

Downingtown's Robotics Team 1640 Wins the Rockwell Automation Innovation in Control Award at Annapolis



Robotics Team 1640 (Team Sab-BOT-age) was awarded Rockwell Automation's Innovation in Control Award at the *FIRST*'s Chesapeake Regional Competition in Annapolis, Maryland on Friday, 19-March.

In presenting this award, the Judges cited a number of innovative design and control features, including the team's unconventional approach to mathematics: $6 + 1 = 3$.

The robot (DEWBot V) possesses a novel dual-mode drive-train which alternates between a 6-wheel drive tank and a unique 3 wheel drive pivot mode. This is achieved by adding a 7th Wheel at the back center of the robot oriented at right angle to the 6 main drive wheels. When driving normally, the 7th Wheel is held above the playing surface and does not affect driving. When the need to brake or turn quickly arises, however, the Driver can almost instantly drop and activate the 7th Wheel, lifting the rear four traditional wheels off the playing surface. This drive-train provides exceptional agility with intuitive control.

The team designed a field-settable autonomous operation; the programmed mode which controls the robot during the initial 15 seconds of each match. Two switches on DEWBot can be set to provide 6 different autonomous routines, keeping opposing players guessing.

Team 1640 also employs the vision system to detect when the turret's shooter is aimed at an opponent's trailer. Blue lights around the turret flash when a target is acquired. The Operator also has a "*cry wolf!*" button to lead opponents to think DEWBot has a lock on them.



Clem McKown, Team 1640's Head Mentor remarked that "The team has shown remarkable ingenuity in coming up with solutions to *FIRST*'s 2009 Lunacy game challenges. The students have also learned to work together with the understanding that

innovation is a team effort. Each of the innovations cited by the awarding judges was the result of cooperative effort.”



FIRST Robotics Team 1640 is made up of students from Downingtown East and West High Schools, working together with mentors drawn from a range of technology disciplines. The team is based out of the Downingtown Educational Center in Downingtown, Pennsylvania. The team was founded in 2005 by Paul Sabatino, an Honors Physics teacher at Downingtown East. For more

information concerning Team 1640, contact the team at dewbotrobot@yahoo.com.

Team 1640 especially thanks its sponsors for making this success and this robot possible: Lockheed Martin, Kaloke Technologies Inc., The Downingtown Area School District, Bentley, ASME, The Burns Group, AGI, WorleyParsons, STEMRobotics.org and Techentourage.

FIRST (For Inspiration and Recognition of Science and Technology) was founded in 1989 to inspire young peoples' interest in science and technology. *FIRST* designs accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering and math, while building self-confidence, knowledge and life-skills.

