Rolling thunder

Penfield High School
Harris Corp., RF Communications Div.

2005 Chairman's Award Essay

Every story has at least two sides. The tale of the RollingThunder team has four sides. When we started this year's First Robotics Competition as a rookie team, the tasks seemed to be as big as the whole world. The world globe....a shape with an infinite number of facets. While a simple cube has six sides; a Dodecahedron has twelve sides, it is the Tetrahedron that makes the simplest, yet strongest three-dimensional object. The tetra, with its four equal facets is where we begin this story of our team. Our team, "Rolling Thunder" from Penfield High School has members from all four school-year classes, with a lot of representation from the freshman class. We realized very early on that we needed to have a leader for each class in addition to actual sub-team leaders for the task of building the robot. No one team member and no single mentor can really tell our whole story. So, we have chosen to have four voices from our team represent those four equal faces of the tetra. Each corner of the tetra represents a piece of our team. If any one component fails, the structure falls down. So, here's the story of four facets.

First, comes the words from Mirza Strujo, the senior class leader:
When we were introduced to the robotics team from Harris, our corporate partner, we all thought that we had an understanding of what FIRST means. At first, our team was very diverse, with all different grade levels. Having more than half of the student team from the freshman class made it even more interesting. The Rolling Thunder team started in November with team-building activities and meetings. I saw these times as the best times of the whole experience. The students had a chance to work with real engineers and it was a great opportunity for me being a senior to see the profession being displayed firsthand. I knew I wanted to be an engineer, so I enjoyed learning from my mentors. Our team had over two dozen pre-season meetings making sure that everyone on the team had a good feeling of everyone's strengths and abilities before build season started. It was a great time because we got to interact with engineers and students from all different grade levels. We did various team-building activities from pasta bridge building to mouse trap rally cars. We enjoyed learning how to organize our thoughts into a task and it helped us prepare for build season. We knew that we were not going to have a lot of time once the build season started, so we knew we had to focus on schedule. We practiced many timed activities to help us understand how to complete a task in a specific time period. The Rolling Thunder team felt like we were done with robotics competition before it even started. Once we had the game introduced to us, the kickoff event at the Rochester Science & Museum Center, it was just the beginning of our own "rolling thunder". We came back to school and got to work. We knew we would have to establish the game field, so what we did first was to go to Home Depot to purchase all of the necessary PVC equipment to build it. The first couple days were fast-paced and we knew if we started in the right track that we would get the job done in time. Once we developed all of the tetras and most of the field, we got started on the drive train and chassis. We continued to have short meetings to get all our ideas across and to make sure that everyone's input was involved. We decided that we would go with the six-wheel drive to maximize speed and traction and to be a little different from the rest. We used the chassis that was provided and we went on from there. Our team has a lot of strengths and talents and it was awesome seeing all of them come together. We are very proud of our custom wheels for the drive train. We wanted to maximize the tread with the wheels that were given us, so we came up with the perfect plan. Our wheels are made of ABS plastic and it was designed by Steve Manzoni, one of our sophomores on the team. We sure had something different and original on our robot. We hope that this will set us apart from some of the teams in the competition. Rolling Thunder needed to have a great arm if we wanted to be successful in the competition. We decided to go with a leadscrew idea. We knew that we could lift a lot of weight with the leadscrew and it would be cool to have the biggest leadscrew ever. We have done so much to have RollingThunder be a success that it really shows throughout our team. Everyone has put a lot of time and input into the robot. We learned a great deal from this experience. We were provided with a chance to work with engineers for a common goal and it really paid off. I learned more about the profession I want to get involved in and I feel this experience will last with me forever. It proved to me that working together we could make something amazing using everyone's ideas. I hope that RollingThunder impresses the judges and, most of all, makes a stand among other robots in this competition. I know that it has done so already in our minds.

2005 Chairman's Award Essay (cont.)

Another facet of the RollingThunder story comes from Mark Mascadri, a sophomore:
As a team, we have come so far in such a short span of time. When we started last fall, we were disjointed and unworthy of the chairman's award. We were clueless of what sacrifice, dedication, and teamwork was required to be considered a competitor. Through many teambuilding activities, we have greatly improved our performance. Now each member has a sense of purpose and the desire to compete together as a team. We have transformed ourselves into a team now worthy of the chairman's award; well, actually we're competing this year for the Rookie All-Star award. As a rookie team, we did a lot of research and got a lot of ideas from the more-advanced teams that we look up to and admire. We have progressed so quickly that we have now become a team that is a great example to others and worthy of other team's admiration. You may be asking yourself how such a radical change for the better is possible. The answer is "leadership". Our group of four student leaders has become a motivational driving force and a source of great enthusiasm and encouragement within the team. The ability to step forward and lead others is a quality that FIRST has brought out in us, and a quality that we didn't know we had. Why wouldn't the student leaders be awesome when they had such great role models? The engineers from Harris generously donated hundreds of hours to the team. We learned from them every day, soaking-up as much knowledge and professionalism as we could.

A third facet of the story of RollingThunder comes from Richard Doell, a freshman:
During my time here at the Penfield Robotics Team 1511 Rolling Thunder, I have gained new experiences and acquired fresh insights into the world of robotics. I have made new acquaintances and learned new things about the exciting worlds of CAD and gears. I believe that I have contributed to the team by giving my best efforts to the modeling and construction of the arm and robot.

And, lastly, the fourth and final facet of the RollingThunder story comes from Kim O'Toole, the team leader from Harris Corporation's RF Communication division:
This team has become the culmination of my entire FIRST experience. I originally got involved in FIRST in 1996 as a high school sophomore. At the time, I was debating between becoming an art teacher and a glaciologist. FIRST opened my eyes to the world of engineering, and I had some amazing mentors. Upon my graduation in 1998, I decided that I was not ready to leave the program behind. I was determined to pick a college where I could continue the FIRST experience. I applied to several colleges that had FIRST programs. However, I chose Clarkson University because it would allow me to expand the FIRST program into the great white north of New York, where they knew nothing of the program. I founded the Clarkson/Massena team for the 1999 season, and continued on with the program, helping design the scholarships and recruit new high schoolers. My entire goal was to affect just one student the way I had affected, but I found quickly, in the 1999 season, that I had the chance to affect so many more! I gradated again in 2002, once again leaving FIRST behind, but still volunteered for the regional events. This past summer I was approached by parents of students at Penfield High school, who wanted to help found a team for their daughters. They had received my information from the Clarkson team. So we met with the school, I procured money from Harris, and we went off and running. New seminars and teambuilding exercises every week, preparation for the competition, and finally building the robot. This year has been amazing. Our students are so much fun to work with, and so hungry for hands on experience. It is a world of difference from where I started in the program. FIRST has essentially watched and helped me grow. It taught me not only engineering, but leadership, and how to motivate people, and how to get to know students and successfully become a mentor that can have an effect in their lives. It's been wonderful to see all of the students have a chance to grow the way I did.

So, there you have four facets. Four different perspectives on the tale of a great venture. Our team is not sure how far this particular leg of the journey will take us; hopefully the Nationals in Atlanta. However, what each of us already does know is that a true well-oiled machine relies on each part, and that each individual part in the machine relies on another component. The four facets of the tetrahedron all rely upon each other very equally. In this simplistic three-dimensional structure we have learned so much more than the physical tasks of building and running a robot.