



TEAM 1718

VOLUME 4, ISSUE 1

FIGHTING PI WEEKLY

JANUARY 15, 2011

NEW GAME: LOGO MOTION BY: KRYSTAL DIEL

FIRST:

The sport where anyone
can turn pro!

UPCOMING EVENTS

FEBRUARY 22
ROBOT BAG DAY

FEBRUARY 25
SPAGHETTI DINNER

Special points
of interest:

- Team 1718 will produce a weekly newsletter now that build season has begun
- Team 1718, decided to compete again at West Michigan on Mar 18 where we won the District Chairman's award last year
- Team 1718 will compete at Troy, MI for its second competition the following week
- The following week is the Michigan Championship

After much anticipation, FIRST has unveiled this year's game. This year's FIRST Robotics game is "Logo Motion." This game is played on a field that is 27' x 54', which is approximately the size of a basketball court. A total of six robots play on the field at once in a three on three setup. The objective of the game is to hang as many inner tubes as possible in a two minute time period. These inner tubes are in the shapes of triangles, circles, and squares. They are hung on a vertical grid that has three rows of three pegs. The three rows are at different heights for the robot to hang the inner tubes. If a robot places an inner tube on a higher row, more points are bestowed upon that alliance. When the inner tubes

are arranged to create the FIRST logo (a triangle, circle, and then square), the points for that row are doubled. During a fifteen second autonomous period at the beginning of the match, robots have the opportunity to hang yellow inner tubes, dubbed Ubertubes, on the grid for the possibility of doubling some of their points. In the last ten seconds of the match, robots have the opportunity to deploy a minibot. A minibot weighs less than fifteen pounds and is deployed onto a vertical pole. Minibots that reach the top of the pole earn bonus points. Four minibots race to the top on four separate poles and are allotted points based on when they reach the top. A game animation is at the site given below.

<http://www.usfirst.org/roboticsprograms/frc/content.aspx?id=18762>

CHRISTMAS PARADE FLOAT BUILDING WRITTEN BY: CRISTHIAN TOLLIS

On December 4th, 2010, the annual Holly Days Christmas parade took place. Team 1718, The Fighting Pi, took advantage of the opportunity to go out and show what FIRST robotics was all about. Building the float for the parade was a great experience, bringing the team closer together. About ten team members gathered at the Tobey residence, where the building of the float occurred. Taking nearly a day to accomplish, the float building was completed just before the parade began at 6 p.m. Those who assisted with the construction of the float

then conveyed through the streets of Armada upon it. One member recalled how tiring, but rewarding, it was going through this experience. A reward for making the decorative float was taking third place for the best usage of lighting. One memory that can be recollected, especially by Rachel Goubert, is that team member, Eric Kosek (a.k.a. Smurf), felt the need to open an entire package of Christmas lights for a mere three feet of lighting. Holly Days is a terrific event that brought Christmas joy to people, and The Fighting Pi helped complement this feeling.

TEAM DELIBERATES NEW GAME

BY: JESSICA PAYNE

With the kickoff behind us and only six weeks to build a robot, Team 1718, along with our newly started protégé Team 3539, out of Romeo High School, has been spending our first few meetings in a conference room. With no tools, we just discussed what we want our robot to do and how we want it to do that. We go by the motto “no idea is a bad idea” and encourage team members to throw out anything that comes to mind, even if it seems like a far fetched idea.

For the first meeting, all of the mentors but one were kicked out of the conference room. Students settled in with a dry-erase board and a supply of caffeine to start the long process of deciding what our robot would do. One student from Team 1718 and one student from Team 3539 were in charge of guiding the decision-making process. When someone had an idea to introduce or a comment on an idea already mentioned, they would be thrown “The Ball”. The Ball is a game ball from 2009, which is used to keep side conversations to a minimum during the meetings. It ensures that everyone's ideas are heard and given thought. When someone has The Ball, they have the floor others are focused on what they are saying. If someone else wants to comment, they wait until The Ball is theirs. Using this method helps move the meeting along and guarantees that everyone who wants, can present their idea knowing that it will be heard and discussed.

The first meeting centered solely on our strategy; do we want to be able to hang tubes on all three rows, do we want to try throwing tubes, and do we want to be fast and maneuverable or slower but have more pushing power?

Once we figured out some of the things we wanted to do, we started prioritizing items so that when it comes to designing the robot we know what we absolutely have and are able to accomplish. We ended up deciding that hanging tubes is our first priority. We want to be able to perfectly hang tubes on all three rows. Accuracy was our second priority, followed by speed and maneuverability. The one mentor who was present during the debating, Mr. Wahl, told us at the conclusion of the meeting that our organization and the speed of our decision-making this year were better than he's ever seen in his six years of mentoring robotics. With the use of The Ball and the white board, we were able to keep ourselves from talking in circles and bouncing around too much. We also had more review of the basics because of the fact that about half of Team 1718 is made up of people new to robotics. We have an entirely new team in our midst-Team 3539. Game rules were reviewed to make sure everyone understood them and to answer any questions. Then we moved on to game strategy, what we want to be able to do, which is what we discussed at the first meeting.

After the first meeting, we had our basic strategy determined. It was time to move on to basic design. Now we had to figure out how to execute what we decided to do in the strategy meeting. For the design meeting, we focused mainly on the lifting apparatus that would get the tubes up to the pegs and the grasping mechanism that would hold on to the tubes as we drove to the pegs.

There were a few main ideas for the grasping mechanism: pronged arm (like a claw), rollers, suction cups, inside expansion, adhesives, and a hook. After debating all of the

options for over two hours, we put it to a vote. We decided that we would focus on prototyping the claw and the rollers, because we thought that they would be the best way to grasp a tube and hold it while being jostled and bumped on our way to the pegs.

The next step was to decide the type of lifting apparatus, the rollers or claw, would be attached to. The main ideas for that were a telescoping arm, a multi-jointed arm, a forklift, or a scissor lift. Deciding on just one of these to prototype proved to be difficult, and we used the entire rest of the time at the meeting just listing and debating the pros and cons of each. The lifting apparatus discussion carried on into the next day's meeting, where we selected the telescoping arm, which worked well for us in 2007 when there was a similar game.

With both Team 1718 and Team 3539 as a part of the discussion, the field of ideas was amplified. With more brains working together both parties benefited greatly. We get to use the added brain power while the rookie team has the benefit of working with an experienced team that's been around the block. According to mentor and FIRST judge/referee Mr. Wahl, the process by which we go about conducting the meetings is very important. Having meetings with both teams present helps show Team 3539 a process that has worked for us that they can try. Hopefully, with their brains and our guidance, their FIRST career gets off to a great start.

As for Team 1718, we'll continue using The Ball and occasionally kicking the mentors out of our meetings, and who knows? Maybe this year we'll go from being ranked seventh in the world to first.