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14. ABSTRACT The Skidaway Institute of Oceanography provided the RV Savannah in support of Project ID: 104458, a demonstration to increase effectiveness of mine hunting exercises, ordinance surveys, maritime archaeology and infrastructure inspection. The 21 day cruise was carried out in the Patuxent River and the Chesapeake Bay, and successfully met objectives.					
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Use of the research vessel Savannah in support of 2015 ONR S&T Demo, Project ID: 104458

James G. Sanders and John B. Bichy

The Skidaway Institute of Oceanography of the University of Georgia was approached and agreed to supply the Research Vessel Savannah to support work funded by the Office of Naval Research during the fall of 2015. The Office of Naval Research wished to support ship time and technical services for the following project:

1. 2015 ONR S & T Demo - Demonstrating mine warfare and airborne projects at Naval Air Station Patuxent River, Md., Dr. Robert Gibson, Naval Surface Warfare Center, Panama City Division, Principal Investigator – Project ID: 104548 “The objective of the demonstration is to increase effectiveness of mine hunting exercises, ordnance surveys, maritime archeology and infrastructure inspection.”

Accordingly, the RV Savannah transited to the Patuxent River, MD and the Chesapeake Bay in September, and was a platform for the Patuxent River 2015 Naval Surface Warfare Center's Office of Naval Research Science and Technology Demonstration (ONR S&T Demo), from 9 to 29 September 2015. Vessel operations were carried out in accordance to the Project design.

This was the largest demonstration of its kind to ever take place at PAX Naval base. The purpose of this project was to “accelerate the relevance and utility of emerging technologies by bringing together operators, developers, and stakeholders to jointly explore Autonomous Underwater Vehicle (AUV) and Unmanned-Surface Vehicle (USV) technologies in a common at sea environment.” A total of 6 countries, 20 vessels, and over 50 vehicles (AUV or USV) took part in this effort. The R/V Savannah science crew primarily consisted of members from Woods Hole Oceanographic Institution, Naval Surface Warfare Center Panama City, and Penn State's Applied Research Laboratory.

Two modified WHOI REMUS 600 vehicles were operated from the R/V Savannah, the Small Synthetic Aperture Minehunter III (SSAM III) and the Laser Scalar Gradiometer (LSG). Vehicles were deployed off the ship and set on daily missions to demonstrate and test their functionality within 3 sample regions (Patuxent River, Main Bay, Potomac River). The vehicles' mission in part was to locate underwater targets that were deployed in each sample area. At the end of the operational period, results from each vehicle were presented to all ONR S&T Demo participants including Navy Rear Admiral M. Winter. The R/V Savannah spent its last day recovering targets throughout the test zone with help from the Navy ship Grapple. The cruise was successful on multiple levels. From a science standpoint SSAM III and LSG performed well. Both the Chief Scientist Tim Molnar (IPS) and lead engineer Andy Girard (WHOI) were impressed with the R/V Savannah as an AUV operational platform and expressed plans to use the ship in the future, including a potential project in Puerto Rico. This cruise introduced the ship to new user groups and new waters as the ship had never sailed this far up the Chesapeake Bay.

The RV Savannah was able to accomplish the required objectives and returned to home port at the end of the project.