



# **BONDS Week Eight Newsletter**

February 23-March 1 2025

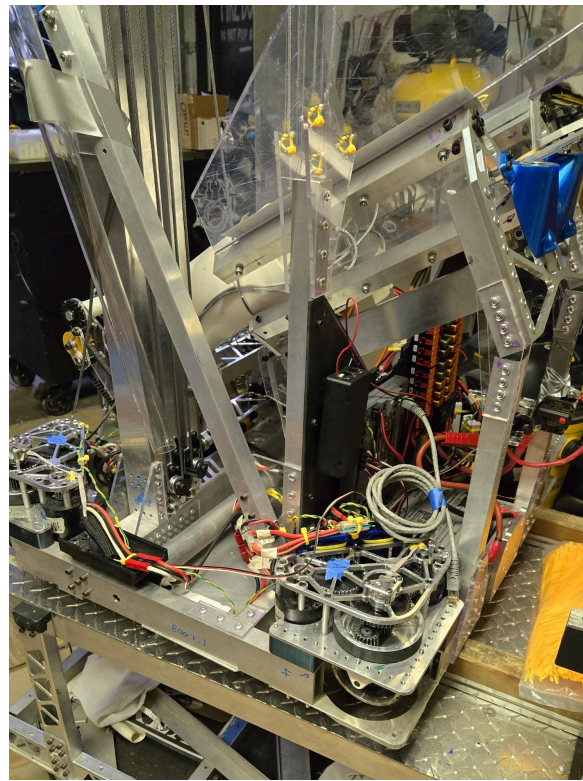
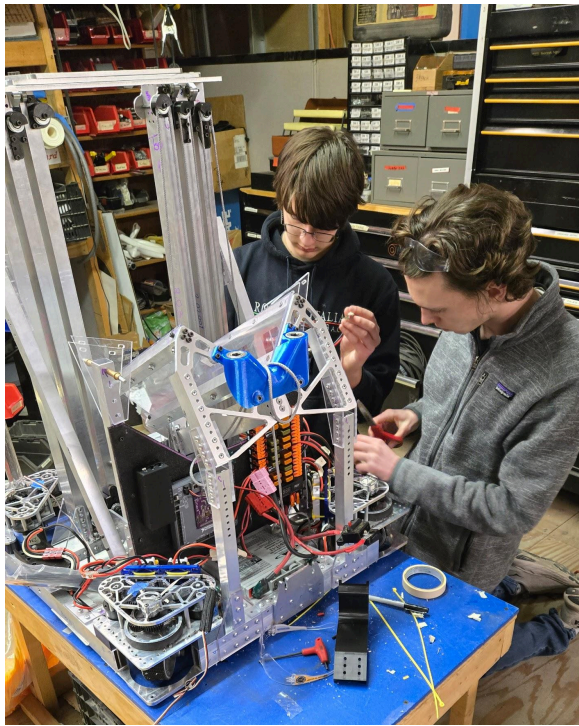
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## Controls

Monday started with wiring the chassis - this Saturday was our drive test, so the large goal for the week was having the robot driving well for Saturday morning. Students, with guidance from mentors, started by connecting motor controllers to our motors and then ran the power wires to our Power Distribution Panel (PDP). We have 14 motors on the robot this year, so that's a lot of wire to run! After the power wires were connected, they connected signal wires and started with the CAN wiring. On both sides of the robot, there are 3D printed pieces that were bolted on to help with wiring routing.. These should help our wiring system stay neat and secure while we compete.

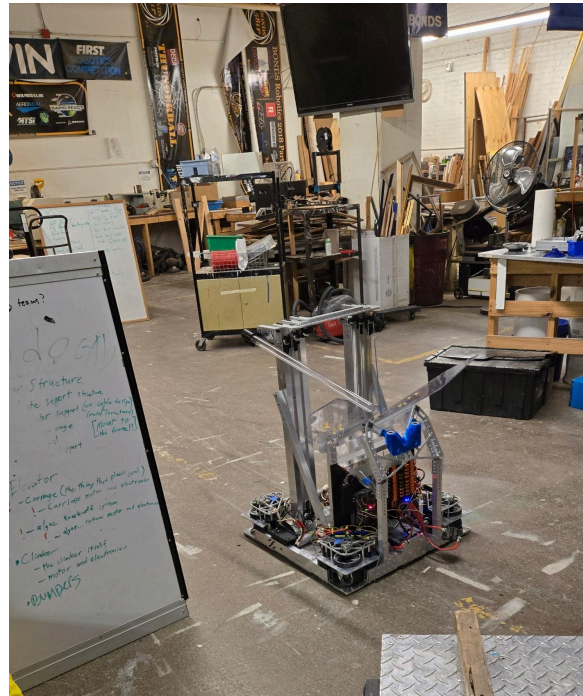
Once the carriage is added and wired, then the elevator wiring will be the biggest piece left to wire. The elevator has a max height of seven feet and travels at roughly seven feet per second, so ensuring the safety of the wiring on the carriage (that will be traveling up and down to deliver coral to the reef!) is paramount. The controls and build teams have talked about the best way to do this, and their teamwork through this process will help get the robot across the finish line. We're sure something will pop up to surprise us, but we're also sure that together, we'll be able to handle it and deliver a great robot to our competition.



## Build

While the controls team was preparing the robot to drive, the build team was using the CNC to continue machining parts for the carriage and climber. After the drive test on Saturday was over, they got the robot back and were able to start adding parts built off-robot.

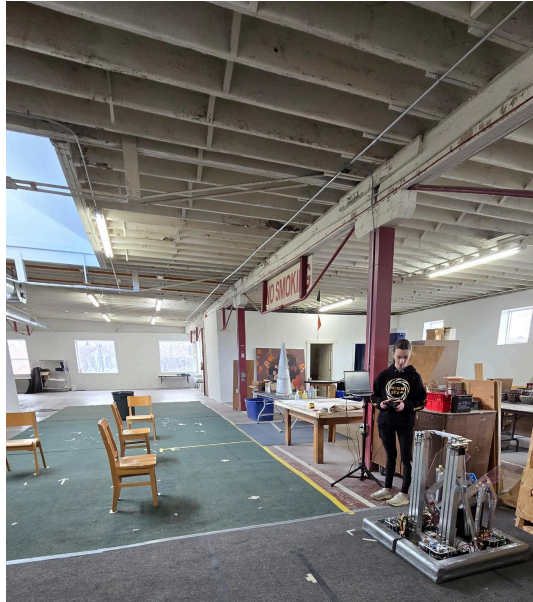
They discovered a few issues, like carriage motor clearance, while finishing up practice on Saturday, so targeting those issues will be the first priority during week eight.



## Miscellaneous

There are always plenty of things going on at practice! We don't put every detail of practices in these newsletters, but there are some fun things happening in the background that we thought we should mention.

The drive test went very well! The drive team is made up of 5 students - coach, driver, manipulator, human player, and technician. Technician is up to mentor discretion, and requires a student with a fair amount of robot build knowledge. The rest of the roles try out starting with a multiple-choice rules test. This year, to be any of the four strategic roles, they had to get a 70%+ on the rules test. Knowledge of the rules, for protection of our robot and alliance, is critical for these roles, and studying and passing this test helps to show mentors how serious they are about it.



From there, students take other tests depending on which roles they want to be considered for. Potential drivers and manipulators take a robot driving test, which tests driving agility, ability to take directions while driving, and robot orientation. Potential human players take a test specifically involving algae throwing, and coaches take an additional written test with more specific and difficult questions pertaining to rules and three short-answer sections about teamwork and communication. Mentors score each of the various tests and put together a drive team based on student role preferences. Stay tuned for next week to find out who will be driving Bubble 07 during competition!

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, and our official website for weekly newsletters.

Facebook: BONDS FRC 5811

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