

USV Surveys Pearl Harbor Vessels



Using its H-1750 unmanned surface vehicle (USV), Deep Ocean Engineering, USA, has participated in the first comprehensive multibeam survey of the USS Arizona and the USS Utah at the World War II Valor in the Pacific National Monument in Pearl Harbor, Hawaii. During the week of 20 October 2014, company specialists together with representatives of R2Sonic, Autodesk and eTrac travelled to Oahu to conduct the surveys as a gift to the National Park Service.

In the months leading up to this survey, R2Sonic contacted Deep Ocean to utilise the H-1750 USV as an unmanned platform to operate its SONIC 2020 multibeam. Typically, these surveys are completed utilising a 2-3 manned vessel with an affixed multibeam but the survey site above the historic USS *Arizona* has a height restriction where a manned

vessel cannot navigate. The memorial building that straddles the USS *Arizona* makes for a low ceiling above the water at various tides. Couple that with the shallow depth of water above the sunken ship and a very tight set of survey vehicle characteristics is to be met. The H-1750 USV was the solution.

The survey's goals were reached and 100% high resolution sonar coverage was obtained of both sunken warships to replace the artists' rendition surveys from some 30 years prior. This will yield high quality measurements of the ship that can be repeated over time and from there, changes such as shifting, settling, and coral growth can be evaluated, something that was absent from the surveys from 30 years ago. It will provide a long term monitoring baseline, and a 3D scale model of the USS *Arizona* will be created and used for display purposes at the memorial site.

Image: The low ceiling of the USS Arizona Memorial building made the H-1750 suitable for this survey. Image courtesy: TJ Kneale.