New and Improved Auxiliary Bridge

Ohmsett replaced the 40-year-old Auxiliary Bridge with a new and improved bridge that serves as a stable platform to secure testing and training equipment such as hydraulic power units, recovery tanks, and offload pumps. Ohmsett engineering contracted Sigma Design Company to design and manage the construction of the bridge to Ohmsett criteria. Brennen Industrial built the bridge and had it fabricated by Gateway Industrial Services in Pennsylvania.

The Auxiliary Bridge is one of three bridges that span the width of the 65-foot by 667-foot long test tank and moves at speeds up to 6.5 knots during testing, training and research operations. It also provides an excellent vantage point for students during oil spill response training classes as well as photo and video documentation during testing.

The 70-foot long bridge was transported to Ohmsett where ancillary components were added and then lowered into place with a 300-ton hydraulic crane.

The New X150 is Put to the Test

Elastec/American Marine, the first place prize winner of the Wendy Schmidt Oil Cleanup X CHALLENGE competition, recently developed a new skimmer based on the winning system using their grooved disc technology. Elastec’s executives and engineers tested the X150 system at Ohmsett May 14-18, 2012 to quantitatively and qualitatively evaluate its performance.

The high-volume skimmer was first unveiled in March at the Interspill 2012 conference in London, UK. The X150 is designed to be towed through the water at a speed faster than most available systems, allowing recovery boats to cover more surface area and collect oil efficiently at higher recovery rates. Additionally, its’ envelop size is designed to be rapidly transported via air cargo. This requirement governed the scaling of the newly designed unit.

“The significance of oil encounter rate has to be re-learnt following the Deepwater Horizon experience,” states Stewart Ellis, vice president of Sales and Marketing at Elastec. “Having a skimmer with a high recovery capacity is only part of the story, if you are not able to move faster through the water and effectively feed the skimmer with sufficient oil, the skimmer will not perform to its potential.”

Testing at Ohmsett allowed Elastec the opportunity to operate the new system in oil at varying settings to optimize performance for the first time. The X150 was tested in advancing mode and stationary mode. “We wanted to prove to ourselves, and the world, that we are able to scale the X Prize results and technology into a more user friendly platform. The X150 is the first in a line of

Based on the winning system from the Wendy Schmidt Oil Cleanup X CHALLENGE, the Elastec/American Marine X150 was tested for the first time at Ohmsett.
In an effort to improve mechanical recovery of spilled oil, the Lamor Corporation of Finland tested three of its brush skimmer designs at Ohmsett in late April 2012. Two of these next generation skimmers were completely new concepts.

“They are all based on the combination of technologies that are in the current Lamor and Slickbar product lines. These have a new concept that can handle high speeds and light to viscous oils. We are testing the next generation of skimmers and the Aquatread brushes,” says Fred Larsen, CEO Lamor Corporation.

The Lamor Minimax 60 skimmer, LNXG100, and LNXG1000 concepts were tested during a two-week period using Hydrocal oil in the Ohmsett test tank. All systems were tested in the stationary mode. The LNXG1000 was tested in the advancing mode as well.

During the stationary tests, the skimmers were fitted with different brush configurations and tested at different speeds, as well as brush heights to determine Oil Recovery Rate (ORR) and Recovery Efficiency (RE). “There are a few different brushes. The standard [brush] is being compared to the Aquatread brush which has been used before and has achieved high capacity with less water,” noted Larsen. Each system was placed in a boomed-off area in the test tank that contained a slick of Hydrocal. The tests were conducted in accordance with the ASTM F 2709 – Standard Test Method for Determining Nameplate Recovery Rate of Stationary Oil Skimmer Systems.

The LNXG1000 concept was also tested in the advancing mode. The skimmer was tethered to the Ohmsett Auxiliary Bridge and towed down the tank through an oil slick. As each new run started, the tow speed was increased. Samples were taken of the skimmed oil after each run to determine ORR and RE at each speed.

“We are especially happy that there is no oil escaping behind the skimmer,” Larsen commented. “It’s always nice to see a clean tank behind us.”

“Upon conclusion of our two-week testing period and the results it generated, we are convinced that our technologies for our next generation skimmers will work exceptionally well tackling various oil grades in all climatic conditions,” says Larsen. “Ohmsett and its testing facilities offer the most realistic simulated marine environment. Last year we made a strategic decision to include Ohmsett as an important part of our entire R&D programs for testing and vetting our equipment. The facilities are remarkable and the Ohmsett team are flexible, knowledgeable and experts in their field.”

The Lamor LNXG1000 concept was tested in the advancing mode. The skimmer was tethered to the Ohmsett Auxiliary Bridge and towed down the tank through an oil slick.
Measuring the Performance of the MOS Sweeper System

Maritime Development Group returned to Ohmsett in March 2012 to test their new concept in oil recovery in open waters. The MOS Sweeper system includes a series of sweeping boom to control and guide encountered oil to a collection zone. It operates from a single vessel, is easily deployed, and can be scaled for small shoreline operation or large-scale operations with significantly increased recovery rate. The system was previously tested at Ohmsett in June 2011.

The MOS Sweeper consists of three main components: a shallow draft sweeper panel designed to concentrate an oil layer by side-ways deflection, a flow canal, and collecting units. The objective was to quantify the performance of the MOS Sweeper system to recover and contain spilled oil at relative current (tow) speeds from 1.0 to 4.0 knots.

“The Ohmsett facility is an excellent playground for testing of our systems. It offers realistic conditions with regard to operating speeds and reasonable sea conditions,” says Maritime Development Group Project Manager, Steinar Heimtun.

During the one-week test, the MOS Sweeper was rigorously tested in the tank in different variations and combinations to evaluate towing stability, oil recovery rate (ORR), and recovery efficiency (RE) in both calm surface conditions and in waves. While rigged between the Main Bridge and the Auxiliary Bridge, the system was towed through an oil slick of CALSOL.

“The MOS Sweeper system was tested with two different recovery units, a SeaQuest centrifugal pump and a Desmi Octopus skimmer inside a skimmer pool. Both systems proved to work well,” commented Heimtun.

In addition, a final test was conducted using a Foilex weir skimmer to recover the Calsol in a stationary boomed area.

According to Heimtun, the next step in the development is an extensive test program with NOFO using their oil recovery vessels.

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USCG Trains Personnel in Spill Response Strategies

The U.S. Coast Guard came to the Ohmsett facility March 12-16, 2012 for their first of two scheduled Oil Spill Responder Training (OSRT) sessions using Vessel of Opportunity Skimming System and Spilled Oil Response System (VOSS/SORS) equipment currently in use by the Coast Guard. The week-long training activities included classroom theory that focused on general Coast Guard oil spill response, safety, and specific VOSS/SORS oil spill response equipment systems; and hands-on practical training where students were divided into groups and rotated through five equipment stations.

One of the stations required the students to complete hands-on training in the Ohmsett tank. There they practiced recovering oil with spill equipment used in the field under conditions that simulate an actual oil spill. The teams practiced with three wave types: calm, harbor chop, and sinusoidal (sea state 2). As the students became more proficient in skimming techniques, the training exercises took on a competitive nature as they competed to see who can skim the most oil.
The system was tested in the stationary mode to determine the nameplate capacity per the ASTM F-2709 Standard Test Method for Determining Nameplate Recovery Rate of Stationary Oil Skimmer Systems. The system was placed within a boomed-off area preloaded with a layer of Hydrocal test oil per ASTM F-2709. Once completed, the Hydrocal was removed and replaced with Calsol test oil (nominal viscosity of 2000 cPs) to determine the nameplate capacity with the heavier oil.

“The subsequent stationary tests were a pleasant surprise. The X150 is primarily built for high speed towing; however we wanted to explore the operational envelope with a stationary test in both light and heavier oil. We were very pleased to see the X150 continue to recover oil at high rates. It was also capable of recovering thin oil layers effectively,” explains Ellis.

In addition, Ellis said they wanted to test two other skimmers already in their lineup in the stationary mode to the ASTM nameplate capacity protocol. Both the Magnum 100 and TDS 136 grooved drum skimmers were tested with Calsol. “We have known from our research with the University of California, Santa Barbara that grooved drums can double the recovery rate of a [conventional] drum skimmer. The purpose of this testing was to verify our stated recovery rates. The Magnum 100 exceeded our expectations.”

**Auxiliary Bridge**

The new bridge features 50 percent more work area, new piping arrangements for decanting and sampling recovered fluids, and improved corrosion resistant fiberglass non-skid walking surfaces with non-slip stairs provide safer access to the bridge. The catwalk located in front of the bridge now has stairs to the upper walkway for improved access between the two levels without leaving the bridge. There is also a new, safer system to raise and lower the curtain boom used to keep oil from previous tests out of the test area.

The new Auxiliary Bridge is lowered into place by a 300-ton hydraulic crane. The bridge serves as a stable platform to secure testing and training equipment such as hydraulic power units, recovery tanks, and offload pumps.
Bringing Together the Spill Response Community at Interspill

Ohmsett staff attended Interspill 2012, the European oil spill conference and exhibition that was held March 13-15 in London at the Excel Convention Center. More than 1,300 delegates, visitors and exhibitors gathered for three days of workshops, sessions and discussions covering topics that dealt with current and future risks of oil spills. The event was co-located with Oceanology International, which contributed to additional visitors to the Interspill Exhibition.

The Conference was opened by Glyn Humphries, chairman of Interspill 2012, as he welcomed attendees and introduced the keynote speaker, Sir Allan Massey CBE KCB, chief executive of the UK Maritime and Coastguard Agency. Archie Smith, chief executive of OSRL, the sponsor of the event, concluded the opening session and encouraged everyone to visit the exhibits and participate in the workshops.

During the Technology Development seminar, Ohmsett’s Program Manager Bill Schmidt presented the paper *Hosting the X-Prize Oil Cleanup Challenge*. He discussed how the competition was designed to inspire a new generation of innovative solutions to recovering spilled oil from the seawater’s surface and the testing methods used during the competition. In addition, he presented the competition results from the ten finalists that were selected out of more than 350 entries from around the world.

On the exhibit floor, Ohmsett staff welcomed visitors to their booth and discussed research, testing and training capabilities at Ohmsett. “These shows are an essential part of networking within the spill response community. Many of our customers were exhibiting and demonstrating the success they have had with their equipment while testing at Ohmsett. This in turn brought new prospects to the Ohmsett booth inquiring about testing opportunities,” said Schmidt.

The proceedings of the conference, workshops and seminars are published on the Interspill website www.interspill.org.

Ohmsett’s Program Manager Bill Schmidt presenting the paper *Hosting the X-Prize Oil Cleanup Challenge* at the Technology Development seminar at Interspill 2012. (Photo by Tom Parkes.)

Bill Schmidt meets with booth visitors to discuss the research, testing and training capabilities at Ohmsett during the Interspill Conference in London.
Conference Focuses on Pacific Ocean Challenges

The Ohmsett staff attended the Clean Pacific Conference on May 16 & 17, 2012 in Long Beach, California. Clean Pacific is the premier West Coast training event that provided the spill response community with conference sessions focused on oil, hazmat spill, planning, prevention and response. “This conference gave us the opportunity to discuss problems and solutions to the many issues facing the spill response community,” commented Bill Schmidt, program manager for Ohmsett.

During the General Session, Jean Cameron, executive coordinator for the Pacific States/British Columbia Oil Spill Task Force presented this year’s Legacy Awards. The awards acknowledge projects, accomplishments, or leadership that demonstrates innovation, management commitment, and improvements in oil spill prevention, preparedness, or response resulting in enhanced environmental protection. The winners were: Rusty Nall, Executive vice president, the American Marine Corporation and PENCO; Eric Olsson, University of Washington Sea Grant Program; Captain Daniel LeBlanc, U.S. Coast Guard Sector Columbia River (FOSC for the barge Dave Crockett response); Kathy Fletcher, founder of People for Puget Sound; The U.S. Coast Guard SS Montebello Project Team and; The SE Alaska Petroleum Resource Organization (SEAPRO).

Ohmsett staffed a booth on the exhibit floor where attendees had the opportunity to network and learn about the latest response tools and technologies, as well as Ohmsett’s research, testing and training capabilities.

BSEE Director Watson Visits Ohmsett

The U.S. Department of Interior’s Bureau of Safety and Environmental Enforcement (BSEE) Director James A. Watson recently visited the Ohmsett facility during the U.S. Coast Guard Oil Spill Response Technician (OSRT) training. Mr. Watson, along with BSEE policy and budget representatives and congressional staff members, received an overview of Ohmsett, a lab demonstration, and a tour of the facility where they had the opportunity to observe USCG response equipment and operation training.

Ohmsett engineer Paul Meyer describes the Ohmsett test tank and its systems to U.S. Coast Guard Petty Officer Second Class Michel Carreon during the Clean Pacific Conference and Exhibition.

BSEE Director James Watson tries his hand at skimming oil during his tour of Ohmsett.
**News Briefs**

**Engineering Students Learn About Oil Spill Cleanup**

In late May, engineering students from Plymouth/White Marsh High School, located in Plymouth Meeting, Penn., visited Ohmsett for a tour of the facility. The presentation and tour complemented their engineering project which focused on oil spill cleanup.

“Touring the facility was a wonderful experience for our students,” said Jim Muscarella, Science Department Head, Plymouth/White Marsh High. “Observing such a unique place validated our oil spill simulation project conducted earlier in the school year.”

Engineering students from Plymouth/White Marsh High School gather at the test tank to get a first-hand look at where spill response technologies are tested.

**Canadian Crown Corporation Visits Ohmsett**

On May 10, representatives from research organizations and facilities from Newfoundland and Labrador, Canada visited Ohmsett for a tour of the facility. The visitors were from C-CORE, National Research Council Canada, Petroleum Research Newfoundland and Labrador, and the Research & Development Corporation. They represented offshore oil and gas interests in oil spill research in harsh environments.

“We have interest in R&D facilities that align with industry needs. As a crown corporation, we invest in people, research and infrastructure that enhance our R&D capacity, including opportunities for international collaboration,” says Doug Trask, executive of Strategy and Program Development for the Research & Development Corporation. “We can see potential for collaborative research with Ohmsett in this area.”

Ohmsett engineer Alan Guarino provided them with an overview of the facility’s oil spill response research capabilities, a tour of the oil/water chemistry lab, as well as the test basin, wave generator, and control tower.
Ohmsett is managed by the Bureau of Safety and Environmental Enforcement (BSEE) through a contract with MAR Incorporated. For more information call (732) 866-7183 or visit our web site at www.Ohmsett.com