

The *Ohmsett Gazette*

Leonardo, New Jersey

Train with oil. Test with oil.

Fall/Winter 2002

Building Renovations Yield Brand-New Workspace for Ohmsett

Recently completed major renovations to a building at the Ohmsett complex are the latest in a series of upgrades at the facility in recent years.

In late 2001, the Navy vacated Building R-24 in the Ohmsett complex at Naval Weapons Station Earle, making the approximately 4000 square foot building available for Ohmsett use.

The reconstruction has transformed Building R-24 into a multi-function space which includes an eighty-person conference and training center equipped with the latest in multimedia capabilities.

Project planning began in mid-May when the original design plans were presented to Minerals Management Service. Renovations began in mid-June.

The new facility accommodates many more customers and allows more diverse activities than ever before.

Ohmsett staff and outside contractors performed the extensive renovations to the building. The building was gutted, and reconstruction work included everything from rewiring and roof replacement to adding an attractive new kitchen area and restrooms.

As of early October, the building was

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MMS Director Johnnie Burton Visits Ohmsett



MMS director Burton makes her presentation in the Ohmsett conference room.

Director of the Minerals Management Service, Johnnie Burton, honored Ohmsett with a visit on October 17, 2002 to give a presentation on her agency's role in American energy production.

Burton's Ohmsett appearance was part of a series of events hosted by MMS around the country to observe National Energy Awareness Month.

Advanced placement science students from local Manasquan High School, representatives from local, state, and federal government agencies, and oil spill response professionals attended the Ohmsett event.

A tour of the Ohmsett facility, lunch, and

a question and answer period followed Burton's presentation.

In her speech, the director recognized the contribution that the Ohmsett facility has made to the safe production of energy in the country.

"The Minerals Management Service is pleased to be able to offer this facility to industry and to our own scientists to test equipment and theories in a real world environment," she said.

"We think Energy Awareness Month is the perfect time to highlight the good work that goes on here."

The director acknowledged that America

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University of Washington Conducts Wave Study

The University of Washington, in conjunction with the University of Massachusetts, and the Naval Research Laboratory, came to Ohmsett in April, August, and October, 2002 for three phases of a wave research project.

The three groups are conducting research on a wave footprint area that will set the benchmark for the evaluation of future wave spectra.

Ohmsett technicians and engineers were pleased to help with this unique project, known as the Polarimetric Emissivity of Whitecaps Experiment (POEWEX).

The purpose of the Ohmsett studies was to measure the azimuthal dependence of the polarimetric microwave radiometric emissivity of breaking waves.

Ohmsett's wave generating capabilities and repeatability standards make the facility an ideal location for this type of wave research.

In the first phase of research at Ohmsett in April, UW project coordinator Bill Asher and other representatives from the three groups conducted an initial wave demonstration and examined the facility's capabilities.

During Phase 2 of testing at Ohmsett,

researchers tested a preliminary artificial beach, or "reef" designed to create a specific wave condition.

When the group returned to Ohmsett in October for Phase 3, researchers conducted quantitative tests.

Using instrumentation placed in the basin and at the main bridge, researchers examined wave turbulence, breaking waves, amount of entrained air, water pressure, and bubble action.

Phase 3 testing and data collection took over two weeks, from September 30 through October 18, 2002, to complete.



The artificial reef is lowered into the test basin.



Ohmsett technicians Don Snyder and Dave Knapp plunge in to help out.



A view of the sensor.

Navy SUPSALV Comes to Test and Train

The Navy came to Ohmsett in May, 2002 to test and to train, intent on honing their spill response readiness capabilities.

Navy Supervisor of Salvage (SUPSALV) researchers tested the Marco Class V skimmer with several types of light oil recovery belts, first testing with one belt at several speeds to determine the best skimming speeds.

The May testing series was part of a skimmer evaluation project conducted by SUPSALV. The Navy is currently evaluating oil spill cleanup equipment under conditions simulating those found during oil spill response operations at naval shore facilities.

The aim is to quantify skimmer light oil recovery belt performance, examining recovery and throughput efficiencies at vary-

ing speeds and in different surface conditions with low viscosity oils.

After a week of testing, Navy response personnel spent a second week training in the Ohmsett basin using several types of skimmers--including Skim-Pak skimmers, Rope Mop skimmers, Mini-max skimmers from the Salvage Support skimmer system, and a POL van system.



Rope skimmer mopping the oil.



Vacuuming the oil off the water.



The Marco skimmer in the test basin.

Director's visit

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is in the midst of a national debate on the appropriate use of our energy resources.

"As our society flourishes, the demand for energy increases," she said. "Convenience, comfort, security—they all come at a price: a certain amount of risk we have to take to produce the energy, and the costs of that production."

Burton went on to talk about the rare, but real, possibility of accidental oil spills and the need to avoid damage to our natural resources.



Johnnie Burton and other officials on the Ohmsett bridge.



Manasquan High School students and teachers.

"That is why we need to be prepared to respond fast and effectively to an accidental spill," she said.

"This is where Ohmsett plays a crucial role. This facility helps industry and MMS prepare for accidents in various conditions."

The director spoke of Ohmsett-tested oil spill cleanup methods which were recently used to clean up a spill when Hurricane Lili damaged an oil drilling platform off the coast of Louisiana in September, 2002. (See "Hurricane Lili and Offshore Oil Facilities" below.)

"More than a third of that oil was quickly recovered, thanks to methods tested at Ohmsett," she said.

Burton emphasized that American waters offshore are a precious national resource, vital to the nation's energy and economic security.

"This is why it is crucial to keep Ohmsett in top shape and to continue to offer this facility as a learning and testing center," she said.

"Having state-of-the-art oil spill cleanup methods at the ready—all the time—is a critical aspect of offshore energy exploration."



Ohmsett program manager Bill Schmidt accompanies Johnnie Burton.

Hurricane Lili and Offshore Oil Facilities

When Hurricane Lili, preceded by Tropical Storm Isidore, swept through the Gulf of Mexico in September, 2002, only six platforms and four exploration rigs, out of 800 offshore oil drilling facilities, were seriously damaged.

"There were no fatalities or injuries to offshore workers, there were no fires, and there was no major pollution caused by the hurricane," said Minerals Management Service director Johnnie Burton.

Remarkably, only nine reported incidents of oil spill pollution resulted from the hurricane. All but one were spills of less than three barrels.

The largest spill was at an oil facility 18 miles offshore Louisiana, where 350 barrels of oil were spilled.

There, emergency spill responders recovered a third of the spilled oil. The remainder of the spill dispersed through weathering.

The well has since been capped.

"The minimal effects of the hurricane to

oil and gas facilities were, in part, attributable to the design standards MMS has established through its regulations," Burton said. "Current design standards require industry to design facilities to withstand 100-year

storm criteria."

"Operators in the Gulf demonstrated a superb level of preparedness in advancing technology and in responding to this catastrophic event," she said.



BP production platform A, Eugene Island, Gulf of Mexico--after Lili.

Coast Guard Investigates Sample Collection Buoy

The gray light of dawn reveals a sizable oil slick floating on the surface of the harbor waters. Which of the tankers anchored nearby is responsible?

Some day, authorities may be able to track down those responsible for illegally spilled oil and hydrocarbons with the help of an automated oil sampling buoy designed by InterOcean Systems.

The US Coast Guard tested the device, a plastic tube that floats horizontally on the water's surface, at Ohmsett in June and August, 2002.

Surface water enters the tube, where any free hydrocarbons that may be present adsorb to a Teflon mesh to be collected for analysis.

Analysis of the collected sample may allow authorities to "fingerprint" oil spills, and track them to their source.

The oil sampling buoy can be tossed and retrieved from a platform such as the shore, a vessel, or a bridge, or deployed from a hovering aircraft.

An onboard global positioning system transmitter allows for subsequent location and retrieval of the buoy.

The buoy was tested in the Ohmsett basin using three types of oil of varying viscosity, and in three surface conditions from calm water to harbor chop.



Preparing a sensor.

MMS Conducts Dispersant Removal Tests

Minerals Management Services contracted SL Ross Environmental Research, Ltd., MAR, Inc., and Alun Lewis Oil Spill Consultancy to address the final issue in dispersant effectiveness testing in a July, 2002 test at Ohmsett.

No doubt about it: data yielded by two years of studies show that full scale dispersant effectiveness testing is feasible in the Ohmsett test basin.

And, testing has proven that dispersed oil can be removed from the Ohmsett test basin water with a diatomaceous earth/cellulose mixture, leaving basin water clean and ready for the next test.

Almost ready, that is.

While the dispersed oil can be effectively removed from the basin water, removing the dissolved dispersants is another matter.

Before a new test can take place in the basin, basin water typically must be treated for long periods of time using expensive removal methods—or the basin water must remain stagnant to allow natural bioremediation to occur before it is emptied into Sandy Hook Bay.

Both processes are ponderously time-consuming and expensive.

Researchers believe that powdered activated carbon (PAC) is the key to faster, more efficient dispersant removal.

SL Ross first conducted a lab-scale study with dispersants and PAC at their Ottawa, Canada lab using Ohmsett test basin water shipped to them.

Then, scientists and engineers converged at the Ohmsett basin to conduct a pilot-scale test, mixing PAC with water taken from the Ohmsett test basin under realistic basin-side conditions.

It appears that a fifteen minute contact time is all that is required to remove 90% of the dispersant, even in the presence of some dispersed oil droplets.

Furthermore, researchers found that skimming the surface, and the Ohmsett leaf filter, were able to efficiently remove PAC from the water.

According to Ian Buist of SL Ross, all objectives were met during the July test series.

Dispersant effectiveness test results show that dispersant concentrations can reach 400 ppm before having a noticeable effect on

floating oil dispersion.

In the Ohmsett test basin, dispersant concentrations of 400 ppm equate to about 1,040 gallons of dispersant. This means that researchers can perform a number of consecutive dispersant experiments in the test basin without concern that dispersant concentrations might reach a level that could skew dispersant effectiveness results.

MMS has provided funding for SL Ross and SAIC-Canada to continue this research in the winter of 2003, following cold water dispersant effectiveness tests.



Ohmsett technician Dave Knapp and Ian Buist of SL Ross mix dispersants.



Chemist Alun Lewis takes samples.



Dye, simulating dispersant, is distributed through the basin water.

MMS Evaluates Containment Boom Characteristics

Under contract by Minerals Management Service, SL Ross Environmental Research, Ltd. engineer Steve Potter was at Ohmsett in August, 2002 to conduct oil spill containment boom tests.

The purpose of the MMS-contracted research project was to determine the effects of buoyancy-to-weight ratio and boom draft on boom performance.

The Ohmsett test closely followed the guidelines set by the recently composed ASTM standard F2084 for boom testing.

The ASTM F2084 standards are based primarily on test protocols from Ohmsett.

Ohmsett staff members were instrumental in developing methodologies and parameters adopted within ASTM F20 (Hazardous Substances and Oil Spill Response.)

With support from industry professionals, the protocol has been refined into a valuable standard.

Devising a method to accurately measure the buoyancy-to-weight ratio, of concern to buyers and users of containment boom, was a key part of the Ohmsett test program.

The ASTM boom subcommittee has recently introduced buoyancy-to-weight measurement as a work item.

Subcommittee members will review a draft standard, now being prepared by Ohmsett employees, at their February, 2003 meeting.

The lower end of the ratio researchers used for testing is considered to be the minimum for effective containment in calm water.

The upper end is double the value recommended by ASTM and USCG-published boom selection criteria.

Researchers manufactured a test boom to be modified for varying draft depths and buoyancy-to-weight ratios. A second manufactured boom 12 inches high tested the effect of boom draft on boom performance.

Four buoyancy-to-weight ratios and two boom drafts were evaluated in calm water and different wave conditions.

After analysis of the Ohmsett test data, SL Ross researchers will present a technical paper on the study to an appropriate oil spill conference or technical seminar.

Building Renovations

Continued from page 1

complete. Comfortable and functional offices and conference rooms now stand ready for use. The training center includes office space for use by instructors.

The all-new Building R-24 boasts new floors, ceilings, walls and lighting, as well as fresh paint both inside and out. A new HVAC system services the entire building, and state-of-the-art communication lines snake throughout.

An engineering study currently underway investigates the possibility of making the conference room available for video-



Before: the conference room prior to renovations.



After: the conference room today.

conferencing, web feeds, and distance learning.

A number of meetings and conferences, including a presentation by MMS director Johnnie Burton, have already taken place in the building since renovations were completed.

The US Coast Guard will be the first to use the new training facilities when they meet for their OSRT course in May 2003.

The Ohmsett staff welcome all for a building tour, or to reserve space for a meeting.



Ohmsett's Bob Stewart adds buoyancy.



The boom is evaluated in waves.



Ohmsett staff members Ed Fitzgerald and Don Backer ready a test tank.



Steve Potter of SL Ross makes adjustments.

News Briefs

Oil Stop Looks at Bubble Barrier System

Oil Stop, LLC came to Ohmsett in June, 2002 to evaluate their bubble barrier system's ability to contain and "herd" oil.

Oil Stop's system consists of a submerged tube that releases a screen of air bubbles.

The air bubbles create an area of disturbed water designed to block the movement of floating liquids.

The system works best in calm waters with relatively thin oil layers.

The barrier's horizontal manifold was designed to be 63 feet long for the Ohmsett evaluations in order to provide bubbling coverage the entire width of the test basin.

Using risers attached to the main bridge, researchers arranged the barrier system in various configurations.

Once airflow to the bubbler was established, the barrier was moved toward a slick consisting of small volumes of medium viscosity oil to test the oil containment or "herding" capability of the system.

Ohmsett technicians documented the test from various angles with photographs and video.

Oil Stop vice-president André Charitat, who represented the company at the Ohmsett tests, will use the collected data to further develop the bubble barrier system.



Oil Stop's bubble barrier at work.

Ohmsett on the Susquehanna

Ohmsett engineer David DeVitis and technician Don Snyder got the chance to enjoy some new scenery when they traveled to Pittston, Pennsylvania to assist with a project at the Butler Mine Tunnel on the Susquehanna River.

The tunnel provides groundwater drainage from a hard coal mining operation discontinued at the turn of the century.

DeVitis and Snyder assisted Marine Pollution Control (on behalf of EnSafe, Inc.) on-site in testing anchors for a containment and diversion boom system designed to recover floating oil or hazardous material in the event of a discharge from the tunnel.

DeVitis and Snyder helped set up the test, collected data, and wrote a report on mobilized instrumentation and computerized data collection after their return to Ohmsett.



A view of the test site on the Susquehanna.

The Ohmsett Gazette is published by Ohmsett--The National Oil Spill Response Test Facility--to update our readers on activities at the facility.

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Recent Training Sessions at Ohmsett

Coast Guard oil spill responders came to Ohmsett three times in 2002 --in June, August, and September--for five-day Oil Spill Recovery Equipment Operator Training (OSRT) sessions using Coast Guard oil spill recovery equipment in the Ohmsett test basin.

The OSRT provided hands-on training--which included oil spill recovery in the test basin--as well as classroom training.

Also, during the summer of 2002, instructors from Texas A&M's National Spill Control School conducted an oil spill management training course for students from various government and private response organizations--including one student from the Korean Marine Pollution Prevention Corporation.

Students received classroom instruction, and participated in spill cleanup exercises in the test basin.



Coast Guard training students operate the skimmer controls.



Training students discuss a strategy.

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News Briefs

Ohmsett in the Media

For a week in August, 2002, Ohmsett hosted a journalist from Popular Science magazine who joined, then wrote about, a Coast Guard training session at the facility.

Check out David Sparrow's article "This Is Oil. Suck It Up" in the December, 2002 issue of Popular Science.

Pictures From the Air

The stunning view seen below of the Ohmsett facility from above is the result of a sky-high picture taking session over Ohmsett in September, 2002.

A helicopter, a photographer, a videographer, and an hour of flight time yielded a plethora of pictures from a seldom seen perspective.

We'll See You At These Conferences!

International Oil Spill Conference
April 7 through 10, 2003
Vancouver, British Columbia,
Canada

Interspill
June 14 through 17, 2003
Trondheim, Norway

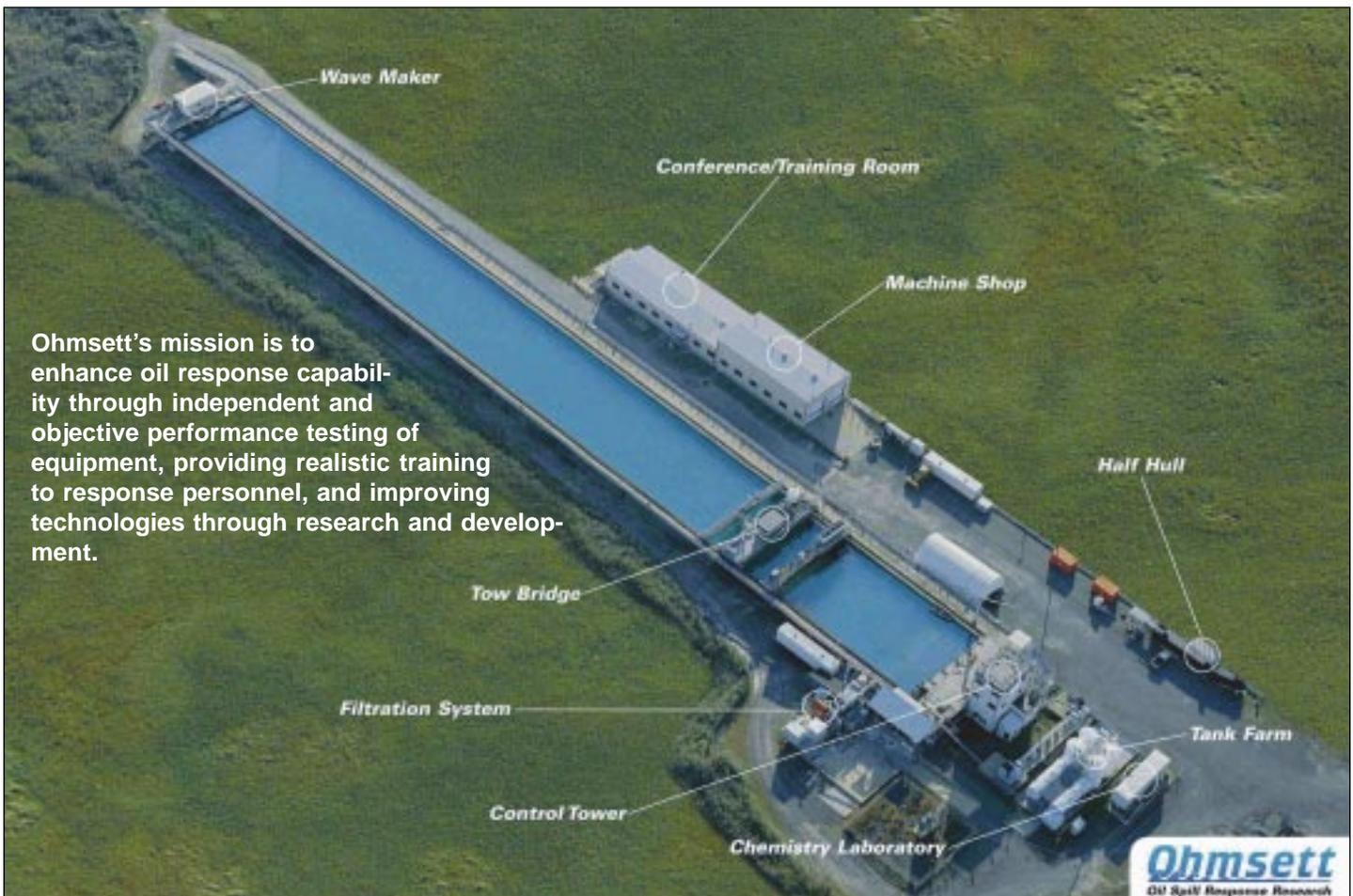
Clean Gulf
November 19 and 20, 2003
New Orleans, Louisiana

Special Olympics Sailing Team Visits

The Atlantic Highlands (New Jersey) Special Olympics sailing team visited in August, 2002 to hear a talk on Naval Weapons Station Earle history with public affairs officer Nancy Eldridge.



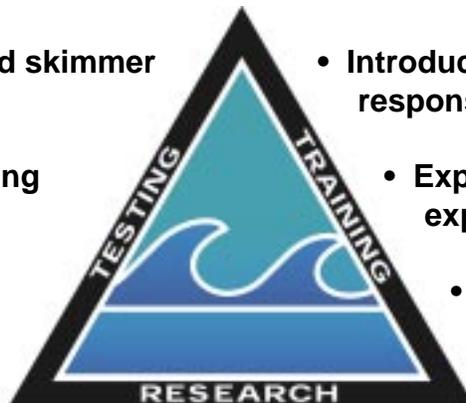
Special Olympics sailors in front of the test basin.



Ohmsett

Oil Spill Response Research

- Oil containment boom and skimmer evaluations
- Dispersant and oil sampling device evaluations
- In-situ burning and oil-in-ice/cold water testing



- Introductory and advanced oil spill response courses
- Expert instructors with 20+ years experience
- Hands-on training with real oil

- Ability to fabricate and modify equipment in on-site machine shop
- Experienced engineers and technicians

For more information call (732) 866-7183. Or visit our web page at www.ohmsett.com

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