



# The Weekly Buzz

**Issue 1:** Monday, January 16th, 2012

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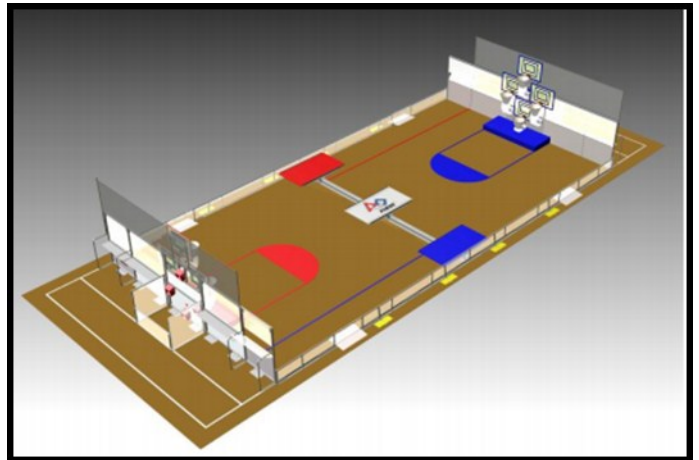
## This Year's Game: Rebound Rumble



The Rebound Rumble<sup>SM</sup> robotics game is played between two Alliances of three teams each. Each Alliance competes by trying to score as many of the basketballs in the hoops as possible during the 2-minute and 15-second match. Balls scored in higher hoops

score Alliances more points. Alliances are awarded bonus points if they are balanced on bridges at the end of the match. In matches where opponent

Alliances work together to balance on the white bridge, all participating teams earn additional valuable seeding points.



[Click here to view game animation on YouTube.](#)

## Countdowns:

### **Ship Date:**

35 days

### **Scrimmage:**

32 days

### **BAE Regional:**

42 days

### **CT Regional:**

72 days

### **Championship:**

100 days

## Where We'll Be Competing This Year:

### **BAE Granite State Regional:**

March 1- 3, 2012

Verizon Wireless Arena  
555 Elm Street Manchester, NH

50 teams competing

### **Northeast Utilities FIRST Connecticut Regional:**

March 29-31, 2012

Connecticut Convention Center  
100 Columbus Blvd Hartford, CT

61 teams competing

### **FIRST Championship:**

April 26-28, 2012

Edward Jones Dome  
St Louis, MO

136 teams currently registered  
As more teams win regional events and awards, more will register to compete.

## Brainstorming:

### Buzz Robotics: FIRST Team 175



Mentor, "H" organizing sticky notes during brainstorming

The day after the game was revealed and we learned the game and the rules, we sat down to brainstorm together. Each student put out an idea of what they'd like the robot to do to play the game. After several rounds of the students giving their ideas the mentors then gave their input.

Once the team came up with an extensive list of strategies and attributes, a concept list was created. The team then reviewed the concept list and each person chose their top three most important attributes from each category. Votes were cast by sticky notes and organized on a large board. These categories included topics such as:

- Drive
- Ball Handling
- Hybrid Mode Strategies
- Ramp Handling

Votes were tallied and sub teams were created based on the top voted attributes and strategies. Students chose what sub groups they wanted to work in alongside mentors.



## The Weekly Hodge

Hi Team Buzz,

Since this is the first in a series of weekly newsletters I will be writing. I thought I would start out by expressing what BuzzRobotics has meant to me as an educator and person over the past 16 seasons. When this project began in 1995-96, it



Jim "Hodge" Hodrinsky working in the Fermi shop in 2007 with student Kristine

seemed almost an impossible task to complete, let alone be as extraordinarily successful as it has become for us. I have met people that I would never been exposed to, especially the other mentors on the team. If this project didn't involve the students in the design, construction, repair and strategy development, I likely would have never put in the time, energy and

commitment, along with all the other adults, to ensure a positive learning experience for all of you. This has been the most important educational contribution I have made that spans my entire career. Take advantage of interacting with all your mentors. You will not fully appreciate the impact this will have on the rest of your life.

Just so you are aware of my schedule, I will probably only be in to work with you mostly on Saturdays and Sundays. Weekday work periods are possible, but I would have to work with you all from 3-5 PM. Emergencies (such as machine repair or calibrations) only require a phone call or Email for my help. If you have sketches you want drawn, send a Visio file or a .pdf file, and I will work on it if time and energy is available.

And lastly, some housekeeping in dealing with my condition. Since I am on immune system suppression drugs, I will always be wearing a mask to protect me from all of you. I am a "hands on" person, but if I forget and shake hands or hug you, I will wash my hands immediately to reduce my chances of infection. Finally, if you feel any illness coming on, just stay away from me.

Those of you that are new to the team - don't hesitate to ask for help when I'm there, or introduce yourself to me so I will have a chance to get to know you all.

## Team A Drive

Team A is currently working on designing a robot that can cross the bump in the middle of the field. We placed wedges on the front of the robot to lift the robot over the bump, but after getting to the top of the bump, the robot got stuck in between the first two sets of wheels, and the traction on the back wheels was not great enough to get the robot over the bump. After our first design failure, we decided to move the front wheels farther forward and out, and the back wheels farther back and out, and replace the four outer wheels. We kept the wedges on and added a skirt along the sides of the robot. This was also a failure.



After the multiple failures, the robot was used to help balance on the ramp. Along with another group and their robot, we balanced two robots on our ramp. Using the traction we now had because of the new wheels, we pushed the other robot up the ramp and balanced it very easily. We will continue working on getting the robot over the bump by designing a concept that consists of minimal impact on the robot or other systems. In other words, we're trying to make something lighter and easier to use.

*-Kelsie Atiyeh*

## Sub Group Updates:

## Team B Ramp Handling

Busy at work, Team B has been designing and prototyping an arm that pulls down the bridge. Their design, however, does much more than that. Using a series of rollers, 3 on top and 3 on bottom, their multifunctional arm has the potential to pick up from the ground and feeder station, lower the ramp, and deposit balls either straight to a shooter or a hopper. A prototype was built and connected to a kit bot to test designs and potential problems.

Since our prototype was constructed, some issues have surfaced. One issue is weight due to manufacturing the prototype from steel, a final assessment of materials will be made during our design review. The arm is only supposed to extend a maximum of 14 inches beyond the frame of our robot at any point. Our arm did fit inside the 14 inches, however when rotating up or down, we were not sure if the top of our arm would surpass the 14 inches as it passed by. To prevent this, we set our arm slightly further into the robot. We also ran into a problem with the position of the bumpers. When the arm is in the down position, it comes into contact with the area that the bumper will occupy. We plan on shortening the arm so it does not come into contact with the bumper. Our goal for the rest of this week is to make these changes and to power our arm so we can see how it performs and come up with a final decision.



*-James Surrett*



## Team C Ball Shooter

Team c was designated to work on designs for the shooter with mentor Jim Morin. Over the past week, our main goal has been to finish building the ramp and scoring hoops for the field, rather than working on shooters. We have all taken part in putting together some part of the field, from cutting the polycarbonate for the ramp or putting together the fender underneath the hoops. Our work has mostly been mechanical, measuring wood, gluing/nailing it together, and testing how robots react with each field piece.

Entering the end of this week, Team C has been able to begin testing shooters based on our 2006 robot. We had to take apart the old shooting guide because the pool balls from 2006 are smaller than the basketballs that we are using this year. After bending some plastic and finding some C clamps, we put together a new guide that works with the old robot. A problem arose though; the wheel on the robot spun unevenly and shooting was imprecise. In response to that problem, we are currently working on testing different kinds of wheels on the old shooter, and we hope to have a working design by next week.

*-Nicole O'Brien*



## Sub Group Updates:

### Team D Programming

Team D is currently working hard on accomplishing 16 tasks of which we have completed 8 of those 16 tasks. One of the big accomplishments was to get the Kinect system operational. That consisted of reading a person's arm movements and gestures and assigning them certain tasks like turning on a light or driving. We have also successfully completed building and testing both an electronics bread board and a pneumatics bread board. Those were made up of various parts so that we could test out our system in a safe and controlled manner. After developing a first cut of our software using the bread boards we finally could load the software into an actual robot.

We tested the robot and discovered that the robot could not drive fast enough in the Kinect or Hybrid mode. After reviewing our code we found that our scale values were set improperly. By increasing the scale values the robot now drives at a faster speed.

We plan to continue developing code for the remaining 8 tasks including a more difficult task of getting a camera to find a piece of retro reflective tape to help aim the basketball to the hoop.

*-Zachary Boyer*

