

MVCO WAVES

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The Martha's Vineyard Coastal Observatory is thriving and has expanded to include the CBLAST Air-Sea Interaction Tower (ASIT). The Office of Naval Research is sponsoring the Coupled Boundary Layer Air-Sea Transfer Experiments. The main objectives of this program are to improve our understanding of ocean-atmosphere interactions in low to moderate winds and to improve marine weather forecasts and ocean circulation models. Toward these objectives, the ASIT will be instrumented from top to bottom with sensors capable of directly measuring momentum, heat, and mass exchange between the atmosphere and ocean.

Construction began in August and was completed in October by RDA Construction of East Boston. The Stommel Fisheries' vessel Nobska helped to install the fiber optic cable in the last week of September, which was then connected to the main MVCO node at the 12m contour in early October. The construction process was fascinating and used some "really big toys." There is a pictorial diary on the new web page at:

<http://www.whoi.edu/science/AOPE/dept/CBLAST/ASIT.html>

The completion of the ASIT, the connection to the observatory, installation



CBLAST ASIT

Water Depth: 15.6 m
Platform Height above water: 10m
Platform: 4.2m x 3.1m
Catwalk: 1.2m x 4.6m
Dock: 1.2m x 1.2m
Met Mast: 10m
Top mast above water: 20m

of the power system, the electronics and data interface has been progressing throughout the month and culminated this week.

Power up and network tests were triumphal after a Herculean effort by our incredibly dedicated team. Scientists, technicians, engineers, programmers and divers were supported by our machine shops, rigging shop, buoy lab, CIS, administrative assistants, procurement and development departments. The diversity of skills our staff brings to the task is truly remarkable. The very long days, rough seas and cold wet rides home have paid off with the opening of

this new resource that will provide a stable, motion-free research platform.



IMPORTANT USER NOTICE

Users should check the web page for the latest information on changes, due to system upgrades, to the connectors and locking sleeves needed to install instruments at MVCO.

http://www.whoi.edu/mvco/plugging_in/plugging.html

Any questions about the changes should be directed to Marga McElroy at ext. 2237 or emailed to mmcelroy@whoi.edu.



Annual Maintenance

The 12m Node was recovered in late May for annual maintenance and redeployed in July, thanks to our faithful dive team. The annual maintenance, unfortunately, dragged on beyond the anticipated three weeks; however it was worth it to install some important upgrades. We learned that the mating force required for the divers to install connectors was too much for the bulkhead mounts so Mike Purcell designed new locking sleeves that not only prevent the divers from twisting and bending them but actually pull the connector on and off by simply screwing in the sleeve. This will make a big difference in the future, both preventing damage and making the divers' job easier, as will the sliding side panels and

super-sized wing nuts for securing instrument mounting brackets. We used a variety of anti-fouling paints this time in hope of reducing the hydroid colonies at least a little.



New Users

New users are diversifying the research program into the fields of acoustics and biology, as well as fine scale sediment transport. Peter Traykovski, Lary Mayer and associates have completed an extensive bathymetric multi-beam sonar survey and vibro-coring project to further define the bottom diversity.

Rob Olson, Heidi Sosik and Alexi Shalaponok have deployed their in-situ flow cytometer at the observatory. They are studying cell size and pigment florescence of individual phytoplankton cells to develop a better understanding of population dynamics and growth rates.

Jim Preisig and associates from Scripps Institute of Oceanography in San Diego and the Institute of Ocean Sciences in British Columbia are commencing the SPACE program (Surface Processes and Acoustic Communications Experiment). The program will study the formation and evolution of bubble clouds in the water and their impact on acoustic communications. They will be deploying some innovative instrument packages including surface following instrument frames, a horizontal sub-surface mooring, and a blimp, which will be tethered between a spar buoy and the ASIT.