

The *Ohmsett* Gazette

Leonardo, New Jersey

Test with oil. Train with oil.

Fall/Winter 2007

New Electro-hydraulic Wave Generator System Installed

Ohmsett, The National Oil Spill Response Test Facility, located in Leonardo, New Jersey, is the only facility in the world where full-scale oil spill response equipment testing, research and training is conducted in a marine environment with various oil types under controlled wave conditions.

A main feature of the Ohmsett facility is an above ground concrete test tank containing 2.6 million gallons of crystal clear water from the Sandy Hook Bay brought to open ocean salinity through the addition of sea salt. Spanning the width of the tank are three bridges, which travel along the length of the tank on rails, driven by two variable speed electric motors.

Waves in the Ohmsett tank are generated by an electro-hydraulic driven paddle. The bridge system, in conjunction with the wave maker, is used to model at-sea towing conditions or oil recovery operations in currents and waves.

In June of 2007, Ohmsett's 30-year-old wave generator system was demolished and

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Testing the Draft ASTM Skimmer Test Protocol at Ohmsett



A draft ASTM skimmer test protocol was tested to resolve issues relating to the significance of slick thickness, oil recovery measurement methods, and minimum tank area required for the test.

Over the past two years Ohmsett engineers have been working with the American Society for Testing and Materials (ASTM) F20 Committee on Hazardous Substances and Oil Spill Response to draft a test standard to more accurately determine skimmer nameplate capacity. It is recognized that the current method is arbitrary and seldom reflects the actual performance of a skimmer, as a system, to collect oil. As a result, the U.S. Coast Guard derates nameplate capacity by as much as 80% in esti-

imating the Effective Daily Recovery Capacity (EDRC).

“The goal of this standard is to develop a test that would establish a realistic nameplate capacity,” said Ohmsett Senior Test Engineer Dave DeVitis. “The test should be simple, inexpensive, and yield reproducible data that can be used to compare skimmer performance.”

During July and August 2007, researchers from SL Ross Environmental Research,

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New Wave Generator

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the installation of a modern electro-hydraulic system began. A new generator shelter was also constructed with improved ventilation, heating, and lighting, to house the new system.

Atlantic Industrial Technologies (AIT) of Islandia, New York, was contracted to perform the upgrade. They provided a new hydraulic power system, including pumps, motors, reservoir, drive motor, all the ancillaries, a Programmable Logic Controller (PLC), and electrical work.

"With the new motor drives and controls, the wave generator system now has improved functions such as computer control for more consistent test conditions," said Bill Schmidt, Ohmsett program manager. "This gives us the ability to operate the wave maker by a touch screen from the main bridge as well as the control tower."

The project was completed in September 2007 in time for fall research testing and oil spill responder training courses.



The new wave generator at Ohmsett is computer controlled for more consistent and precise test conditions.

Skimmer Protocol

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Ltd. were at Ohmsett to assist in testing the draft standard. "The main objective in testing the protocol was to resolve issues relating to the slick thickness for a valid test," said Steve Potter of SL Ross and head of the ASTM committee. "We were also looking at measurement methods, and the minimum tank area required for the test."

During the tests, three generic skimmers types - disk, drum and weir - were used to measure the oil recovery rates under simulated conditions. The researchers focused on the testing methods, rather than the results of the individual skimmers.

As oil recovery rates depend on the viscosity of the spilled oil, it was planned that two oils would be used: an ASTM Type I oil (Hydrocal 300, with a viscosity of approximately 200 centistoke (cSt) at 20°C); and an ASTM Type III oil (Sundex 8600, which historically has had a viscosity of 20,000 cSt at 20°C, and for this test had a viscosity of 13,000 cSt at 20°C). The skimmers had no trouble with the Hydrocal, but

only the weir skimmer performed adequately with the heavier Sundex. As a result, the Sundex oil was replaced with a lighter oil, Calsol 8240, which has a viscosity of approximately 2,100 cSt at 20°C. Skimmers were tested in all-oil conditions, as well as with an oil-water interface.

The skimmers were tested in an 8 ft. x 8 ft. x 2.5 ft. (1000 gallon) portable open-top tank on the deck of the Ohmsett test basin. Oil collected by each skimmer was pumped to an overflow tank until steady state was achieved, then flow was diverted for 1 to 3 minutes, depending on skimmer recovery rates, to collection tanks located above the skimmer. Samples of the collected oil were analyzed to determine water content. These values were used with the collection volumes and collection times to calculate recovery rates and recovery efficiencies.

One recurring question about the test protocol is how much of a difference is there between testing in all oil and testing in an oil layer over water. Tests were conducted

with the test tank filled with oil only, as well as various thicknesses of oil on top of a water layer. When testing with the oil water interface, the water depth was typically 20" and the oil layer varied from approximately 1" to 6".

Results from these tests were presented to the ASTM F20 Committee meeting in October 2007 in Tampa, Florida.

The draft test protocol was revised based on the Ohmsett test results and in December 2007 was sent to the ASTM committee for final balloting.

Visit our website at
www.ohmsett.com
to view the Ohmsett testing
and training schedule.

To schedule a test at Ohmsett
call 732-866-7183 ext. 11

Ohmsett Staff Attends the Inaugural Clean Pacific Conference

In September 2007, Ohmsett staff members and scientists from Minerals Management Service (MMS) attended the Clean Pacific Conference & Exhibition. Seattle, Washington with Mount Rainier, Pike Place Market and the Space Needle provided the back-drop for the inaugural year of the conference.



Clean Pacific highlighted the continued progress and future environmental challenges in the Pacific area and around the

world. The public in the Pacific area takes a strong interest in protecting the environment while supporting Pacific Rim commerce.

Over 100 of the world's leading suppliers of emergency planning & response, security, environmental, oil & hazmat spill, marine fire & salvage equipment & services had displays on the exhibit floor.

Ohmsett Program Manager Bill Schmidt, Mechanical Engineer Paul Meyer, and Marketing Specialist Jane Delgado greeted visitors at the Ohmsett booth, where they exhibited the latest in full-scale dispersant effectiveness testing and research conducted at Ohmsett, as well as the current oil spill responder training courses.

The keynote speaker was Tom Fitzsimmons, Chief of Staff for Washington State Governor Christine Gregoire. He spoke about the Puget Sound Partnership, a state agency established in 2007 to lead efforts to protect and restore the health of the Puget Sound by 2020. According to Fitzsimmons, the focus is to maintain the Puget Sound as place where people can fish, swim and dig.

Fitzsimmons went on to say that oil spill prevention demands public vigilance, through advocacy and activism, and corporate diligence. He put forth a call to action that once a spill occurs, we must work together as a team and respond in a synergistic way. He said that the Clean Pacific Conference is a way to renew friendships, build new strategic relationships and partnership.

The next Clean Pacific Conference and Exhibition will be held on September 15-16, 2009 in Portland, Oregon.



Top: MMS and Ohmsett Booth staff at the Clean Pacific Conference and Exhibition. From left to right: Greg Sanders, MMS; Craig Ogawa, MMS; Theresa Bell, MMS; John Romaro, MMS; Jane Delgado, Ohmsett; Paul Meyer, Ohmsett, Joe Mullin, MMS; Bill Schmidt, Ohmsett.

Bottom: Mount Rainier, Washington, as seen from Paradise, Mount Rainier National Park.

Oil Spill Responders Train at Ohmsett in the Fall of 2007

Training was the focus in the fall of 2007, as the Ohmsett facility hosted classes for the U.S. Coast Guard (USCG); National Spill Control School Texas A&M University (TAMU); ConocoPhillips; and Alaska Clean Seas (ACS).

Ohmsett's training facility includes a 50-seat classroom with state-of-the-art audio-video equipment where companies can conduct sessions to complement tank exercises.

In September, the USCG conducted their fourth and final training session for the year. The Oil Spill Response Technician (OSRT) training emphasized classroom exercises and practical hands-on use of oil spill equipment in realistic conditions.

Classroom training focused on general USCG oil spill response technologies, safety briefings, and specific SORS/VOSS response equipment systems. Afterwards, students had the opportunity to experience real oil recovery operations using USCG equipment in the tank where they practiced recovering oil in conditions that simulate an actual spill.

Also in September, TAMU instructors came to Ohmsett for a week-long Oil Spill Management course, where spill responders learned the skills necessary to make quick and informed decisions during spill incidents. They received hands-on spill response equipment handling and recovery training using full-scale equipment with real oil in the Ohmsett tank.

National Oceanic and Atmospheric Administration (NOAA) Scientific Support Coordinators Ed Levine and Frank Csulak also presented Natural Resource Damage Assessment (NRDA) strategies and demonstrated the use of NOAA's Automated Data Inquiry for Oil Spills (ADIOS) modeling software.

In addition, students learned about the use of Geographic Information Systems (GIS) and Global Positioning Systems (GPS) applications in oil spill response.

The training session culminated with a table-top exercise that incorporated the training modules presented during the week.

The activities continued in October when ConocoPhillips held their corporate Oil School Incident Management Assessment Team (IMAT) training at Ohmsett. The training consisted of classroom discussions, a pre-

sentation by Dennis McCarthy of Clean Harbors Cooperative (CHC), and dispersant application demonstration in the Ohmsett tank conducted by Tom Coolbaugh from ExxonMobil.

The objective was to provide ConocoPhillips Corporate Oil School with management training and initial experience or refresher exercises on the set-up, opera-

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Left: U.S. Coast Guard OSRT training emphasized classroom exercises and practical hands-on use of oil spill equipment in realistic conditions.

Right: Ohmsett Technician Don Snyder assists TAMU students during the hands-on training.



Students from the ConocoPhillips corporate IMAT practice set-up, operation and recovery of equipment using real oil during the hands-on training at Ohmsett.

High Technology High Student Mentored at Ohmsett

When Joe Meyer, a senior at High Technology High School, started looking for a position for his mentorship program, he told his program advisor Pam MacNeill, that he wanted something out of the ordinary. With his high aspirations in the engineering field, MacNeill knew she had to place Joe somewhere challenging and distinctive. She directed him to Ohmsett.

High Technology High School, located on



Ohmsett intern Joe Meyer.

the Brookdale Community College campus, has a long standing relationship with Ohmsett, bringing students to the facility for tours and providing Ohmsett staff with summer interns. It is a pre-engineering high school that prepares students going on to college for engineering degrees.

Working with his on-site mentor, Ohmsett Engineer Alan Guarino, Joe started the program in September and has been documenting tests with photos, editing videos clips of tests and observing different tests to see what is being done in the field of oil spill research.

"I wanted something that you wouldn't find someone doing everyday," said Joe. "This is a very unique mentorship position."

Joe had the opportunity to help Alan on a research project with a major oil company. "I worked on [a test] where I took measurements and created a computer rendering using Auto Desk Inventor."

These measurements were used to design an apparatus for a test that took place in the Ohmsett tank in late October, through early November.

Joe will complete his mentorship position at Ohmsett at the end of December. As a recipient of the Rensselaer Polytechnic Institute (RPI) Rensselaer Medal Award, his goal is to go on to an engineering school in the Northeast with a potential major in material science engineering.

"I'm interested in nano technology because there are a lot of applications for that. The best way to get into it is through material engineering," explained Joe.

The Rensselaer Medal is awarded to high school students who have distinguished themselves in math and science. It carries with it an annual scholarship and is guaranteed for a maximum of four years to each medalist who is accepted by and enrolls at RPI.

Fall Training

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tion, recovery, maintenance, and decontamination of recovery equipment using real oil.

The exercises were conducted in the Ohmsett tank using an assortment of skimmers and pumps provided by CHC to clean up real oil.

Also in October, ACS brought spill responders to Ohmsett for two separate week-long oil spill response training sessions. The training programs gave responders the opportunity to practice hands-on oil spill equipment set-up, recovery, maintenance and decontamination.

In this custom-designed training, ACS provided the instructors, course curriculum, and training materials.

During hands-on training students used oil herding methods and advancing skimmer recovery equipment exercises. Oils used during the exercises included, heavy and light, and diesel fuel.



During hands-on training, students from the Alaksa Clean Seas training course used advancing skimmer recovery equipment with real oil in the Ohmsett tank.

17th Annual Clean Gulf Conference - Something for Everyone

Every year the Clean Gulf Conference and Exhibition brings together the environmental, emergency planning and response, oil and hazmat spill prevention, marine fire and salvage, and maritime security communities for an unparalleled networking opportunity. This year was no exception. On November 14-16, 2007 representatives from each of these communities gathered at the Tampa Convention Center in Tampa, Florida to collaborate on integrated and leading-edge strategies that constitute today's environmental emergency response and security plans and practices.

Over 170 exhibitors were on the exhibit floor to discuss their products and services geared toward the emergency or response communities. This year was the largest group of exhibitors ever. Ohmsett Program Manager Bill Schmidt and Marketing Specialist Jane Delgado, greeted visitors at the Ohmsett booth and provided them with information on testing, training and research opportunities at Ohmsett. Premiered at the booth this year was the brand new 2007 Ohmsett Video. The re-mastered video highlighted the upgraded capabilities for dispersant research, cold weather and ice testing, as well as hands-on oil spill response training. It also featured the new lab located in the multi-use building.

Pre-conference workshops emphasized real world response solutions with sessions focusing on Spill Response, National Incident Management System (NIMS) and Incident Command System (ICS), Working with the Media during an Emergency Response, and Applied Research for the Spill Response Community. Joe Mullin, oceanographer for Minerals Management Service (MMS) presented a slide show with video clips of current oil spill response research being conducted at Ohmsett. He provided an overview and update on Ohmsett's capabilities and renovations made over the past year. The video clips featured dispersant research, Effective Daily Recovery Capacity (EDRC) testing, remote sensing, and grooved skimmer research.

Also, new to Clean Gulf was the Inaugural EPA Region 4 Chemical Emergency

Conference. The conference was established as an annual forum for the discussion of topics and issues about chemical emergencies.

The next Clean Gulf Conference and Exhibition will be held in San Antonio, Texas October 29-30 2008.



Ohmsett booth staff sports the newest marketing promotional item - Ohmsett Tattoos.



Ohmsett Program Manager Bill Schmidt met with Susanne Horner of Clean Water Solutions to discuss testing opportunities at Ohmsett.

Visit Us At These Conferences!

International Oil Spill Conference 2008

May 4 - 8, 2008
Savannah, Georgia
Booth #700

Clean Gulf Conference & Exhibition

October 29-30, 2008
San Antonio, Texas
Booth #504

Community Relations

MMS Budget Office Visits Ohmsett

On June 7, 2007 eight members from the U.S. Department of the Interior's (DOI) Minerals Management Service (MMS) Budget Office visited the Ohmsett Facility. They were shown a video presentation and given a tour of the facility by Joseph Mullin, an oceanographer with the MMS Engineering and Research Branch.

After the presentation and tour, the group went out to the Ohmsett test tank to observe the U.S. Coast Guard National Strike Force Oil Spill Responder Technician (OSRT) training exercise. In addition, Ohmsett engineers conducted a demonstration on the operation of a weir Skimmer.



Joseph Mullin, oceanographer for MMS, explains to the Budget team how a skimmer system is designed to pick up oil during a spill.

WW II Veterans Tour Ohmsett

It was a Navy reunion tour at Naval Weapons Station Earle (NWSE) for 16 crew members of the World War II destroyer escort USS Jeffrey DE-63 whose port of duty was NWSE. As part of their tour of NWSE Waterfront, the group visited Ohmsett where Ohmsett Engineer Paul Meyer gave them a tour and answered questions about the facility. For those able to climb to the top of

the Ohmsett Control Tower, they had the opportunity to see the breath-taking view of the New York City skyline.

During World War II, the USS Jeffrey and its crew performed convoy duty from New York City to Ireland. The crew members were responsible for removing all ammunition at NWSE in Leonardo, New Jersey and reloading it to go overseas.

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New Ohmsett Video Now Available

A new Ohmsett marketing video on CD is now available. The video, with updated narration and music, highlights the new capabilities developed at the Ohmsett facility over the last couple of years.

Testing video footage illustrates Ohmsett's upgraded capabilities for dispersant research, cold weather and ice testing, as well as the new permanent lab.

The video also features the new Ohmsett training programs offering classroom instruction and hands-on oil spill response exercises using full-scale equipment with real oil.

The video is now available in mini-CD format. To request your copy of the 2007 Ohmsett Video, please call Jane Delgado at 301-230-4565 or e-mail jdelgado@marinc.com.

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