



Team 1557: 12 Volt Bolt 2009 Chairman's Executive Summary & Essay

Executive Summary

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on this year and the preceding two years. *

Change has been noted in student attitudes toward school & their own capabilities. Two alumni secured college scholarships. 10th grader Rajiv said "I have learned to work with power tools I never saw before." Joshua, an 11th grader, stated *FIRST* "helped me decide what I want to be...an electrical engineer". Jake, a 10th grader, summed it up saying "I have seen more of my potential". Mentors state *FIRST* makes them hopeful that more students will be prepared to go into the tech jobs of the future.

Examples of role model characteristics for other teams to emulate. *

At *FIRST* events 1557 provides programming & mechanical help to other teams. The team embraces gracious professionalism & seeks ways to help. Team 1557 set up the playing field for the 2008 Robot Rodeo & 2009 Robot Ruckus. This year it helped create a 2nd Lake County Team, #2797. Assistance was provided by loaning an old 1557 robot for driving practice & regularly visiting their meetings. When MAK Team 211 from NY struggled to find orbit balls, Team 1557 came to their assistance donating five.

Describe the impact of the *FIRST* program on your team and community with special emphasis on this year and the preceding two years. *

1557 exposes members to new careers and shows county leaders *FIRST*'s vision. It unites private, public & home schooled students & mentors from throughout Lake County. Community leaders formed the Lake County Robotics Steering Committee in 2008, a group dedicated to creating & funding robotics programs across Lake County. Meetings with commissioners resulted in a \$1000 pledge for every team created. The school superintendent asked her vocational specialist to research creation of more teams.

Team's innovative methods to spread the *FIRST* message. *

Team 1557 gives demos to schools, businesses & civic groups. It attends street fests & parades. In addition to current outreach efforts with the team-built robots, future plans include use of a child friendly reading robot donated to the team. Press releases are written for media coverage. A 2008 team article is posted on Instructables.com: [How to join a FIRST robotics team](#). A public TV ad was filmed on 2/10/09 of 1557's '09 robot. A sign on its downtown building advertises the team's new home.

Describe the strength of your partnership with special emphasis on this year and the preceding two years. *

Team supporters are kept informed & thanked with letters, a DVD & invitations to team events. Sponsors receive a certificate with team photo & named on 1557's website, t-shirts, robot, and banners. In 2006 the team brought its school superintendent to the FL Regional & strong bonds have formed. Two alumni now mentor. Parents & the Kiwanis provide lunches during build. 1557 is

always available for demos, and meetings are open to any visitors wishing to see the robot build in progress.

Team's communication methods and results. *

Information is disseminated using 1557's website, email system, team bulletin board, annually revised handbook & written meeting minutes. It has created brochures, cards, power point presentations & DVDs. Students are recruited by emails to all county H.S.s, flyers, & presentations in '08 to Eustis H.S.'s robot club & at Christian Bible School's chapel. A mentor request is posted on the bulletin board at Lake-Sumter College. 1557 maintains a data base of school, sponsor and community contacts.

Other matters of interest to the FIRST judges, if any. *

Teacher Bill Hamilton thought Team 1557 would cease to exist in 2007. After struggling to find a workspace, only a handful of students and mentors remained. Previous year's membership had been in the 70+ range. Despite inadequate workspace, funding & manpower, the team stayed focused & remained a competitor. It worked hard to spread *FIRST*'s vision to others & campaigned for support in the community. Team 1557 now celebrates its 5th year with a new home, growing membership & renewed commitment.

Essay

Historic anniversaries are an opportunity to reflect on achievement. *FIRST* Robotics Competition (FRC) named this year's challenge "Lunacy" to honor the 40th anniversary of man landing on the moon. This comes on the heels of NASA's 50th birthday. Team 1557 *12 Volt Bolt* is celebrating an anniversary of its own. Five years ago, the team officially became a FRC competitor.

This founding followed a year of determined effort by a small group with *FIRST* experience. Businessman Lee Johnson was a 2002 Florida Regional judge. He saw "hundreds of kids whipped into a frenzy over math, science and technology" and wanted students in Lake County to have an opportunity to participate. Dave Owen, a Walt Disney World Engineering Manager, observed FRC Nationals at Epcot and was hooked. Dave and his son Ryan became involved with an Osceola County Team, but the family wanted to bring *FIRST* to Ryan's Tavares High School. Although this did not happen due to a lack of teacher support, the Owen family and Lee Johnson met and combined efforts. Team 1557 was founded.

The first two years, Team 1557 met at Lake Technical School. Lake Tech provided mentors, machine shop, wood shop and welding. During 1557's rookie year more than 90 students, teachers & mentors signed up for the team. Public, private and home schooled students from throughout Lake County participated. After 2006, Lake Tech was no longer available. The team struggled to find workspace, and met at Mount Dora High School until securing the basement of Impacting Word Church. Although the basement provided an area in which to work, it had only one electrical outlet, no tools or equipment, no water or bathroom facilities, and no heat or air conditioning. The entrance was down a steep grass embankment with no sidewalk or cement path. Everything was hand carried in and out, up and down, a steep slippery slope. The team began over a week late and lost many mentors and students, but built a robot on schedule and competed in 2007's Florida Regional event.

Fall 2007 found the team meeting in Christian Home and Bible School's Media Center. Efforts to secure a better-equipped workspace were unsuccessful and members were uncertain if the previous year's basement and the tools stored there were still available. Again, the team was allowed to use the church basement, but had a late build start. Team 1557 again succeeded, building a robust robot for the 2008 competition. This robot, fondly named "Royal Flush", additionally competed at Tempest 'N' Tampa and Robot Rodeo off-season events.

Despite this unsettled existence, the impact of the *FIRST* program on team members has been huge. Adam was a mathematically gifted autistic student new to the public school system. In 2006 his mother had him try the team, but she was unsure he could handle it. He became comfortable and contributed at meetings, even attending the regional competition. Robotics classmates saw him teased at school. They and their friends rallied around him. He gained confidence and the harassment stopped. After Adam finished school, he applied for a NASA job. His mother was told his gift for statistics AND his background with Team 1557 led to his being hired.

Justin is another success story. He was an angry, failing student ready to drop out of high school. He stayed when told enrollment was a team requirement. Interested in all areas of robot construction, Justin excelled in mechanical design and build. Mentors helped him through a difficult time and he received a leadership role as incentive. Justin improved his grades, finished high school and earned a DeVry scholarship. He is a positive, determined Electronic Engineering Technology student, Radio Shack employee, and popular team mentor.

Chas was a freshman when Team 1557 began. He was familiar with programming, but had never worked with micro controllers or C language. Under tremendous stress to "do it all" and quickly, he became an example of "grace under pressure". Although shy, being on the team gave him experience interacting and working with others. At his first competition, Chas reached out to a team that had a nonfunctioning robot and no programmer. He programmed it in their pit and had the robot running for competition. Teams have sought him out in 1557's pit area every year since. He generously assists all, despite having limited time with 1557's robots prior to shipment and often having to "program on the fly" at competition. Chas graduated in 2008 and is majoring in computer science at UCF. He also mentors Team 1557.

Students benefited when teacher Ron Stedelin joined the team. He took some of the burden from Chas' shoulders. In 2006, the two programmed the robot's camera. Ron was also working to have Mount Dora High School and the School Board add a robotics program to the curriculum. Chas used trigonometry to calculate distance for the camera. He thanked his trig. teacher, Mrs. McAllister, for teaching him something he was able to put into practical application. Delighted, she had Chas explain to the class his work. Mrs. McAllister began backing Ron's robotics program to the Math Department Head resulting in a new math class, "Engineering Math", at Mount Dora High. Increased support and funding for the robotics program also led to a class in Robotics and the purchase of LEGO kits for the class.

Math discussions are frequent at Team 1557's meetings. Students and mentors explore its applications on a white board used for working out equations. Students are overheard making comments like "Are you learning this stuff yet at your school? Do you know what year we start?" or "Wow, math is important, who knew?"

In addition to white boards, Team 1557 communicates through its group email system, website at <http://12voltbolt.com>, and Face Book group. A student published the article "How to join a F.I.R.S.T. robotics team" on the www.instructables.com website. The team has had an annually revised handbook since its rookie year. It explains team roles, the competition, and expectations. Included are a schedule, student contract, tool usage checklist and permission slip.

Members of the team have become proficient at writing press releases and public speaking. Team 1557 has been featured regularly in newspapers, including the Orlando Sentinel, Triangle News Leader, The Mount Dora Topic, The Daily Commercial, Tavares Citizen and The Angler. Local magazine coverage of the team includes Active South Lake, Pulse and Lake Magazines.

Team 1557 promotes the *FIRST* program throughout its community. It entered robots in the Mount Dora 4th of July and Eustis' George Fest parades. Mount Dora Bible School includes team displays in its Expo and chapel presentations. 1557 provided robot demonstrations and presentations to the Lake County School Board, County Commissioners, the Rotary Clubs of Mount Dora and Eustis, and the Golden Triangle Kiwanis Club. Florida State Senator Carey Baker has recognized the Team's efforts. In 2006, the team brought then Lake Schools Superintendent Anna Cowin to watch the Florida Regional. Recent meetings with current Superintendent Susan Moxley have been positive. Several businesses help the team. Lowes provides a 50% discount on materials. Charitable groups have provided grants. Families and members of the Eustis Kiwanis help feed the team during this season's build.

Renewed efforts to find the team a more suitable home were rewarded over the summer of 2008. The Lake Eustis Community Foundation agreed to house the team in a small downtown building, shared with a mandolin group, for the cost of utilities. Luckily, mandolin players require little more than chairs.

The "Lake County Robotics Team 1557 Clubhouse" was born. The small building is located on a major Eustis street, just steps from downtown. It is even equipped with a kitchen, bathroom & outlets! The team now pulls its robot-laden cart to downtown events, including the popular monthly "Street Fest". The hiss of pneumatics as Royal Flush's scissor lift engages has caused many to pause and learn more. Invitations to the team's Open House resulted in the attendance of Eustis City Commissioners. They expressed strong support for the program.

Team 1557 follows up on opportunities and works hard to strengthen its community partnerships. Members collect canned food for Healthy Start, a group assisting new

mothers. Lake County was formerly an agricultural area with a thriving citrus industry until hard freezes destroyed groves. Retail trade and the healthcare sector are now major employers. Few engineering & manufacturing companies are in the area. The team writes grant requests and meets with a variety of groups to find sponsors. Supporters are sent thank-you letters, kept updated, invited to team functions, and recognized with a certificate at an awards dinner.

The future looks bright for the *FIRST* program and Team 1557. It helped create, and is mentoring, rookie Lake County FRC Team 2797. Recently a Lake County Robotics Steering Committee was formed with team, community, and civic leaders on its Board. Its mission is to identify and recruit leadership, financial resources, and mentors to the applied engineering program while building awareness and support countywide. Its goal is to have a robotics program in every school within five years. Our community is recognizing the importance of engineers and innovators. It believes that an environment that helps students pursue science and technology careers will also attract new business and industry to the area.

FIRST Team 1557 *12 Volt Bolt* is submitting its first Chairman's essay. Just as NASA's historic milestones call for recognition, this team's 5th anniversary deserves attention. One cannot but wonder what changes the next five years will bring for Team 1557, *FIRST* and Lake County Robotics.

