



Abstract

An event still recent in the minds of the US Navy is the terrorist bombing the USS Cole. On October 12, 2000 a suicide attack led to an explosion on the side of the USS Cole killing 17 and injuring 39 sailors. This incident the encouraged the US Government to increase its efforts in securing ports at home and abroad. An obvious solution is the increased patrolling of the harbor areas. This can be achieved through more human patrols, but humans are highly error prone and can be less observant then the alternative. The alternative being greatly discussed is the use of autonomous surface vehicles which can be more accurate and more consistently vigilant then their human counterparts. The Autonomous Surface Vehicle (ASV) is the solution to this catastrophe. This project is a competition-based design that uses the fundamentals of engineering and innovation to complete the given rescue mission at hand. The structure must follow certain rules and regulations given to the teams, compromising of students, faculty, industrial partners, and government officials, involved to successfully complete all the separate tasks for this ferry wreckage. The tasks include speed, course navigation, acquisition of targets, and judged using other performance requirements. Each team will awarded points for completely each task, and the team with the highest score will be declared winner of the competition. The team must come together and establish the best and most successful way to navigate and patrol the high seas of this mission. The vehicle must be capable of towing its payload, a lifeboat, to safety and dock while defending off potential enemies without being controlled by outside sources. The vessel must be within a certain weight limit as well as house all the device to provide its maneuverability. This competition acts as a prelude for full scale autonomous vehicles that will be the future of maritime security and possibly maritime technology.