



Slocum Gliders - Advances in the Technology

Clayton Jones and Ben Allsup

United States (cjones@teledyne.com)

"The projects that I have always liked best are the ones conceived on the spur of the moment by an inquisitive individual. We try to reserve twenty percent of our Slocums to pursue such sudden inspirations. They are generally the most exciting; they evolve in unexpected ways and reveal new dimensions of the unknown about the ocean."
Henry Stommel, *The SLOCUM Mission*, 1989.

Abstract

Two decades have passed since Stommel's futuristic article popularized Doug Webb's underwater glider concept. Stommel's imagination was sparked by the opportunity gliders provided to broaden our understanding of the oceans and perhaps even more important to him, by the potential it had to draw peoples interest and excitement for ocean dynamics.

Slocum Gliders have helped to redefine range and endurance in the world of AUVs, and as mobile sensor platforms have made a significant impact on our ability to better see into the world's oceans.

Teledyne Webb Research will provide an overview of the latest Slocum G2 design; the hybrid thruster, increased buoyancy pump displacement, latest sensor suites, and an update on the energy harvesting Slocum Thermal E Twin. Three main mission objectives will be reviewed: polar regions, urban shelves, and long duration transects approximating the course of the Challenger expedition of 1872-76.

Having made the first ever oceanic crossing by an AUV, Slocum glider RU27 is presently on display at the Smithsonian Ocean Hall. Another Slocum G2 named Silbo, having completed the Iceland - Azores - Canary Islands legs, is now on its way across the Southern Atlantic to Brazil and continues to draw together the International Consortium of Ocean Observing Labs (I-COOL) focusing on international and educational outreach.

With the advent of procurements of Slocum gliders in large numbers by both the US Navy and the Ocean Observation Initiative (OOI) Coastal and Open Ocean we are on the cusp to realizing Stommel's vision of fleets roaming the oceans.