

Important Things To Do:

- Submit your team Medical/Permissions Form and Student Contract if you have not already.
- Submit your FRC Permission form.
- Clear your schedule for FRC kickoff on January 9th.
- Have a Great Holiday!

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Mechanical Team Update

By Zack Coutant

The mechanical team is taking a much needed rest during the holidays. On the build side, we are still meeting, but the same intensity of build that happened at the start of the ballistae's construction is not there. Fanatics as we are, we went to the build room Friday, when it was snowing/sleeting, and met. There we worked on putting the finishing touches on the ballistae. The shafts for the arm's power train needed to have flats filed into them, as well as divets drilled into those flats to allow the set screws extra purchase. In previous tests, the sprockets slipped on the shafts. This was the easiest effective solution that came to mind. We also worked on a mount for the battery. Its design is just a frame of angle iron in a

rectangle with post going up to hold the battery in place. It was coming along quite nicely until one builder realized they had taken a bad measurement which according to them threw off the entire mounting rig. An easy fix has been found for this so this builder did not fret for long.

The design team did not have a meeting on Thursday, but has accomplished quite a bit none-the-less. Last week we went through the exercise of designing a simple gearbox which went smashingly. Extensive thought, and hopefully work, has gone into awesome varieties of drive train. The three flavors thought about are a PTO Transmission - two motors per gearbox, both can drive the bot or one can power a secondary function on the bot as needed, a Supersized

Transmission - Extension of the AM shifting gearbox to include mounts for two or three wheels, A 6 wheel chassis that has pivots about the middle axel to allow the wheels to rise and fall over obstacles, ramps or steps. As far as we know, no one has done a PTO system in FIRST before. If you think about it for a moment, such a transmission is not only awesome, but quite useful. The cim motors (big black ones) can not only be used for driving, but also to power the end effector. That is the end of the mechanical news entry for the week. Happy holidays!



Team Awkward Turtle Polo Shirts are available for just \$15.

Kickoff January 9th, 2010

All team members should plan to meet at 9 am on January 9th, 2010 for a full day of kick off activities. Team Awkward Turtle will be analyzing this year's challenge, reading the rules, and getting ready for an intense six weeks of work!

We will be watching the FIRST Season kickoff broadcast live from FIRST HQ in New Hampshire via NASA TV. The kickoff is

scheduled to be broadcast from 10 am - 12 pm. We will have a team lunch at noon and begin brainstorming right afterward.

Bring something to capture your work as each sub-team will be assigning tasks to be done over the coming weeks. Our space is limited so something will be happening every evening and all day Saturday and Sunday for the six weeks of FRC season.

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New Website Design is a Hit!

Where can team members go to find the latest information on Team Awkward Turtle? Our website, of course. <http://www.teamawkwardturtle.org> contains the team calendar and valuable information for sponsors, new team members, other teams, parents, and veteran team members. The website is usually the first impression that people get of our team.

The web team has recently done work on just about every section of the website but the front page has seen the brunt of the activity, making sure that our carousel stays up to date with upcoming events and informative items. The front page also depicts our sub-team structure which will one day find its own page.

We are also looking to put together pages for previous year's sponsors, our facilities, and our team members. It is important to recognize how far that we have come and who has helped us get there.



Our website also contains the team calendar. This calendar presents a list of milestones designed to keep us on track for the upcoming season. We will be

reporting our weekly progress against these milestones in The Turtle Times. Back issues of this newsletter will be available on the website as well (although we may hold back some issues until the end of the season).

Finally, we have to give props to all of the hard working designers including our web team leader, Alex "Sharpie" Schaeffer, as well as Ada Taylor and Tatiana Miller. The website is looking professional thanks to all of your efforts.

**Parents/Student
Meeting is
January 4th at
6pm**

Team polo shirts will be available for sale at that meeting.

"Overall, the team members are well prepared to excel in the upcoming season."

Team Awkward Turtle trains in the off-season

For the first time in the history of Team Awkward Turtle has been working during the off-season to be ready for the upcoming 2010 FRC season.

Teamwork exercises courtesy of Matt Caswell were held at the all-hands meeting on Monday nights. Ginny Ivey taught Computer Automated Design

(CAD) courses while Rich Coutant and Mark Ivey taught the team how to use the tools such as the drill press and the band saw. Ryan Fredette had the entire programming team download and run C++ code on the new robot. Ryan Williams and Rick Jonell taught soldering, and how to wire the robot.

Randy Miller taught C++, Data Structures, and Design Patterns. Jay Hosfelt taught the animation team how to use 3DS Max.

There were many other classes but overall, the team members are well prepared to excel in the upcoming season. We look forward to stellar performances in the VCU and NC Regionals.

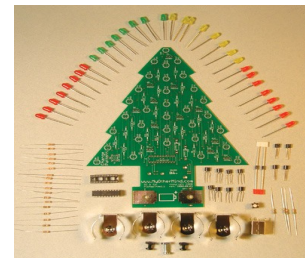
Electrical Team Status

By Tad Miller

Zach C., Rich C., Ryan W., and I spent three hours sorting LEDs (light emitting diodes) to create Picmas Tree kits for a local company to sell. As a result, we received free kits to solder up for Christmas. The beautiful tree helped up practice our soldering skills for the 2010 season.

The electrical team also wired up "the bat" Zippy 3.1, making it possible for the rest of the control team (programming) to make the robot move. This robot was brought to the all day class at South East high school.

We also rewired the Zippy 3 chassis. We are ready for the upcoming FIRST season.



The Picmas Tree—A Christmas tree shaped circuit board, LEDs, and elements to connect a battery or USB cable.

SouthEast Hosts FRC Training

By Tatiana Miller

On Saturday December 5, 2009, from 8:00am to 4:00pm, Southeast Raleigh Magnet High School, home of Team 435 the Robodogs, hosted an FRC Workshop/ Training for all North Carolina First Teams. Several mentors from teams across the state came to educate both rookie and veteran teams on different aspects of FRC, such as electrical, programming, and grant writing. Team Awkward Turtle's own mentor's Lee Barger, Richard Coutant and Mark Ivey hosted two training sessions on mechanical, both of which were extremely successful. Over 16 teams from across North Carolina were present at this spectacular event, aimed to not only educate, but spark excitement regarding the

FRC 2010 season.

Many of the Team Awkward Turtle team members went to the electrical training session in the morning. We were taught about the various electrical components commonly used in FRC robots such as the Victors and the Jaguars. The Jaguar module is a variable speed control for 12 V brushed DC motors. These modules are specifically tuned to the servo signal outputs provided by the new FRC control system that was used in the 2009 competition.

The second session that I attended was about electrical control of various robotic elements. The trainer brought out the pneumatics parts and let the students work "hands on" with the elements.

Lee and mark took "the bat", our new robot over even though it would not fit in any car and it was pouring rain. How they got the robot over to South East without being waterlogged is a complete mystery.

Members of Team Awkward Turtle wore their t-shirts from last year and we stood out from the other teams. But the highlight of the day had to be the 21 dozen Krispy Kreme donuts that were donated to the event. Event volunteers encouraged the students to have two or three. We definitely will have something to work off during the year.

"Team Awkward Turtle is a meritocracy so hard work is the key to obtaining any leadership or drive team positions."

Business Team Status

The Team Awkward Turtle Business Team has been working hard all semester on acquiring a sufficient amount of money in order to properly fund the team for the 2010 season. Earlier in the year our team met and decided that the minimum amount of money Team Awkward Turtle needed in order

to function correctly would be approximately \$21,000. We currently have \$9,300, with promises of \$11,000 more.

The business team is eagerly awaiting news regarding the Biogen Idec grant, which if accepted will amount to \$1,000. News concerning Biogen Idec's acceptance or rejection of our

teams grant proposal will be announced by the company in late December. The Business Team is also currently working on getting a group of students together in order to go and personally talk to several businesses, such as Walmart and Lego. If you are interested, please contact Tatiana or Zack.

Succession Planning

Many of you know who the student captains of your sub-teams are, but do you know who is second in command? With so much going at the Regional competitions, every sub-team has to have a second in command. This helps the team continue when the sub-team captains are sick, taking finals, or just not able to make it one

night.

Additionally, any sub-team captain who even wishes to think about driving the robot in competition will not be eligible unless a strong second-in-command is there to take his place while he is driving. Ideal second-in-command leaders for a current senior captain are juniors or younger as they will

be slated to take the command of the sub-team the following year. Of course, Team Awkward Turtle is a meritocracy so hard work is the key to obtaining any leadership or drive team positions.

Sub-team captains are working with their teams to determine their second-in-command for this season.

FRC—The Turtle Times

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Team Awkward Turtle specializes in training high school students in all aspects of robotics, an up and coming technology

Important FRC Websites:

Bill's blog—<http://frcdirector.blogspot.com/>

Blue Alliance (Competition video)-<http://www.thebluealliance.net/>

Chief Delphi—<http://www.chiefdelphi.com/forums/index.php?>

FIRST—<http://www.usfirst.org/>

Popular Mechanics article about Championship—http://www.popularmechanics.com/blogs/science_news/4313889.html

Southeast High School Robodogs- <http://robodogs.srhs.net/>

Team Awkward Turtles 2010 Organization

