BONDS Week 2 Newsletter

1.15.24- 1.20.24

Introduction

Welcome to the second week of the BONDS Status Report of the 2024 season! In this entry, you will see what BONDS Robotics accomplished in the very first week of our official season for this season's 2024 FRC competition, Crescendo!

A new week has started as we prepare for our preliminary design review presentation on Saturday! This week, we continued to prototype our mechanisms to share with a panel of engineers and receive feedback about our prototype. We finished prototyping and CAD to present to the panel from Monday, January 15, through Wednesday, January 24. One group started testing their designs and took videos and photos for the presentation. This group worked with the programmers to test speed and finish motor and arm calculations. The second group worked on continuing to prototype the ground intake as well as the intake and tested the geometry for each game element used this year. A few of our mentors finished building the game elements for this year. We are very thankful for our mentors who worked hard to make the game elements to help us succeed at competitions. Thank you! To close out this introduction, our team started creating the presentation and finished our final prototyping CAD to present to the judges on Saturday.

Prototyping

Our team finalized prototyping for the first three days of this week to present to the panel. One group used the X-Carve, a 3D carving machine that carves various materials. The first group worked on cutting pieces out of lexan for the intake using the X-Carve and used bolts and nuts to screw the pieces together. To test the intake, the group used a motor to experiment with speed and how far the ring would fly. At the end of the prototyping phase, this group learned that depending on the size of the wheel, the ring flew further than others. The second group used cardboard and wood for their prototyping. This group made a shoot with rollers on both sides for the ring to intake from the ground. Then, the shoot would have another set at the top to ensure the ring would go in the intake. This group also learned that bigger compliant wheels helped the ring go into the intake instead of smaller ones.

Preliminary Design Review Day

On Saturday, January 20, the team held a preliminary design review presentation at the workshop. This year, our panel consisted of the BONDS alums and mentors. During the presentation, the team received many helpful feedback that would later help us during our critical design review stage. The panel pointed out numerous mechanical and design issues that would cause a problem during the testing stage. Later, the team gathered and discussed potential solutions using the design matrices to help us pick one mechanism that would be used for our critical design review stage. The team also revisited our strategy and considered other strategic decisions that would help us during competition. The panel shared advice from their past to help us succeed during the rest of the season.

Sub-team

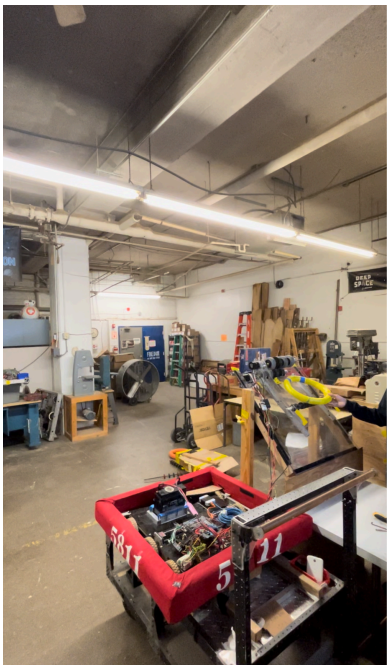
Programming team- The programming team started writing code for the swerve drive chassis.

Marketing team- The marketing team continued to film the BONDS documentary and updated our social media pages.

Business team- The business team wrote the newsletter for this week to send out to parents, students, and sponsors.

Electrical team- The electrical team worked on organizing the electrical drawer for the season.

CAD team- The CAD team finalized their mechanism CAD to present to the preliminary design review presentation.



Closing Words

After a long week of preparation for our preliminary design review presentation, the team is satisfied with their decision on the intake and progress made this season! We want to thank the BONDS alums and mentors for supporting and participating in the presentation.

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. Our team,

BONDS, will keep improving and continue 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.