robot must have to compete is robot bumpers. Robot bumpers help prevent our robot from taking damage, as well as protect other robots from being damaged. We've worked on creating two sets of bumpers, one red and one blue, that will display our team number, 5811. As previously mentioned, we also started working on our robot signal light. This safety requirement indicates if our robot is turned on or off.

Marketing Team

The marketing team made great progress this week! First, we ordered our T-shirts for this season, which we'll be proudly wearing at our competition. Second, we set up an online survey to decide what the name of our robot will be! Every season, we have a tradition where we name our robot after a James Bond character or movie title. For example, in our 2019 season, we named

our robot “Moonraker”, since the season’s theme was set in deep space. This year, we’ve decided to name our robot “Nick Nack”, based on the character of the same name from *The Man with the Golden Gun*. Lastly, we started planning the badges that will be displayed on our team lanyards, which will be worn by both our mentors and students at the competition.

We want to give a big thank you to all of our sponsors this year! None of this would be possible without you, as your support allows us to continue learning STEM values and to Bring Opportunities Near Dayton Students.

To see more of our progress throughout the season, please follow us on Instagram, Twitter, YouTube, and our official website! Stay tuned!

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