BONDS Week 3 Newsletter

1.22.24- 1.27.24

Introduction

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

This week, our team continued prototyping for our critical design review presentation! The team was productive this week as they continued to test the ground intake and shooter mechanism for our critical design review presentation. The team captains did an excellent job delegating tasks to our newer students. Although we ran into some obstacles, the team succeeded in our testing phase before we presented it to the judges.

Prototyping

From Monday, January 22nd, to Wednesday, January 24th, our team worked on building the ground intake and shute to test the geometry of the wheels. After cutting the pieces out of the X-Carve, a group of students started assembling the ground intake. After many trials, we concluded that the compliant wheels were too far from each other because the ring was not going through. The CAD team reviewed their ground intake and adjusted the compliant wheel holes to ensure that the ring would touch the compliant wheels and successfully go up the shoot. One group rebuilt the current ground intake, and it was ready for testing. We successfully got the ground intake working with the current design through multiple trials and errors.

On Tuesday, January 23rd, the team gathered at the beginning of practice to discuss two options for the shooter mechanism. The first option is the flapper mechanism. The flapper mechanism consisted of a flat piece of lexan, two 3 in compliant wheels, and four 2 in compliant wheels. The flapper will be used to put the ring in the amp (low goal) using a motor or piston from 180 degrees (starting position) to 90 degrees (ending position). The note (ring) can slide down in the amp

accurately. The compliant wheels shoot the note (ring) into the speaker (high goal). Our second option is the two-sided shooter. The two-sided shooter consists of rollers that will shoot the note (ring) down into the amp or the speaker. With a majority vote, the team decided utilizing the two-sided shooter as our shooter mechanism for this year's game would be best.

The team continued to work on the shooter mechanism for the rest of the week. With many trials, we achieved one goal: to score in the amp. Next week, we will finalize our design and complete the speaker's shooter mechanism. There are only six days until our critical design review presentation! Our team will continue to work hard these next few days to prepare for our presentation on Saturday.

Robot Cart

The team has decided to make a new robot cart to prepare for the competition. A robot cart transports the robot onto the field during the competition. A new leader has been appointed to take on the role of building the robot cart for competition! This week, some students started building the robot cart to prepare for the competition. We congratulate Alan Sarle, our newly appointed robot cart lead. Congrats Alan!

New Leaders

This week, some students were chosen for leadership positions because of their hard work, dedication, and motivation to work toward our team goal. Congratulations to George Sander, who was selected as CAD Captain, and Alan Sarle, who was chosen as Robot Cart Lead/Captain. We are excited to see what you will bring to the team!

Sub-Teams

Business Team- This week, a group of students joined an online call with a past sponsor. We were able to present and talk about the game this year, and they even gave us some feedback on how we could make our presentation better! A big thanks to Kumon for continuing to support us. We appreciate the donations you give us every year. Thank you!

CAD Team- The CAD team continued to work on the ground intake, shooter mechanism, and drivetrain for our critical design review. The ground intake and shooter mechanism were adjusted due to issues with the note (ring) getting stuck in the intake; however, the CAD team quickly fixed the problem and successfully ran the intake without any concerns.

Electrical Team- The electrical team worked on organizing and planning the electrical routing for the final robot. This will be presented at our critical design review presentation and is important during the electrical stage of the build season.

Marketing team- The marketing team continued to film for the documentary for this season and worked on a flyer for the Women and STEM gathering in February.

Programming- The programming team worked on autonomous code for this year's robot and now is able to run independently without control. The programming team is now going to work on improving the control system and removing any glitches that might affect during first 15 seconds of the match

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. 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.