BONDS Week 8/9 Newsletter

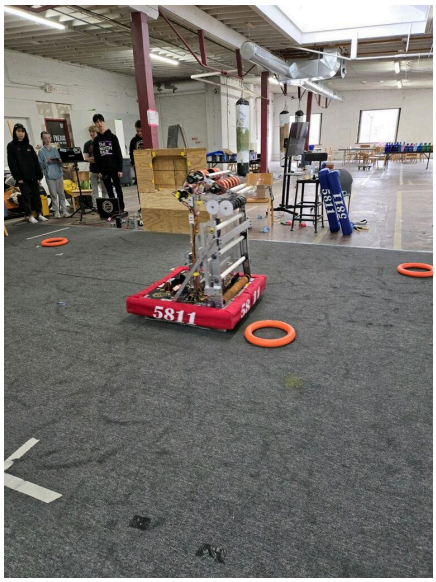
2.26.24- 3.2.24

Introduction

Welcome to the eighth and ninth weeks of the BONDS Status Report for the 2024 season! In this entry, you will see what BONDS Robotics accomplished in the eighth and ninth weeks of our official season for this season's 2024 FRC competition, Crescendo!
The team has almost reached the finish line as we countdown the days until the competition. This week, we finished assembling the robot, and the building team handed it off to the programming team to tune the code and program it autonomously.

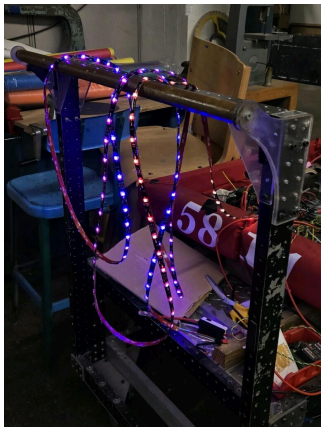
Assembly

The team assembled the climber mechanism this week, the last item to be put on the robot. This year, our team decided to buy a climber for consistency and reliability during a match. This week, a group of students assembled the climber and finished building it by the end of the week. The most challenging component of the climber was adding the gearbox to the climber mechanism. However, the team overcame the difficulty and could attach the gearbox successfully to the climber mechanism. We then installed the climber using clamping bars and redesigned one of the climber stages due to measurement complications in the robot. The team worked on a spare intake mechanism for competition. We had a group work on cutting the spare intake using the X-Carve, and another group assembled a replica of the intake to ensure consistency. The build team will work on pit binders and manufacturing spare parts in the next few weeks. Pit binders are documents that gather information about the robot and the team. Judges look over these binders for awards related to engineering values and community outreach. The awards are announced during playoffs on the last day of the competition.



Bumpers

This week, the team finished both sets of bumpers. With limited time left, the team finished placing brackets on the bumpers and attaching the pool noodles to the robot. After both sets were completed, we measured the fabric for the red and blue bumpers. The colors for the bumpers indicate which alliance you are on. We used a Cricut to print out our team number and ironed on the numbers. Then, we placed the numbered fabric on the bumpers. Even though bumpers are the least favorite task on our team, we are very proud to finish them before the team deadline.



Overnight Practice

This week, the team had our overnight practice. It was a productive 16-hour practice, and we accomplished most of our tasks in the first half of the practice. The first couple of hours were spent dedicating our time to bumpers. We successfully finished the bumpers and worked on adjusting the indexer, switching the motors for the amp mechanism, and vacuuming the carpet for the robot to drive on. After adjusting, we took the robot upstairs and tested the amp and speaker shots. We also realized that our robot was top-heavy and wanted to experiment by driving at full speed and stopping. To our surprise, the robot tipped over less than we thought, which was great news for the team. In conclusion, we decided to review the intake once again to improve from our last design. As we saw sunlight, the team continued to push through the remaining hours by driving the robot and improving the code for programming.

Drive Team

This week, the contestants of the drive team took a driving test to be examined by coaches and mentors. The contestants had obstacles to drive through and were tested on their orientation and parking abilities. The contestants were ranked from the fastest to the slowest and picked based on the contestant's preferences. Congratulations to the following:
Drive Coach- Grace Schneider
Driver- Brian Yamada
Operator- Oliver Spaulding
Human Player- Nicole Yamada
Technician- David Salisbury

Sub-Teams

Business Team- The business team helped our newer students talk to businesses.
CAD Team—The CAD team assisted the build team with the shooter and indexer mechanisms. They also found placement for the climber mechanism, which mentors reviewed.
Electrical Team- The electrical team finished wiring the final robot, created an electrical diagram, and reorganized the wires on the robot
Marketing team- Posted to our Instagram page about the Women and STEM event and planned the robot and drive team reveal
Programming- This week, the programming team focused on autonomous and tuning PID controls. The ninth week was important for the programming team as they began programming the autonomous code for the first 15 seconds of the match. They could tune nearly all of the autonomous routines that would benefit various alliances during

qualifications and playoffs. They programmed an impressive 4-piece autonomous; the best autonomous the team has programmed since the start of BONDS. The programming team will continue to work on completing the autonomous programming and working with the drive team to tune controllers and movement.

Closing Words

We want to give a big thank you to all of our sponsors! Our team can compete because of your support, and none of this would be possible without our sponsor's help. BONDS will continue improving and learning STEM skills and values this season. To see our season's progress, please follow us on Instagram, YouTube, TikTok, Twitter, and our official website for weekly newsletters.