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EL SEGUNDO HIGH SCHOOL ROBOTICS TEAM TAKES 2ND PLACE IN RAYTHEON COMPETITION

Ability to harness the Ocean big part of the challenge

El Segundo, CA – February 20, 2009 – Electrical power generated in a fifty-five-gallon garbage can? Not a problem according to the team of El Segundo High School students Juan Sierra, Colin Elder, Stephanie Aceves and Zack Reed, who labored under the mentoring eye of El Segundo High School AP Physics teacher Christina (Tina) Hawley. Along with three other students from Dorsey High, the El Segundo students named their team the Voltage Vultures.

Raytheon Corporation, during their annual “Engineer’s Week Activity” played host to local high school teams up for the challenge of having a brain-twister foisted upon them with the hair-raising completion time of 90 minutes. As if that wasn’t enough to raise blood pressure, the only known clue going into this scenario was that it somehow involved “Green Ocean Power.”

“These kids are just amazing,” Hawley commented, an understatement at best with the gauntlet thrown down and the team under the time gun. “Gotham City has been plunged into darkness. They need electricity, so the challenge is to convert the up-and-down motion of waves into

energy which would in turn create electricity for the blacked-out city,” she continued with a rueful laugh. “There is one little glitch. Our kids haven’t covered fluid dynamics in AP Physics yet – that actually starts tomorrow!”

Not ones to let something as gargantuan as not having been exposed to the concept upon which the entire challenge was built stop them, the team spread out across the room for a “reconnaissance mission,” as Hawley put it. “Their orders were to go check out anything they could that would give them a leg up on the competition and come back with a game plan.”

Each team was given three tries to generate enough electricity to light Gotham City – but it was even more complicated than that. “They had to generate the electricity with the motion of the water in the fifty-five-gallon drums,” Hawley explained. “In other words, when the water was in an upward motion, a propeller had to capture that motion and transfer it to energy, but when the water was in a downward motion, the propeller had to reverse so it could capture all the energy in keeping with the true movements of an ocean wave.”

How’d the ESHS team fare? “Awful the first time out!” Hawley exclaimed. Despite their best efforts, they only generated 12-Volts on the upward motion and 0 Volts on the downward. On the second try they quickly adjusted for their earlier missteps and rocketed to 118-Volts on the upward motion but only 33-Volts on the downward motion. The final score was based on the average of the up and down voltages, so in a real nail-biter, the ESHS team cranked out an amazing 116.5-Volt average on their final try to win second place. “We really had a good time

working together to problem solve,” boasted Stephanie Aceves, “All of us were extremely proud when the Voltage Vultures took 2nd place!”

With trophies and medals awarded, the local high school teams were treated to a research and development, engineering and manufacturing tour of the Raytheon site, before breaking to go back to El Segundo High School – victorious at having tamed our ocean’s energy. According to Zack Reed, “It was quite fun to see the physics we’ve been learning in class applied to real engineering.” Sophomore Colin Elder agreed with Reed as he too pondered the application of what students are learning to the world beyond the classroom. “It is amazing how physics can be applied to solve the problems our generation will face.”

With nary a trace of seasickness in sight.