



BONDS Week Six Newsletter

February 9-February 15 2025

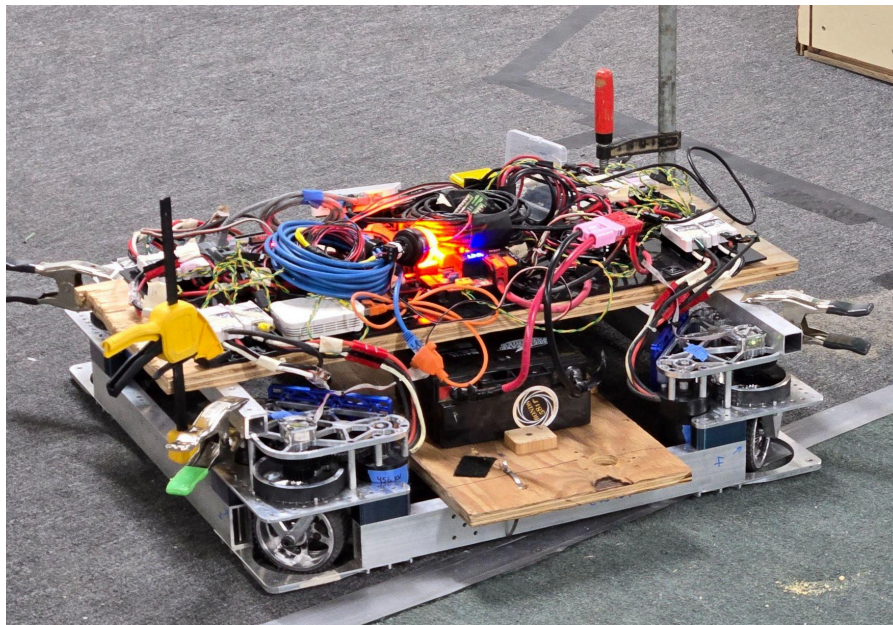
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Controls

This was the controls team's last week with the chassis until it is fully built and wired, so they made the most out of it.

The NavX (a 9-axis gyroscope, accelerometer, and magnetometer) helps us to know where we are in space. It was returning incorrect values (trajectory was correct but rotation was wrong), so the controls team reset it and the navigation immediately improved. Its last mounted and set orientation was vertical, so it has to be reset when remounting it horizontally (or vice versa).

Additionally, the alignment code was fixed to help it know where it is on the field. This is through a mix of onboard sensors and the vision system. Using mostly the vision system, from 2ft away, the robot is hitting +/- 3mm accuracy from the set location. The math for determining the position offset from reef was also rewritten and is working correctly now.



Manufacturing

It's elevator week here in the shop! Our coral-placing strategy includes an elevator with a max seven foot extension. Most of the manufacturing to the tubing and plates was done last week, so now it's time to build it! It was started on Monday, and by 8:30PM on Friday's late practice it was being riveted onto the chassis! Our build team has done a great job so far at building methodically to decrease the chances of errors that will add costly rework time. There have been one or two mix ups in tubing placement, but

the elevator is almost perfectly symmetrical down the center, so usually, only one or two holes need to be redrilled to make it fit.



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.

Bumpers are almost ready to go! All four now have their mounting hardware (minus the piece that can only be put on once the robot is more built up), and $\frac{3}{4}$ have been pool-noodled and wrapped in duct tape. As we get closer to competition, we'll use a staple gun to add red and blue fabric to them and we'll iron on vinyl numbers (5811). These bumpers, a red set and a blue set, are worn during our competition matches and during practices driving around the shop. They denote our team number to observers and field officials, as well as our alliance color, and they help keep the robot, other bots, the field, and humans safe from getting hit in the shins by aluminum tube stock.



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

Website: bonds5811.com

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