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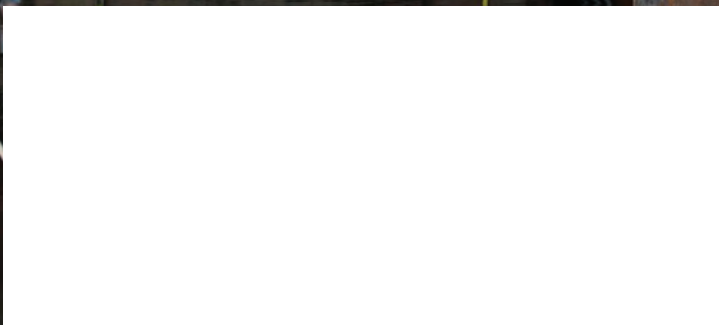
News

SEPTEMBER 2011

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Marine Environmental

GOM Recovery One Year Later



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Z-Drives & Ocean Towing
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(Photo: Raina Clark)



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Ed Overton, Louisiana State University, emeritus professor of coastal sciences.

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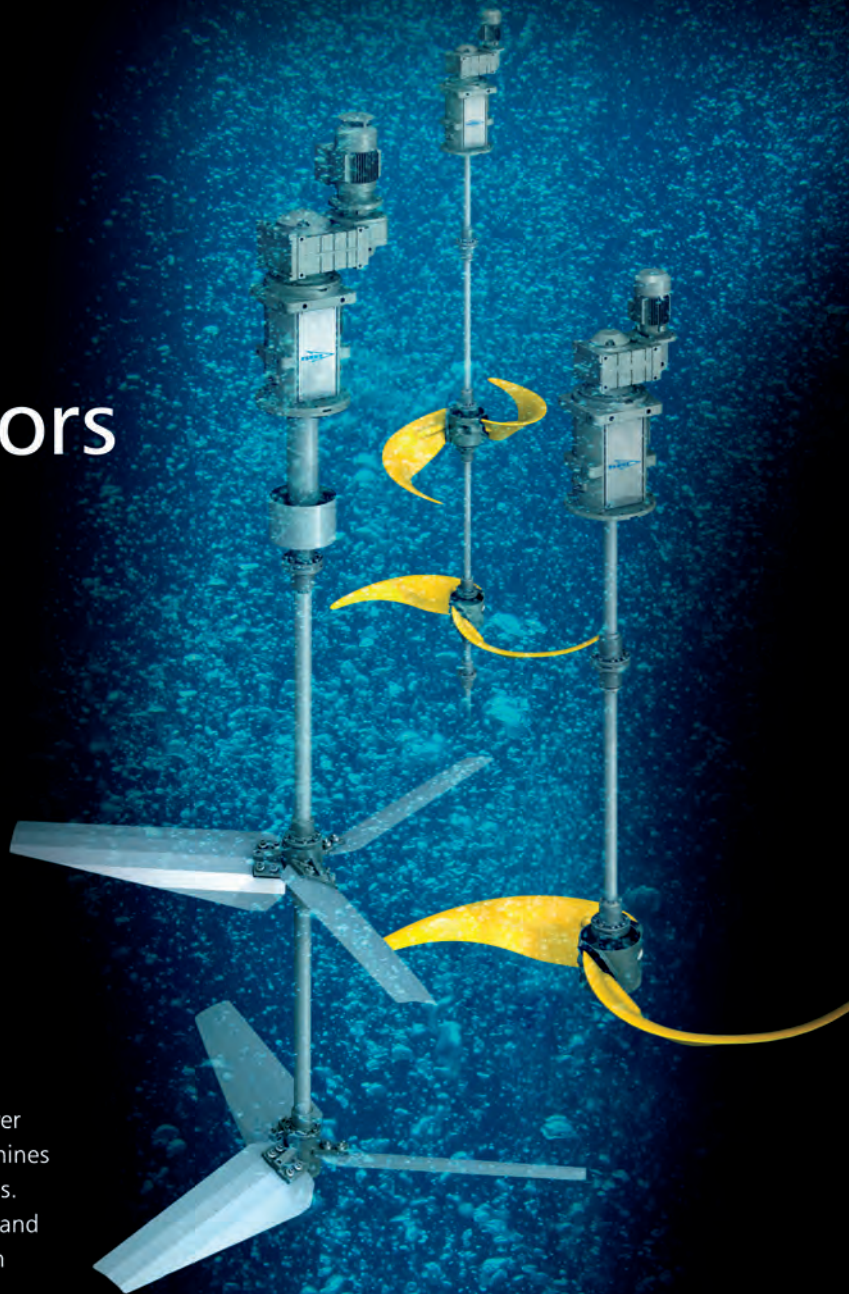
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On the Cover

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More than one year after the Gulf Oil Spill was capped, the event continues to impact both the environment and the Gulf Coast business climate.

Pictured: Decontamination of the Helix Q4000 takes place at Gulf Copper Dry Dock & Offshore Rig Repair in Galveston, TX on 28 September 2010.



Photo copyright of BP P.L.C.

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EDITOR'S NOTE

keefe@marinelink.com

This month, we take a broad look at the state of the environment, what impact inland, offshore and coastal industries have had on that metric, and more importantly, where we are collectively headed. You can't talk about business without also including the environment in the same conversation. That's because the condition of one ultimately affects the health of the other. In this edition of *MarineNews*, you'll find out why.

Are you going "green?" Are you there yet? If so, what's your motivation for doing so? As little as five years ago, the move towards a cleaner waterfront was spurred primarily by two factors; the advent of rapidly advancing regulatory hammer and, to a much lesser extent, the desire of a handful of firms to do the right thing for the right reasons. Foss Maritime's hybrid technology tug design introduced in 2008 comes to mind right about now. Less than three years ago, Faber told anyone who would listen, "There is a difference between being environmentally aware and environmentally proactive." Today, Harvey Gulf CEO Shane Guidry's bold decision to build clean, LNG-powered OSV's for the U.S.-flag markets is a key reminder that forward-thinking executives still run our marine enterprises.

As the regulatory noose tightens on all sectors of the maritime industry, nowhere has its impact been greater than along the U.S. coastal and inland markets. *MN* contributor Susan Buchanan's overview of the U.S. GOM environmental outlook shows us why that won't change in the near future, but also why the aftermath of last summer's deep-water spill isn't as dire as had been feared. We still have work to do when it comes to doing a cleaner job. At the same time, the need to polish the message – that we as an industry are doing better than some would have you believe – is clear. And, if you need to quantify that claim, then simply turn to our "By the Numbers" feature on page 57 for proof.

Still focusing on regulatory compliance and the environment, good news abounds. As the AWO embraces the Coast Guard's historic new inspection program for towing vessels, including a requirement for a safety management system as recommended by the NTSB, we can look towards a safer and cleaner inland waterways system. Arguably, Tom Allegretti's cooperative effort with DHS regulators will eventually rival the innovative thinking – albeit on a different front – of both Guidry and Faber.

Elsewhere in this edition and on the inland waterways, new technology being employed to repair critical marine infrastructure will allow America's cleanest form of bulk transportation to move more efficiently through the Markland Locks and Dams, while at the same time, expediting repairs to a dozen other projects. Here, we see that federal funding for inland infrastructure can promote a cleaner carbon footprint. We need more of it. As an industry, we are also doing better in that regard than you might think. Getting that message out is a key part of "Going Green." Let's get to work.



A handwritten signature in blue ink that reads "Joe Keefe". The signature is fluid and cursive.

Joseph Keefe, Editor, keefe@marinelink.com

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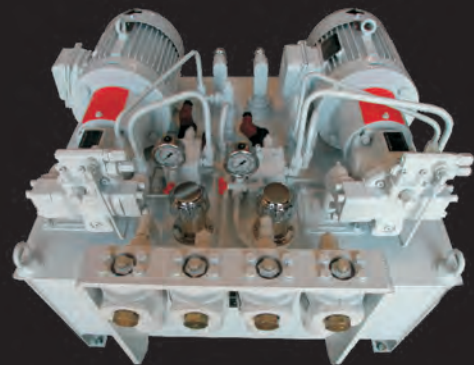
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President and CEO of Waterways Council, Inc. (WCI)

Michael J. Toohey



The need to sustain and increase the reliability of America's inland waterways has arguably never been more important. Michael Toohey arrived in August at WCI with more than 30 years of federal government expertise. As Vice President of Government Affairs for Ashland Inc., Mr. Toohey served as the principle representative to the federal government and also supervised state government relations for that Fortune 500 corporation. He also served as Assistant Secretary of Transportation from 1992 to 1993. This month, the newly installed WCI President weighs in on the latest from the heartbeat of America's transportation engine.

Congratulations on your appointment as President and CEO of the Waterways Council. What project is now number one on the WCI agenda and what are you and your staff doing about it?

The charge I received from the Board of Directors of the Waterways Council is to make as my primary focus the development of reliable, efficient systems of waterways. To achieve this goal, WCI has offered a comprehensive Capital Development Plan (CDP) encompassing three elements: project delivery reform, including cost-sharing re-alignment; funding priorities for the 17 authorized but unfunded navigation improvement projects; and a user fee enhancement for increasing the revenue flowing into the Inland Waterways Trust Fund. We have recently met with senior officials of President Obama's Office of Management and Budget to advocate our plan and to request that the President's Jobs Initiative include funding for inland navigation projects, 17 of which are ready to put people to work in good paying jobs immediately.

Advocating for a properly funded and well-maintained system of inland port and waterways is a tough, if not impossible job in this financial and political environment. What is your strategy going forward?

Our strategy will be based on three key initiatives: a direct federal lobbying campaign to engage Executive Branch and Congressional decision-makers to support the CDP. Secondly, we will initiate a media campaign which will focus on educating editorial boards back home in key congressional districts and states on our pro-waterways mes-



sages. We will also urge constituents to write letters to the editor on behalf of waterways improvements and attend town hall meetings, Rotary and Chamber of Commerce events, and try to earn media attention focused on our infrastructure and job creation ideas. Thirdly, we will seek to engage the people back home in support of the CDP and have them actively and frequently tell their elected officials about the importance of supporting infrastructure investment to modernize our water transportation networks.

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In fairness to Secretary LaHood, we need to recognize that inland navigation infrastructure investment is not a part of the portfolio of the U.S. Department of Transportation. The U.S. Army Corps of Engineers supports the inland navigation mission.

We, as a collective maritime industry, arguably do a poor job of educating the public – and their elected representatives – as to the importance of our maritime transportation system. Would you agree with that assessment and where and how do you think we can improve on that score.

I agree with your thesis about the need to constantly educate the public and elected officials. Change is the only constant in Washington, so education is an enduring opportunity and challenge. The focus needs to be on what is important to elected officials and for most, it is what is going on back home; how does an issue or funding request affect my district or my State? When the public agrees that their voice does really make a difference to the outcome, then they will convince their officials about the need to take action or support an initiative. Thus, the importance of an outreach effort through the media.

You previously worked at the U.S. DOT. Virtually 99% of stimulus and infrastructure spending is going to rail, air and surface roads. Are we getting closer to convincing Secretary LaHood and Mr. Matsuda that we need to divert some of this money to maritime initiatives?

In fairness to Secretary LaHood, we need to recognize that inland navigation infrastructure investment is not a part of the portfolio of the U.S. Department of Transportation. The U.S. Army Corps of Engineers supports the inland navigation mission. Just as a Member of Congress cares (only) about his or her Congressional District, so too does the Department of Transportation care about Highways, Transit, Rail, Aviation, and Pipelines. Waterways are a vital component of national transportation, but they do not get the attention they deserve because of this absence from the responsibilities of the U.S. DOT. Thus, we must look to the Congress to provide the resources needed for reliable, efficient systems of waterways.

America's Marine Highway – a viable concept, but clearly stuck in neutral gear. What can be done to jump start it?

America's Marine Highway is stuck in park with a green

light winking at it. The shift in traffic patterns which will result from improvements to the Panama Canal will be a tipping point in the attention given to water transportation.

There will be a literal flood of traffic moving in a North–South pattern which we are ill-prepared to serve. Will we wait until the traffic shows up at our Gulf Coast Ports or will we make the investments in timely well reasoned manner? Right now, the betting is on a reactionary approach to transportation planning. We need to initiate or enhance efforts on the three legs of effective advocacy: Media Outreach, Grassroots Activism, and Direct Lobbying.

The Markland Locks and Dam situation is a perfect example of infrastructure that needs to be fixed, and fixed now. What's your take on the new U.S. Army Corps of Engineers effort that supposedly will reduce the amount of time necessary to repair the local and dam by one-third and for about \$60 million less than it ordinarily would have cost. This is nominally good news. Flesh it out for us.

Hopefully it will be nothing but good news from the world's premier engineering organization. Maintenance of critical infrastructure has not been given the funding priority needed. With facilities long past their original design life, it is a miracle and a tribute to the dedication of employees of the U.S. Army Corps of Engineers that what we take for granted actually continues to function! Recently, the Corps informed stakeholders that there will be another cost increase for the Olmsted Navigation Project.

We do not yet know what that overrun will be, but it must be enormous, or there would not be the level of study that we have been told will be required before the cost estimate can be revealed. This is ominous for a project originally estimated to cost \$775 million, currently projected to be \$2.1 billion and now going much higher. The use of experimental engineering techniques has apparently driven the project financials to an unsustainable level for the Inland Waterways Trust Fund and those users required to pay these costs.



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Harvey Gulf International Marine Sees Two Kinds of Green in Dual-Fuel LNG Propulsion

In July, Harvey Gulf International Marine's Board of Directors approved the construction of the first United States flagged LNG Offshore Supply Vessels. Harvey Gulf International Marine's Chairman & CEO Shane J. Guidry pointed to the move as just one more example of Harvey Gulf's commitment to meet its client's future needs. By the end of August, Guidry had announced the deal – first reported exclusively on MarineLink.com – a contract for not two, but three LNG vessels, all to be built by Signal Shipbuilding.

At a Harvey Gulf board meeting held on Saturday, 28 August, the Louisiana-based operator's management team approved the \$165 million deal Harvey Gulf President & CEO Shane Guidry told *MarineNews* Editor Joe Keefe, "Also, the Board approved an additional \$300 million for another 6 newbuilds, as well as \$500 million for acquisitions." Financing terms were not disclosed.

The SV310DF vessels, designed by STX Marine Inc., will be dual-fuel with LNG capacity for seven days with

three (3) engines at full RPM. In addition, the vessels will carry 5520 tons of deadweight at load line and have a transit speed of 13 knots. Mr. Guidry stated that, with the stringent Governmental demands for both reduced emissions and clean burning energy use, Harvey Gulf has decided to make the capital investment of \$165 million for the three vessels.

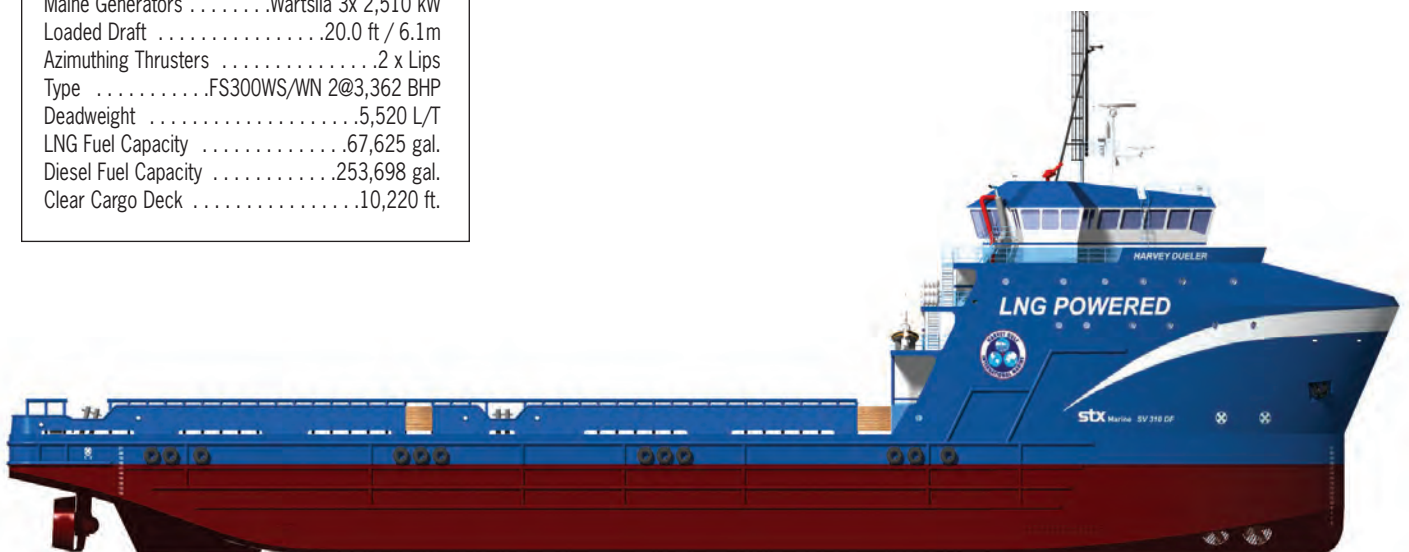
STX Marine Inc., with offices located in Vancouver, British Columbia and Houston, Texas, is a consulting naval architecture and marine engineering company and is a leading designer of offshore support vessels for the North American and International markets. Founded in 1955, Harvey Gulf International Marine is a marine transportation company that specializes in towing drilling rigs and providing offshore supply and multi-purpose support vessels for deepwater operations in the U.S. Gulf of Mexico. The Louisiana-based marine transportation company, specializing in towing drilling rigs and providing Offshore Supply and Multi-Purpose Support Vessels for deepwater water operations in the U.S. Gulf of Mexico, has in recent years aggressively pursued a path of focused growth and acquisition. Harvey Gulf's newer vessels are typically characterized by state-of-the-art technology, usually outfitted above and beyond simple regulatory requirements. The deal to acquire still more vessels, this time focusing on clean running LNG tonnage, appears to further that trend. On the WEB:

<http://www.harveygulf.com>

Vessel Specifications

Length overall302 ft.
Beam64 ft.
Depth24.5 ft.
Light Draft11 ft.
Main Engines (3)Wartsila
Type6L34DFTier II / Tier IV 2,610 kW
Total Power7,830 kW / 10,500 BHP
Main GeneratorsWartsila 3x 2,510 kW
Loaded Draft20.0 ft / 6.1m
Azimuthing Thrusters2 x Lips
TypeFS300WS/WN 2@3,362 BHP
Deadweight5,520 L/T
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three (3) engines at full RPM. In addition, the vessels will carry 5520 tons of deadweight at load line and





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OPINION

Historic Towing Vessel Inspection NPRM Welcomed by Towing Industry

By Tom Allegretti, President & CEO,
The American Waterways Operators



On August 11, the U.S. Coast Guard issued a long anticipated notice of proposed rulemaking that would establish a historic new inspection program for towing vessels, including a requirement for a safety management system as recommended by the National Transportation Safety Board. The American Waterways Operators hails this historic action as it will increase safety, security and environmental stewardship throughout the tugboat, towboat and barge industry.

BACKGROUND

In 2003, AWO took the unprecedented step of requesting that the Commandant of the Coast Guard ask Congress for the authority to establish a new inspection regime unique to towing vessels. This authority was granted in the Coast Guard and Maritime Transportation Act of 2004. Since 2004, AWO has worked closely with the Coast Guard through the Towing Safety Advisory Committee to craft a 21st century approach to towing vessel inspection, one that focuses on the biggest cause of towing vessel casualties: human error.

AWO SAFETY LEADERSHIP

AWO members have a long history of safety leadership in the industry, demonstrated through the AWO Responsible Carrier Program, a safety and environmental protection program with which all AWO members must be in audited compliance as a condition of membership.

Since the adoption of the AWO RCP, the industry has made great strides in enhancing safety, achieving a significant reduction in crew fatalities, oil spills, and vessel casualties. However, AWO believed that industry safety would benefit even further from the establishment of a Coast

In 2003, AWO took the unprecedented step of requesting that the Commandant of the Coast Guard ask Congress for the authority to establish a new inspection regime unique to towing vessels.

Guard inspection program, including a requirement that all towing vessels implement a safety management system.

In September 2000, as part of the m/v Anne Holly accident investigation, the NTSB recommended that the Coast Guard require domestic towing companies to develop and implement a safety management system.

GOVERNMENT-INDUSTRY COOPERATIVE APPROACH

While this new inspection program is a historic change, it is also an outgrowth of years of cooperative work by AWO and the Coast Guard to improve maritime safety and environmental protection, including the innovative Towing Vessel Bridging Program, under which more than 3000 towing vessels have already undergone voluntary Coast Guard examinations to verify their compliance with safety and environmental stewardship requirements. Through the Coast Guard-AWO Safety Partnership, established in 1995, government and industry have worked together to tackle the most pressing safety problems in the towing industry.

FEATURES OF THE PROPOSED TOWING VESSEL INSPECTION PROGRAM

The proposed regulations were developed with extensive input from the congressionally established TSAC. AWO and TSAC had recommended that the Coast Guard establish a new subchapter of the Code of Federal Regulations containing, to the maximum extent possible, all of the requirements for inspected towing vessels. TSAC's goal was to minimize cross-referencing and facilitate compliance by providing a one-stop answer to the question, "What requirements does my towing vessel have to meet?" The NPRM largely does that, establishing a new 46 CFR

Subchapter M that contains comprehensive new standards to ensure the safety of all aspects of towing vessel operations, from vessel equipment to human factors. The new 46 CFR Subchapter M would establish standards for vessel operations, mariner health and safety, lifesaving, firefighting, machinery and electrical systems, and vessel construction and arrangements.

Other features of the proposed regulations include:

- *Requiring towing companies to implement a Towing Safety Management System as recommended by the NTSB. Companies that choose not to implement a TSMS would undergo annual Coast Guard inspections of their towing vessels.*
- *Allowing for Coast Guard acceptance of safety management systems other than the International Safety Management Code to meet the TSMS requirements. This would allow AWO to review the Responsible Carrier Program against the requirements for a Coast Guard-accepted TSMS, make any changes needed, and submit the RCP to the Coast Guard for acceptance as a TSMS.*
- *Using Coast Guard-approved third parties to verify compliance with the new requirements, enabling the Coast Guard to better target its resources on those companies and vessels whose operations warrant closer scrutiny.*
- *Exempting from coverage vessels less than 26 feet, unless moving a barge carrying dangerous or hazardous materials; vessels used for assistance towing; work boats operating exclusively within a work site; seagoing towing vessels over 300 GRT; and vessels inspected under*

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other subchapters that may perform occasional towing. Vessels in the first three categories would be addressed in a subsequent rulemaking.

INDUSTRY’S REACTION TO THE NPRM AND NEXT STEPS

At first glance, AWO likes most of what it sees in the NPRM. All the details may not be perfect but most of the concepts are sound. The NPRM proposes a new approach to Coast Guard inspection that is unique to towing vessels and more flexible and innovative than the inspection requirements that currently exist for any other class of inspected vessel. Its approach is deeply rooted in the recommendations made by AWO and TSAC over the last eight years. It’s clear that the Coast Guard has been listening to the industry.

The Coast Guard will accept comments on the NPRM until December 9. In addition, the agency will hold four public meetings to seek feedback.

The meetings are tentatively scheduled to take place in Norfolk, VA on October 18; in St. Louis, MO on October 24, in New Orleans, LA on October 26; and in Seattle, WA on November 16. An AWO member working group comprising more than 70 AWO members from all segments of the tugboat, towboat and barge industry will conduct an in-depth analysis of the NPRM in order to develop AWO comments to the docket.

The transition to towing vessel inspection is the most important regulatory change the towing industry has ever experienced. We must get the details right. This is a complex

rulemaking and AWO will continue to participate actively in the regulatory process, providing detailed and specific comments to refine the proposed regulations and ensure that

they achieve their promise: helping to make the industry safer as it reliably carries the nation’s cargo, thus benefiting America’s economy, environment and quality of life.

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Regulation of Vessel Discharges

Regulatory burdens translate into a tale of many acronyms

By Matthew Valcourt



The latest trend to further regulate vessel emissions and discharges will continue to give vessel owners and operators – already burdened with numerous regulations when plying international and inland waters – more sleepless nights.

These include the Act to Prevent Pollution from Ships (APPS), the Clean Water Act (CWA), the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and the Organotin Antifouling Paint Control Act (OAPCA), just to name a few.

Plying international waters, a vessel may also be subject to several treaties, including the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), the International Convention on the Control of Harmful Anti-Fouling Systems on Ships, the International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention), and the International Convention on Oil Pollution, Preparedness, Response and Cooperation (OPRC).

Just when you thought that all of the forgoing was quite enough, the EPA also inserted its regulatory tentacles into the mix. Public Law (P.L.) 110-299 (July 31, 2008) tasked the EPA to study vessel discharges and measure their effects on the environment. And now, the EPA now requires vessels to obtain permits to discharge certain materials and to give notice of intent to discharge.

A TALE OF MANY ACRONYMS

This new area of regulation is burdened with endless acronyms, each of which a vessel owner must keep a weather eye on to assure compliance. After various studies, the EPA developed the National Pollution Discharge Elimination System (NPDES). The spine of the NPDES program is the Vessel General Permit, (VGP). In reality, the only thing the 2008 Vessel General Permit (VGP) regulates is discharges incidental to the normal operation of vessels operating in a capacity as a means of transportation. That's where it gets complicated. The VGP includes general effluent limits applicable to all discharges; general effluent limits applicable to 26 specific discharge streams;

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narrative water-quality based effluent limits; inspection, monitoring, record keeping, and reporting requirements; and additional requirements applicable to certain vessel types.

The VGP contains technology-based effluent limits for just about all vessel discharges except for black water. Blackwater is not covered because CWA § 502(6) leaves vessel sewage out of the definition of pollutant and CWA § 312 gives authority to regulate vessel sewage to the Coast Guard. The VGP specifies open ocean exchange as the standard requirement for ballast water management and provides for ballast water treatment only on an experimental basis. The VGP regulates ballast water management during coastal voyages and management of ballast tank sediments – and this is important – more stringently than current Coast Guard requirements.

Owners and/or operators of certain sized vessels must obtain a permit. Under the NPDES regulations, if a vessel is owned by one person but is operated by another, it is the operator's duty to obtain a permit (40 C.F.R. §122.21(b)). For the purposes of the Vessel General Permit, (VGP) an "operator" is any "party . . . who (1) has operational control over vessel activities, including the ability to modify those activities; or (2) has day-to-day operational control of those activities that are necessary to ensure compliance with the permit or to direct workers to carry out activities required to comply with the permit."

Section 4.1.1 of EPA's Vessel General Permit (VGP) provides that at least once per week or once per "voyage," whichever is more frequent (but not more than once daily), permittees must conduct a visual inspection of safely accessible deck and cargo areas and all accessible areas where chemicals, oils, dry cargo or other materials are stored, mixed, and used, as well as verifying that monitoring, training, and inspections are logged according to VGP requirements. The routine visual inspections under this VGP section are intended to be measures of good marine practice that the prudent mariner is already employing to ensure vessel, crew, and environmental health and safety.

The next acronym is of course the Notice of Intent

(NOI) or the electronic version, the eNOI. The Electronic Notice of Intent system allows notices to be sent to the EPA from the operator regarding intent to discharge, and also allows the NOI form to be created by one entity and be certified by the operator separately. The EPA requires at least 30 days to process a complete and accurate NOI submittal and allow coverage under the VGP for vessels, which have not previously been covered under the VGP. The EPA may require additional time and paper submission of NOIs can take approximately 60 days to process.

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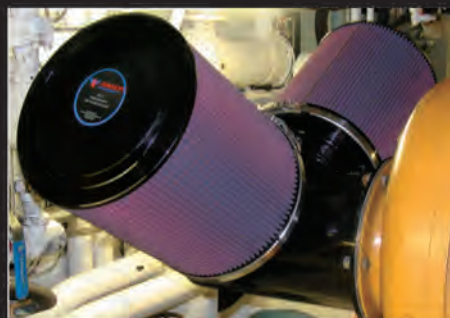
Interestingly, the NPDES vessels program does not regulate discharges from military vessels or recreational vessels. Instead, those vessel discharges are regulated by other EPA programs under section 312 of the Clean Water Act. Incidental discharges from the normal operation of vessels include, but are not limited to ballast water, bilge water, graywater (e.g., water from sinks, showers) and anti-foulant paints. These discharges may result in negative environmental

impact via the addition of traditional pollutants or, in some cases, by contributing to the spread of Aquatic Invasive Species.

EXCEPTIONS TO THE RULE?: NOT SO FAST...

Through intensive lobbying, Congress allowed exceptions to the permitting requirement for recreational vessels, fishing vessels, and commercial vessels under 79-feet in length. President Obama signed Public Law (PL) 111-215 (Senate Bill

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S. 3372) into law on July 30, 2010. This law amends PL 110-299 (Senate Bill S. 3298), which generally imposes a moratorium during which time neither EPA nor states may require NPDES permits for discharges incidental to the normal operation of commercial fishing vessels of any size and other non-recreational vessels less than 79 feet. As a result, the VGP does not cover vessels less than 79 feet or commercial fishing vessels, unless they have ballast water discharges in excess of a certain amount. And, PL 111-215 extended the expiration date of the moratorium from July 31, 2010 to December 18, 2013.

Of real concern to brown water and/or inland operators, the EPA is now studying the effect of discharges from these types of vessels as it related to the marine environment for potential further regulation. Congress directed the EPA, in consultation with the U.S. Coast Guard and other interested federal agencies, to conduct a study of discharges incidental to the normal operation of all fishing vessels and non-recreational vessels less than 79 feet in length (study vessels). Among other things, the study's charge directed EPA to include an analysis of the extent to which the discharges are currently subject to regulation under federal law or a binding international obligation of the United States. The EPA estimates there are as many

Through intensive lobbying, Congress allowed exceptions to the permitting requirement for recreational vessels, fishing vessels, and commercial vessels under 79-feet in length...Of real concern to brown water and/or inland operators, the EPA is now studying the effect of discharges from these types of vessels as it related to the marine environment for potential further regulation.

as 140,000 domestic vessels subject to the permitting moratorium. Clearly, any further regulation would have a deep impact on this sector of the maritime community. The EPA has found that commercial fishing vessels and non-recreational vessels discharge a wide variety of effluents during their normal operation. The Agency decided to focus its evaluation on discharges from engines, bilges, fish holds, decks, and graywater activities because such discharges can release oils, heavy metals, toxic organics, oxygen-depleting substances, nutrients, and endocrine-disrupting compounds to ambient waters in quantities that may exceed National Recommended Water Quality Criteria (NRWQC).

Through a sampling program of discharges from commercial fishing vessels and other non-recreational vessels less than 79 feet in length, the EPA sought to provide information to achieve the first two objectives of the study. The study specifically evaluated the impacts of the (1.) discharge of effluent from properly functioning marine engines; (2.) discharge of laundry, shower, and galley sink wastes; and (3.) other discharges incidental to these vessels' normal operation. In addition, the EPA supplemented sample collection and analysis with the collection of information regarding the shipboard processes,



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equipment, materials, and operations that contribute to the discharges, as well as the discharge rates, duration, frequency, and location.

THE BOTTOM LINE: POTENTIALLY LESS THAN 79 FEET LONG...

Some vessel discharges from commercial fishing vessels and commercial vessels less than 79 feet in length have the potential to impact the aquatic environment and/or human health. The EPA found that the sampled discharges with the greatest potential to impact surface water quality included deck washdown, fish hold effluent, graywater, bilgewater, and marine engine effluent.

Though these discharges may have the potential to impact surface water quality, particularly on a localized scale, a screening level model of a hypothetical large harbor by the EPA revealed that most of these discharges in and of themselves would not exceed levels set forth within the national water quality criteria in large water bodies. While environmental groups are lobbying to end the moratorium and exception for vessels

under 79 feet, the hard data does not appear to justify additional regulation for small vessel operators, unless they are operating in restricted, sensitive waters. That said, and given the trend toward more environmental regula-

tion, Congress may well utilize the EPA's recent study to reach the small vessel and workboat force before long. All of that inevitably will lead to more paperwork and more crew fatigue. And, yes, more acronyms.

Matthew Valcourt is a Partner with Fowler White Burnett P.A. and focuses his practice on maritime law. He handles all types of marine-related litigation and holds a USCG Unlimited Chief Mate and 1600 Ton Masters License. He is Board Certified in Admiralty and Maritime Law, is current Chair of the Florida Admiralty Law Committee and serves as a director to the Massachusetts Maritime Academy Alumni Association. He is a member of the Maritime Law Association, and the Southeastern Admiralty Law Institute.

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SALVAGE

Salvage & the Environment

By Jim Shirley



Marine salvage is often referred to as the first line of defense against the threat of pollution resulting from a vessel casualty. Often the first on site resource providers who have the capability of preventing or mitigating spills from damaged and/or stranded vessels, salvors may accomplish their goals by “keeping the bunker oil and cargo in the ship” while it is refloated, or by safely lightering onto another vessel as part of the salvage process. Ultimately benefiting the salvor whose reward can be based in part on the value of the saved property, the effort also protects the environment, and enables the owners and other interests in the casualty vessel to minimize their liability for pollution damages. In other words: a “win-win” for everybody.

Salvage may also be the last resort available for prevention or mitigation of pollution. If the casualty vessel is abandoned on a desolate shore, a salvor is generally called upon to remove the pollutants. For example, a vessel stranded many years ago on the west coast of Mexico in the Gulf of Tehuantepec was declared a constructive total loss by her insurers and abandoned by her owners. However, she contained substantial quantities of diesel fuel and lube oil that would eventually escape as the vessel broke up in the heavy surf. The released petroleum products might then enter the nearby mouth of a lagoon that had provided shrimp as the primary food source for the native population for many centuries. Salvors were therefore called upon to pump the fuel and lube oil into pits on the beach, where it was burned. Such abandonment of a vessel and low tech disposition might not be allowed today, underscoring the need to first devise an acceptable salvage plan for disposition of any wreck and/or its potentially toxic cargo.

INNOVATION: SALVORS AS PROACTIVE ENVIRONMENTALISTS

Salvors have often been called upon to remove cargo and bunkers from sunken vessels. The method chosen for removal may depend on the depth at which the vessel is sunk and the nature and specific gravity of the liquids to be removed. The ship's manifolds and piping systems may be used for access, as may her vent pipes, or the bunkers or cargo may be released into bladders or lift bags. Since 1970, salvors have removed bunkers or oil and/or chemical cargoes from sunken vessels by “hot tapping” their tanks. This may be done at an early stage of the salvage process, or it may be done simply to remove the potential for pollution from a vessel that has been sunk and abandoned.

In its simplest form, hot tapping is performed by installing a spool piece onto the sunken vessel's deck or other boundary at the highest point on the submerged tank. An open gate valve is attached to the spool piece, and a hydraulic hot tap machine is then installed on the gate valve to cut a circular hole in the vessel at the bottom of the spool piece. The cutter head and cut out disk are retracted and the gate valve is closed. The hot tap machine is then removed from the gate valve and replaced by a hose through which the oil is removed, usually by water pressure forcing the oil cargo to the surface

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where the pumps take over. There are many iterations of this process that allow, for example, for the removal of viscous cargoes or bunkers, and even for some products that are of greater density than sea water.

The Wreck Oil Removal Project (WORP) that is under consideration in a study sponsored by NOAA envisions removing oil from vessels sunk along the U.S. coastline that pose a threat to the environment. Many of these vessels are casualties of World War II, and some are older. Some have already begun “burping” oil, and some are believed to hold substantial quantities. It is expected that these will be prioritized so that those which pose the greatest or most imminent threat will be the first to be tackled. Again, the marine salvage community will be called upon to devise the planning, and to provide the special equipment and expertise to enable these removals.

Some years ago, an American Salvage Association (ASA) member was hired by the Canadian government to remove the cargo of oil from a large barge sunk in deep water north of Prince Edward Island. In that case, the removal of the oil was performed by relying on its buoyant forces to provide a portion of the lift required to raise the entire barge, cargo and all, high enough to slip a semi-submersible heavy lift transport vessel under the barge and bring it to the surface. The barge was then taken into port where the cargo could be heated and removed from the barge. Just one of many examples of how salvors use their skills and resourcefulness, combined with sound engineering, much more of this will likely be seen during the operational phase of WORP.

SPECIAL CIRCUMSTANCES: SPECIAL COMPENSATION

The United States was the first major maritime nation to ratify the 1989 Salvage Convention, largely because of its environmental protection regime. The Convention requires both the shipowner and the salvor “to exercise due care to prevent or minimize damage to the environment.” It also provides that the salvor’s award shall be based in part on his, “skill and efforts...in preventing or minimizing damage to the environment.” Most important, perhaps, is that it encourages the salvor to stay with the job even when under traditional “no cure – no pay” principles it will have become a money loser. It does this by providing for “special compensation” to be paid to the salvor in those cases in which a vessel “by itself or its cargo threatened damage to the environment” but the salvaged values were insufficient to enable a sufficient award to

cover his expenses. The special compensation is based upon the salvor’s expenses in performing, and where the salvor can show that his operations actually prevented or minimized environmental damage, the award will be increased by as much as 30%, or, in some cases, up to 100% of those expenses. Contracts for salvage work may also provide for rewarding environmental protection.

OPA-90 EVOLVES: NEW SALVAGE AND MARINE FIREFIGHTING REGULATIONS EMERGE

The U.S. Oil Pollution Act of 1990 (OPA-90) also envisioned salvage responders playing an important role in protecting the environment. It required tank vessel operators trading in or to the U.S. to list salvors of their choice in their vessel response plans (VRPs). Unfortunately, there were at first no particular requirements that such “salvors” had to meet to qualify for this listing. As a consequence, despite the relatively few qualified salvage companies available, there were hundreds of organizations listed in the many VRPs on file with the Coast Guard. When casualties occurred, bona fide salvors had to be called in to respond, sometimes resulting in delays while owners tried their homespun techniques. Even where qualified salvors were listed, it was often pursuant to an agreement that did not require actual performance, leaving the casualty vessel owner free to shop for and negotiate contract performance terms, thereby resulting in delays while the environment was at risk. In February 2011, this changed with the implementation of the new Salvage and Marine Firefighting Regulations, consistent with the spirit and the requirements of OPA-90. This regulatory scheme puts the onus on the owners of tank vessels operating in or to the U.S. to list salvors in their VRPs who meet certain specific criteria that are spelled out in the regulations. These criteria relate to their proven track records as professional salvors, personnel and equipment resources, and proven ability at timely response. Tank vessel owners must have such an entity under contract in each Captain of the Port (COTP) zone in which the applicable vessel operates. That contract must also include a funding agreement that is in place from the outset, so that time is not lost negotiating the terms of the response. This would appear to fix many of the problems experienced over the past twenty or so years, enabling speedier responses to all vessel casualties by salvors with the resources to respond, perform and who are prepared to do so at all times. The environment will surely be a beneficiary.

Behind the Green Curtain

By Joe Hudspeth



It appears as though Jim Henson's frog was in fact right; it really is not easy to be green. By now, all are aware that being green, eco-friendly, or environmentally sensitive is a part of everyone's social responsibility. Those who choose to overlook any accountability will eventually be compelled to clean up their act by forthcoming legal force and regulations. And yet, those who are eager to do their part are often bewildered by the mission and the many questions that arise. It doesn't have to be that way. Here's why:

GREEN TECHNOLOGY: WHY, WHEN AND HOW...

Boat builders and naval architects are often the recipient of eco-related questions. These include: Is green technology available for my application? Should I wait for more stringent regulations to develop? Can I even afford green technology? When seeking a new or replacement vessel, these issues cannot be ignored. Nearly every new construction inquiry received by boat builders today now includes some element of eco-friendly features in the list of the requirements. When grant money and federal funding is involved, there are often stipulations that force the customer to pursue environmentally friendly technology. But, as much as everyone would like to be able to purchase and construct this beneficial equipment, it isn't always available in an "off-the-shelf" package. As such,



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Above & Below: Installing and retro-fitting an exhaust particulate filter system can create many space constraint challenges.



this uncertain state leads many into a holding pattern.

For now, the future of going green is still resting in the hulls of the eco vessel pioneers who are spending time, money, and countless hours of engineering. Pioneers who get it right will change the maritime industry forever. For the common fleet, viable and reasonably priced green solutions are in place today that can be installed on any vessel and make it a shade or two greener. Getting greener IS getting a little easier, after all.

IN THE ENGINEROOM


Going green to the extreme starts with the propulsion system. Conventional propulsion systems will have to change if emissions are to be reduced. The EPA certainly is having their say in what changes need to be made, but some operators are trying to diminish their carbon footprint even further. These eco pioneers are exploring technologies that include, but are not limited to, solar cells, wind turbines, lithium ion batteries, hydrogen fuel cells, and LNG powered engines. With these new technologies, however, the verdict on viability is still out. That said, and until more is known, the hybrid approach seems to offer some measure of reprieve.


Although hybrid technology is not yet available across the entire horsepower spectrum, diesel-electric configurations and dual input power take-in transmissions are entering the marketplace and can be sourced from several propulsion system suppliers. Hybrid solutions will require additional generator and battery power sources as well as the installation of electric motors. The ability to run solely on electric power can eliminate emissions completely, but for only short periods of time.

Eco-alternatives for propulsion systems typically consume large amounts of vessel real estate and can add considerable weight – two areas often in short supply in today's busy and multi-missioned workhorse platforms. The challenge to the builder and architect often becomes one of accommodation and, sometimes, the end user must be willing to accept the possibility of lower speed and performance as a tradeoff. Once the footprint issue is solved, the problem evolves into an operational issue with the assignment to make it all work prop-

Table 1: Greenship Considerations

Design Consideration	Downstream Benefit
Hull Design	Select a hull design that has been optimized for efficiency with a CFD (computational fluid dynamics) analysis.
Hull Material	The recyclability of aluminum has been embraced and Alcoa estimates that 75% of all aluminum ever produced is still in use today.
Propulsion System	Seek the most efficient, consider physical size and weight.
Bottom Paint	New coatings are kinder to fish, remove marine growth, and enhance vessel performance.
Fuel System	An accurate and finely tuned fuel flow meter can help operators hone in on the most economical cruising speed.
Exhaust	After treatment systems and particulate filters are commercially available and substantially reduce harmful emissions
Windows	Consider tinted glass, dual pane construction, and UV-resistant window film to mitigate heat gain and loss.
Interior Finishing	Request flooring and upholstery made with sustainable materials like wool or from recycled content. Wall coverings and furniture made from aluminum honeycomb panels are lightweight, long lasting, and recyclable.
Lighting	Investing in LED lighting is more expensive than compact fluorescents, but power use is low, bulb life is long, and they have very low impact on heat gain.
Waste	A wide range of zero discharge and wastewater treatment systems are readily available. For other refuse, consider installing trash compactors and allocating space for an onboard recycling station.




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BOATBUILDING

Eco-alternatives for propulsion systems typically consume large amounts of vessel real estate and can add considerable weight – two areas often in short supply in today's busy and multi-missioned workhorse platforms.

erly. A common problem that can surface when attempting to mitigate emissions pertains to high amounts of back pressure that build within the exhaust system when equipped with a particulate filter or after-treatment system. Excessive back pressure can decrease performance and shorten the time before overhaul. Engine manufacturers are aware of this reality and will either have to accept and deal with this consequence or insist that modifications be made to the exhaust system. Such modifications then reduce the effectiveness of the filter and treatment system.

GREEN: TOP TO BOTTOM, END TO END

The green mindset should not only be focused upon the engine room. Other areas around the vessel can also benefit from the latest green developments. Taking the time to properly consider and calculate the heating and air conditioning load as it directly influences power demand and generator size – and getting it right the first time – can reduce vessel weight, fuel consumption, and emissions. The benefits of tinted glass are well known, but dual pane glass is also a practical option for reducing heat gain in both frame windows and direct glaze applications. Consider applying UV resistant window film for a final layer of heat gain defense. If heat loss is the threat, sustainable wool-based textiles can be used for window treatments and any other upholstery needs. Wool-based textiles also work well for floor coverings. Another flooring substitute is vinyl flooring made of recycled content.

Current and impending regulations will ultimately eliminate the use of copper clad bottom paints. Coating suppliers have acknowledged the need for an environmentally friendly solution and a wider range of suitable alternatives are now offered. Some of the new high performance bottom paints claim to not only keep the hull clean, but also enhance speed and fuel economy. Simply by choosing the right bottom paint the vessel's carbon footprint will shrink accordingly.

Designing an eco-friendly vessel is a complex process, but there are conventional ways to go green from the keel up. Table 1, on the previous page, provides the details.

ALL IN OR WAIT AND SEE?

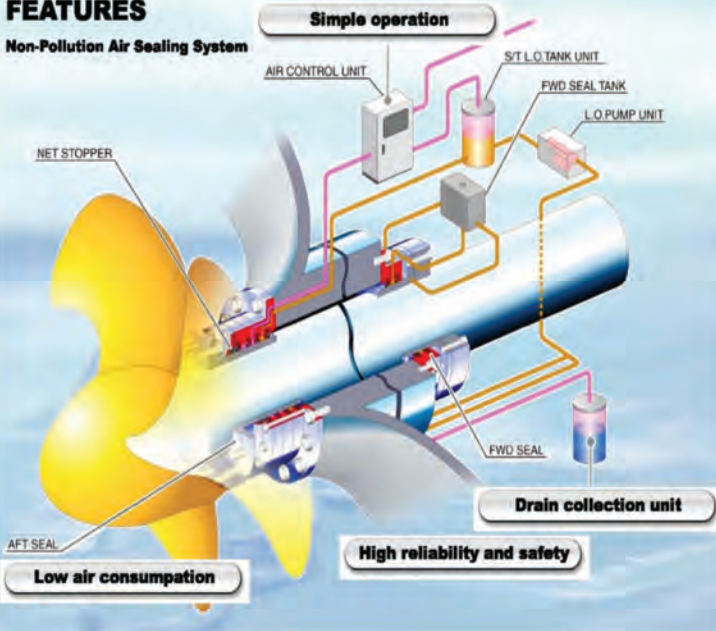
It is an exciting time to watch the pioneers put forth all the capital (and sweat equity) to see if their new eco developments will fly or flop. Ultimately, however, making a difference one vessel at a time is not going to cut it. Everyone will eventually need to buy a ticket and climb aboard the green ship (or workboat). Until then, however, and until operators can visualize the translation of environmentally correct (green) operations into greenbacks, the process will largely be governed by the weight of the regulatory hammer.

Unfortunately, the marine industry tends to lag as a frontrunner, but perhaps the delay is only due to the pursuit of technology that really works and not just for show and tell. Progress on the water, perhaps until as late as the 1990's, was chiefly measured in terms of size alone – increases in deadweight, LOA, draft, and other similar metrics. Up next was the technology boom, where equipment and automation long employed ashore finally made it up the gangway. Sure to complete that cycle is the environmental stewardship now taking hold on the waterfront. It's still not easy being green. Someday, though, it will be profitable.

Joe Hudspeth is Business Development Manager at All American Marine, Inc., a manufacturer of high speed passenger ferries, excursion vessels, and work boats, in Bellingham, WA. Hudspeth has over ten years of marine related experience in sales, marketing, and product development. He currently serves as a regional co-chairman for the Passenger Vessel Association and participates regularly on several committees concerned with marine related issues. Joe can be reached at jhudspeth@allamericanmarine.com.

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Ocean Towing with Z-Drives

Western Towboat leads the way with tractor tugs — by Raina Clark

For a first-hand look at how tractor tugs are used for ocean towing on the West Coast, I took a ride on the first Titan class vessel built by Western Towboat out of Seattle, Wash. The 108-ft Western Titan was built in 1997 with stern Azimuth drives. She pulls a container barge the size of a football field on a tow line from Seattle to Skagway, Alaska, making several port calls along the way and traveling through both the inside passage and waters more open to the Pacific Ocean. On a contract with Alaska Marine Lines, the Western Titan supplies Southeast Alaska with industrial and consumer goods — everything from cars, construction equipment, mail, explosives and containers.

FIRST IN: EXPERIENCE COUNTS

Captain Chris Lickey runs this route regularly with the

Western Titan and has been driving tugs for more than 20 years. “Western Towboat was the first to do line hauling with a tractor tug, to the best of my knowledge,” he told me on the first day of my trip. “The biggest strength of tractor tugs is the ability to back down and maintain control.”

The Titan class vessels are regularly able to flop alongside their barges and bring them into port without the assistance of a harbor tug. “It will be blowing 40 knots when we get to Ketchikan and we’ll bring the tow in ourselves,” Lickey told me as we neared the first stop on the tug’s route. “I’ve been on a tractor tug when it was 70 knots and gone unassisted. You wouldn’t dream of doing that with a conventional tug. One of the hardest things with a conventional tug is to get the tow stopped.” That, and “backing into the wind is brutal,” he said.

The Western Titan, the first in the Titan class of tractor tugs built by Western Towboat (Seattle, WA) for line hauling barges up and down the West Coast

Western Titan Specifications

Type	.Z-Drive
Length	.108 Feet
Breadth	.35 Feet
Depth	.108 Feet
Gross Tonnage	.94
Main Engine	.Caterpillar
Model	.3516-B LS (2)
Horsepower/RPM	.4500/1600
Radio Call Sign	.WCX-4599
Reduction Gears	.Ulstein Z-Drive
Year Built	.1997
Propeller	.100x120 Nautican Nozzles
Generators	.Caterpillar 3306 135KW (2)
Fuel Capacity	.140,000
Lube Oil Capacity	.1,200
Tow Winch / Wire	.Burrard / 2600 ft, 2.25 in.
Port of Registry:	.Seattle, WA



(Photo: Raina Clark)

**THE RIGHT TECHNOLOGY:
WITH CAUTION**

Z-Drives may be the right technology for a number of applications, but there are issues to consider. The drives are dynamic and have a significant impact on the way the tug rides. Consequently, the hulls of the Titan class vessels are built for stability and want to ride at the surface of the water instead of cutting through the waves.

Capt. Lickey described the Western Titan as “rolly” and I have to agree. A small correction of the drives set the tug rocking — port, starboard, and then port once more before settling into its new course. Small swells of three or four feet, the kind we had encountered as we entered the more open waters of Queen Charlotte Sound off Canada, really got the boat swaying.

LESSONS LEARNED

After the Western Titan, Western Towboat began building its Titan class vessels with bilge keels, or rolling chocks, to counteract the “rolling” effect of their wide, rounded hull shape. Bob Shrewsbury, co-owner of Western Towboat, along with his brother Ric Shrewsbury, said other issues they have encountered include the necessity to overhaul Z-Drives sooner than conventional drives. Because of the design of the Z-Drives themselves, operators may not get as many hours out of the gears and bearings. However, he said, the secret is to buy a bigger unit than you think you need. Because ocean towing vessels operate on a continuous duty cycle, operators will want a drive with enough horsepower to keep it from always having to operate at the top end of its torque. This is the lesson learned from the Western Titan, which had its drives replaced with

higher capacity units early on.

Still, according to Shrewsbury, maintenance and repair on Z-Drives is not much more complicated than conventional tugs. “It’s all just gears and bearings,” he said.

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Beyond having the right tools to work on the drives, Western Towboat's engineering personnel have received training under the drive manufacturers and learned through experience in the shop.

Obviously, Western Towboat is satisfied with its decision to go with tractor tugs for ocean towing, despite the learning curve. The sixth tug in the Titan class is currently under construction and scheduled to launch in late October. It's expected to be working by the end of the upcoming holiday season.

NEW APPLICATIONS: WESTERN LEADING THE WAY

Shrewsbury said although using tractor tugs for ocean towing was unusual back when his company began building them, the use of Z-Drives in towing applications has slowly begun to catch on. Lickey pointed out that Azimuth drives are

finding their way into more applications and being used in DPS vessels in the Gulf of Mexico and even cruise ships, making harbor assists less necessary for simple dockings. "I think more towing companies down the road will start using these drives," Lickey said, "but Western Towboat is definitely out in front on this."

Shrewsbury and his brother both drive tugs and before they began building the Western Titan they could see the potential the drives had for all kinds of work. Western Towboat's first tractor tug was the 72-ft Westrac, built in 1988. "We didn't see why we couldn't do it in a larger vessel," Shrewsbury said. Another reason the company turned to tractor tugs was the potential for re-sale. "We were spending a lot of money to build the Western Titan and we thought if we had a large Z-Drive tug we could sell it anywhere else in the country or even other parts of the world."

Shrewsbury added, "There's not a lot of people jumping up and down for used conventional tugs these days, and there's not a huge difference in price between building a Z-Drive over a conventional tug."

Z-DRIVES: PROVING THEIR METTLE AND UTILITY

My trip on the Western Titan stretched four and a half days, from Seattle to Juneau. At my final stop on Western Titan's route, the captain was presented with a perfect, if unsolicited, opportunity to demonstrate the benefits of Z-Drives in potentially dangerous situations. The Titan, tied to the side of her barge, began entering the Port of Juneau when a cruise ship pulled anchor and started leaving its dock. The cruise ship then requested a port to port, but, in Captain Lickey's judgment; there was not enough room to pass safely. Lickey bailed out, reversing the tug's drives, stopping the massive barge it was tethered to and backed out of the port until the traffic had passed. "That would not have been possible in a conventional tug," Lickey said.

If the use of Z-drive tugs in open water and/or long distance towing situations is not yet prevalent, it is not because the revolutionary tractor vessels haven't shown their value. The leadership of Western Towing, coupled with the experience of their seasoned captains, has put to rest any doubts in that regard. As Z-drive tugs continue prove their mettle in any number of roles, what better place to demonstrate those capabilities than in the icy and sometimes bumpy waters of the inside and outside passages to Alaska?

Raina O Clark is a journalist and communications consultant for the maritime industry. Contact Raina at raina@rainaoclark.com.

The latest Titan class tug under construction at Western Towboat is scheduled to launch in late October. The bilge keels visible toward the front of the hull help offset the "rolly" effect of the hull shape necessitated by the Z-Drives.



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GOM Environmental Update

BP's Spilled Oil Has Mostly Vanished But Marsh Cleaning Continues

— by **Susan Buchanan**

Much of the oil that entered Gulf of Mexico waters from BP's wellhead last year has disappeared from view, though unknown amounts remain near the ocean floor, scientists say. Marshes in a few coastal areas are saturated with oil, however, and cleanup work continues in those spots. Still, remnants of the spill – tarballs and mats in the surf and an occasional sheen on the water – have posed no real threat to navigation this summer.

NOAA USES A BUDGET TO EXPLAIN DISAPPEARANCE

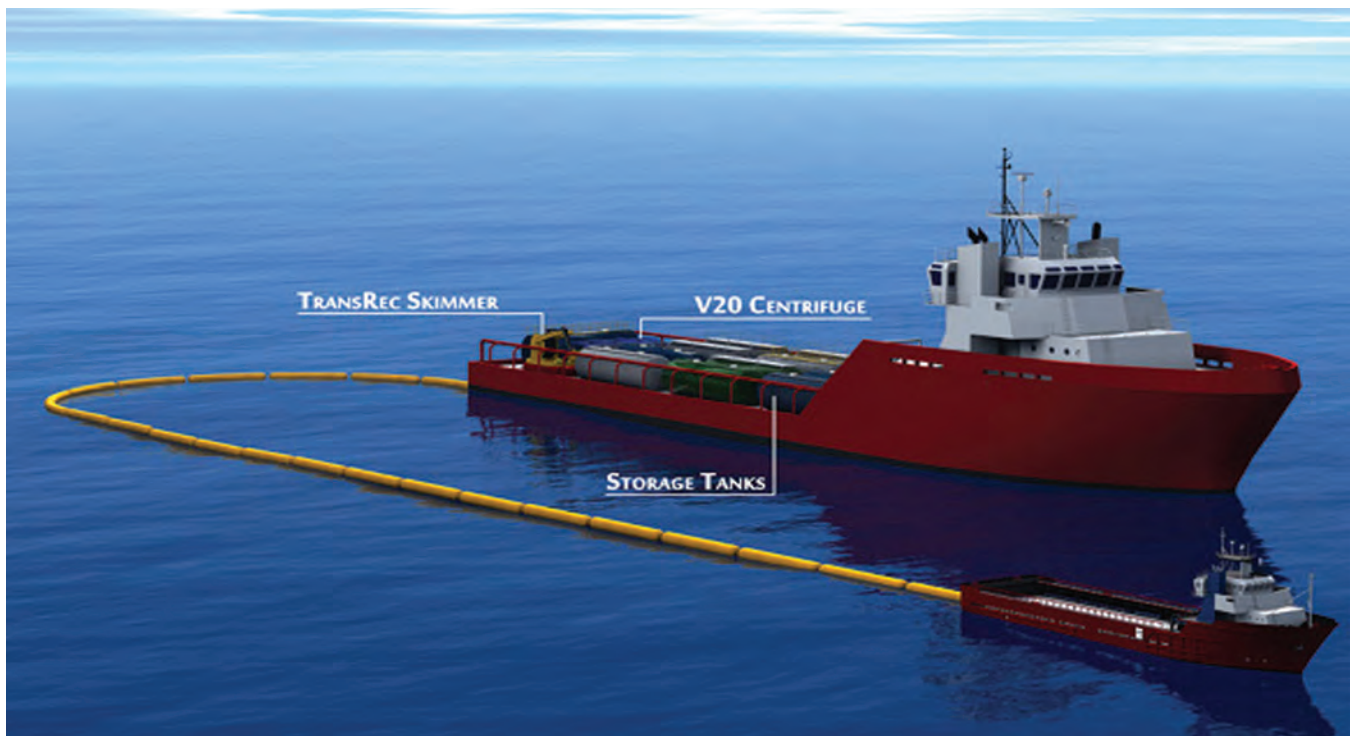
A share of the spilled oil vanished on its own, without the help of chemical dispersants and skimmers that were used to get rid of it in mid-2010. Last November, the National Oceanic and Atmospheric Administration revised its budget of what happened to BP's spilled oil, and estimated that 23% of it evaporated or dissolved, 17% was directly recovered at the site, 16% was chemi-

cally dispersed, 13% dispersed naturally, 5% was burned at sea and 3% was skimmed. Another 23% was classified as having disappeared by “other” means.

When asked about evaporation, Doug Helton, NOAA Seattle-based environmental scientist and Incident Operations Coordinator for the agency's Office of Response and Restoration, said “Hydrocarbon chemicals can dissolve in water. Before oil from the BP well reached the sea surface, some fraction of it had dissolved in the water column, and some of the oil that reached the surface evaporated.” The Macondo well spewed oil into the Gulf from 5,000 feet below the surface.

Helton said that various types of oil behave differently. Louisiana's light, sweet crude dissolved in warm Gulf water faster than, for instance, the heavy crude in the 1989 Exxon Valdez accident in Alaska. “If gasoline in a lawn mower spills onto a driveway, you don't see it the

Skimmer in action.



(Courtesy U.S. Coast Guard)

next day," he said. "But a car engine dripping oil onto a driveway leaves a stain because that doesn't evaporate quickly."

Helton weighed in on the estimated 13% of BP oil that naturally dispersed. "Significant dispersion of oil occurred near the wellhead," he said. "Oil can naturally disperse into droplets in the water column as it floats towards the surface," he explained. "When oil from the BP well reached the surface, wave action and surface turbulence also broke it into droplets. But these can form into slicks when the turbulence stops."

He continued, saying "when you make salad dressing, it's a uniform mixture in the blender, but when you stop the machine some of the oil floats to the surface. If the dressing sits awhile, some of the oil separates into a surface layer."

The "other" category in NOAA's oil budget is a sizable catchall that includes oil that sank after mixing with sediments, or that remains along the shore or in the surf zone or that became tarballs and mats. The oil that sank and remains near the ocean floor is "out of sight, out of mind" for some Gulf residents, and many of the region's beach goers ventured into the sea in 2011. But marine scientist Samantha Joye of the University of Georgia and other researchers say they've seen considerable amounts of oil and byproducts, along with oil-suffocated creatures, on the Gulf floor near the Macondo well.

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“BP oil in near-shore tar mats will keep washing up as tarballs for some time to come — for one or two years. But those occurrences are infrequent and not much of a threat. No oil from the deep Gulf will impact any near-shore areas.”

Ed Overton, Louisiana State University, emeritus professor of coastal sciences

including oil eaten by microbes, wasn't included in NOAA's calculator. Bacteria capable of degrading various groups of hydrocarbons have been found in all oceans, however, according to the agency. Helton said “natural microbes live in the water column, and over time break down oil into carbon and oxygen. It's like wood in a forest that slowly decays into organic nutrients.”

On August 1, the Woods Hole Oceanographic Institution in Massachusetts released the results of a team study conducted last summer on samples from the surface BP oil slick and surrounding waters. The team found that bacterial microbes inside the slick degraded oil at a rate five times faster than microbes outside the slick. That helped the slick disappear three weeks after the Macondo well was shut off, they said. WHOI researchers aren't sure what fraction of the oil that disappeared was due to microbial consumption, since other processes – including evaporation, dilution and dispersion - were also at work. Nonetheless, an observed, five-fold increase in the microbe respiration rate appeared to contribute significantly to the breakdown of oil, WHOI said.

NOAA'S WORK IS ONGOING

NOAA said in November that pure scientific research can be done on oil spills, but most spill research is applied science. Budget calculators are only useful if they provide information that assist in policy decisions, the agency said. A NOAA shoreline survey, looking at stranded oil, subsurface shore oil and oil mats, will continue through the end of this year, Helton said. “We're involved in the ongoing cleanup of actionable oil along shorelines and marshes. Some areas are straightforward to clean, but there are three or four localized areas that are pretty challenging for cleanup operations.”

In Louisiana's Barataria Bay, “Bay Jimmy still has visible oil soaked in the marsh that's difficult to recover without

doing harm,” he said. “It’s like spilling red wine on a shag carpet, you can get it out, but the rug might be damaged.” And, at South Pass near Venice, La., oil is mixed into sandy shell beaches, and at Middle Ground in south Louisiana, cleaning is difficult because of oil mixed with natural organic material along the shoreline, Helton said. He added, “Marsh areas are important to bird habitat, and as bird nesting season wraps up this month, cleaning that was on hold in some areas can resume.”

NOAA has additional, spill-related work to do. “We’ve taken sediment samples around the BP well and going out several 100 kilometers from the well--to see where oil is deposited,” Helton said. “While trace amounts of hydrocarbons in deepwater sediments were detected, they may not be feasible to remove.”

He said “the Natural Resource Damage Assessment process, which will take several years to complete, is examining oil on the sea floor and whether anything should be done about it.” Under the NRDA process, required by the Oil Pollution Act of 1990, federal and state agencies hope to return natural resources in and along the Gulf to pre-spill conditions. Scientists involved in the NRDA have collected data, and restoration ideas have been solicited.

BP SAYS 98% OF ITS DEEP CLEANING DONE

When asked how clean Gulf waters are now versus thirteen months ago when the well was capped, Curtis Thomas, Louisiana-based spokesman for BP’s Gulf Coast Restoration Organization, said “Scientists tell us the water is clean, the air is safe, and seafood is plentiful and safe and healthy to eat.” He continued “our

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deep cleaning efforts are about 98% complete. Many of those areas that have been cleaned are now being monitored by crews that are ready to respond if necessary.”

Curtis said more work needs to be done on certain environmentally vulnerable areas, including marshes. “We have relied on science to help us in our efforts to clean those areas. Work on some of the barrier islands was halted by government entities because of sensitivities like bird nesting seasons.” Once those restrictions are lifted and cleaning plans are approved, cleanup efforts will resume.

“All of the beaches that were affected by the spill have undergone significant amounts of cleaning, and one Grand Isle, La. official says his beaches are cleaner than

he's ever seen them,” Curtis said. “We're still monitoring areas of the shoreline for occasional tar mats that wash up on the beach. We have crews available to respond and clean tar mats when they're reported or sighted.”

BP's Vessels of Opportunity program, employing fishermen and others with boats, continues in a scaled-down fashion. “At the height of the response, we had 6,500 vessels operating in the Gulf,” Thomas said. “Today, 100 vessels are associated with our ongoing restoration and recovery efforts, and many of them are used for transportation services for scientists and other restoration personnel.”

Thomas said “BP agreed to fund a trust of \$20 billion over three and a half years to satisfy legitimate individual,



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business and government claims, along with litigation judgments, settlements of litigation, natural resource damages and state and local response costs.” The fund was established in June of last year. BP had paid over \$7 billion in spill-related claims to individuals, businesses and governments by late August, he said. Of that total, the Gulf Coast Claims Facility, administered by attorney Ken Feinberg, had paid out \$5 billion as of August 23 on over 203,000 business and individual claims, including part of a \$54 million fund for Gulf real-estate brokers and agents.

At Louisiana State University, Ed Overton, emeritus professor of coastal sciences, said “BP oil in near-shore tar mats will keep washing up as tarballs for some time to come—for one or two years.” But those occurrences are infrequent and not much of a threat, he said. “No oil from the deep Gulf will impact any near-shore areas,” he predicted. Nonetheless, cleaning of oil on Louisiana’s coast could continue for another one to three years, he said. Captain Mike Lorino, president of the Associated Branch Pilots in New Orleans, said remnants from last year’s spill—tar mats, tar balls and sheen—have not affected vessel traffic off of Southeast Louisiana this summer, and added “that’s a great thing.” He added, “The only thing I hear is there’s still a little oil in the marsh.”

At the U.S. Coast Guard, public information officer William Benson in New Orleans said “This summer, there have been no reports of vessels that were oiled or needed to be decontaminated as a result of the MC-252 or Macondo spill.”

While marine scientists report considerable amounts of oil and byproducts on the Gulf floor near the

Macondo well, a few studies from universities and other researchers point to a fairly successful cleanup effort to date. The NRDA process will help determine the prognosis for the Gulf coastline, industries and related marine activities, and decide what needs to be done to return the

region to pre-spill conditions. Looking back, today’s much-improved situation seemed an unlikely one a year ago. That’s nominally good news for the maritime industry and the oil patch, but further cleanup and environmental assessments remain to be done.

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Critical Inland Repairs

Industry hopeful Markland project delivers promised financial, efficiency metrics.
— by Joseph Keefe

The Markland Locks and Dams on the Ohio River is one of the most important pieces of infrastructure, key to the continued success of inland transportation and, by default, the American economy itself. At the same time, it has also become perhaps the poster child for U.S. inland infrastructure woes. Just one of dozens of inland waterway repair projects remaining uncorrected, as much as \$11.6 billion dollars of commerce annually pass through these critically located locks and dams. Built and completed in the late 1950's and in need of repairs since 2000, the Waterways Council, Inc. – the national public policy organization that advocates for a properly funded and well-maintained system of inland waterways and ports – has given the locks and dams a “D” rating.

Two of four lock gates collapsed last year. A project currently underway to replace them, using new and highly innovative technology, could also serve as the model for how these improvements and repairs are performed and funded in the year to come. The health of the inland waterway system may well hinge on its success. Separately, Michael Toohey, the new President and CEO of Waterways Council, told *MarineNews* in August, and referring to a different project, “The use of experimental engineering techniques has apparently driven the project financials to an unsustainable level for the Inland Waterways Trust Fund and those users required to pay these costs.” At the Markland project, however, both the Army Corps of Engineers and the manufacturer of an



(Photo courtesy of Climax Portable Machine Tools)

innovative new milling device are predicting significant cost savings and markedly reduced repair times.

NUTS & BOLTS

As part of the original refurbishment project, the quoins on the lock doors were to be re-machined. Climax Portable Machine Tools subsequently won a contract to design and develop an innovative vertical milling machine to tackle the project. According to Climax, the mill is to be attached to the door and be remotely controlled to travel the length of the doors, removing up to 1.5-inches of materials over multiple passes. This milling machine, assuming all goes according to plan, not only will enable Army Corps of Engineers machinists to smooth the structures' surfaces so they will operate better and not leak, but also to complete the repairs on site within the 17-day timeframe. The traditional method for making this repair may have taken more than a month. Moreover, the machine's portability, able to be moved via barge or trucks, will speed it long to other projects quickly.

SHOW ME THE MONEY

Funded in part by pleas to Congress and Inland waterway user fees, the total cost of the Markland project is said to be estimated at just over \$37 million. Interestingly – and in a rare turn of good news for the domestic waterfront long ignored by the Obama Administration and the U.S. Department of Transportation itself – as much as \$8.4 million of this will be underwritten by ARRA funding.

Using the new Climax machine, the Army Corps is predicting far less man hours will be needed to complete this initial project. And, since for every day that the lock is closed to traffic, the costs to commerce and ultimately the U.S. consumer is more than \$1 million. The conventional method to repair the dams and locks would take somewhere between 45 to 60 days, hence the estimated 17 day repair job using the new tools and techniques, taking into consideration man hours and down time for the waterway, could produce as much as \$61 million in savings on the Markland job alone.

The Army Corps of Engineers considers this new method of machining the quoins a best practice in how future repairs could be done. It not only is more efficient, and less disruptive to river traffic, but will save an estimated \$50 million in labor and transportation costs on each future job. More importantly, the Army corps has purchased the device for use on future projects. Now

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Key Facts

Markland Locks & Dams

Location:	Ohio River Mile 531.5, near Warsaw, Kentucky
History:	110' x 1200' lock; 110' x 600' auxiliary lock (both 1959).
Annual Cargo Transited:	55.6 million tons
Value of Annual Cargo Throughput	\$11.6 billion
Cargo Types:	Coal, petroleum, iron/steel, chemicals & aggregates
Projected growth (*)	To 68.8 million by 2030
Failure of main chamber miter gate occurred:	2009
Industries Served	Electric utilities, steel/iron ore commodities, aluminum smelters
WCI's Current Performance Rating	"D"



Climax Machine being assembled and tested.



ect has the potential to demonstrate that innovative and cost-effective methods for making repairs are available. Those responsible for funding infrastructure need to know that their money is being put to good use. As such, this may be one of the most critical infrastructure projects in the country – certainly on the U.S. domestic waterfront – that is underway anywhere today.

DOWN THE RIVER

In the U.S. Army Corps of Engineers' Louisville District alone, as many as five projects await action. With some delays already experienced at the Markland site – none of them related to the use of the new Climax technology and tools – the current project, according to U.S. Army Corps. Personnel, is scheduled to complete in mid-November. At that point, and now in possession of a tool that promises to bring a new economy of scale to future waterway infrastructure projects, the speed at which these projects can be completed could be about to increase, while the costs go dramatically down. Only time will tell.

It would not be an understatement to say that what happens at the Markland Locks and Dams refurbishment this fall will go a long way to defining what is possible in other places, going forward. WCI's Michael Toohey said recently, "Hopefully it will be nothing but good news from the world's premier engineering organization. Maintenance of critical infrastructure has not been given the funding priority needed. With facilities long past their original design life, it is a miracle and a tribute to the dedication of employees of the U.S. Army Corps of Engineers that what we take for granted actually continues to function."

A successful, cost effective and timely completion of the Markland project will certainly be a testament to the skills of the U.S. Army Corps of Engineers. It will also happen largely thanks to new equipment and technology made possible by Climax Portable Machine Tools. The project is being watched closely by industry, lawmakers and river users alike. That includes some 37,000 inland tugs and associated barge equipment. Now, what happens next will make all the difference. There's no room for error.

On the WEB:

Climax Portable Machine tools, Inc. — www.cpmty.com
U.S. Army Corps of Engineers — www.usace.army.mil
Waterways Council, Inc. — www.waterwayscouncil.org

being trained by Climax employees to use the machine, the new methods are forecasted to produce significant economy of scale for other pressing projects.

ALREADY UNDERWAY

According to the Army Corps of Engineers, the Markland Lock Rehabilitation project was initiated in 2007. The project includes new miter gates, new culvert valves, a gate storage pier and a miter gate assembly. Installing the new gates will be time consuming, according to Dowell. The task includes use of a custom-built portable milling machine by Climax Portable Machine Tools. The portable milling machine is what will mill the quoins on the lock doors or gates.

The machining portion of the project has already begun, with Army Corps of Engineers and the Climax team that developed the machine both in attendance. Obviously, with funds for infrastructure repairs becoming scarce, the money that is available needs to be used wisely. This proj-

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Not all Fluids are Created Equal

Why some fluids rise above the rest when put to the test.

by **Chauntelle Baughman, CFPHS;**
Hydraquip Distribution, Inc.

Recycling. Reducing your carbon footprint. Installing fluorescent light bulbs. Everywhere we look, the world is making great strides to 'go green', and the hydraulic world is keeping up. Over the past several years there have been major efforts made by manufacturers world-wide to promote a greener image, and in doing so reduce the impact on the environment they are working in. Furthermore, regulations are being passed globally requiring those working in or near waterways – whether they are rivers, ponds or even oceans – to respect the wildlife who calls that area home.

There are two primary standards of biodegradability – inherently biodegradable and readily biodegradable. All fluids are biodegradable, meaning they break down within some undefined span of time. According to the U.S. Army Corps of Engineers, a hydraulic fluid is classified as readily biodegradable when 60% or more of the material is decomposed in 28 days. This is a very important distinction to make when selecting a fluid.

While some fluids are biodegradable, that does not necessarily indicate that they are also non-toxic. A hydraulic fluid is considered non-toxic if a specific ratio of the hydraulic fluid to water is used and less than 50% of the test organisms die within 96 hours. To meet most new regulations, both the standards for biodegradability and toxicity must be met.

BIOFLUID CLASSIFICATIONS

There are four major classifications of biofluids, each with their own distinctive characteristics, as shown in Table 1. (Seen on the right)

PUTTING YOUR FLUIDS TO THE TEST

Ultimately, there had to be some test or standard that determines which fluid can hold up to challenge. The RPVOT (ASTM D2272 or Rotating Pressure Vessel Oxidation Test), the Cincinnati Milacron Test (ASTM D2070) or TOST (ASTM D943), do exactly that. These tests are used to monitor oils for losses in oxidation resist-

Table 1

HEPG (Polyglycols): These are commonly referred to as 'water glycols'. As a water-based fluid, they offer poor lubricity and can create major performance issues at high heat because the fluid will begin to boil and form steam bubbles, causing cavitation and rust. These fluids are popular, however, in applications where fire resistance is required. It is important to speak with your hydraulic component provider when you know you will be using an HEPG fluid, as it may be necessary to take into consideration that you may need to de-rate the performance of your hydraulic equipment.

HETG (Triglycerides): These are generally plant or animal based oils such as vegetable oil, rapeseed oil, sunflower oil, etc. Unfortunately, many of these fluids do not perform well under high heat conditions, as the oil itself will begin to cook and therefore change its chemical composition. They do offer excellent biodegradability and rust prevention, but you must be cautious when using HETG fluids in high-heat applications.

HEPR (Polyalphaolefins): Only a very limited range of PAO base fluids are readily biodegradable. These formulating restrictions lead to limited shear stability of the hydraulic fluid, meaning the viscosity is progressively lost as it is run through a system.

HEES (Synthetic Esters): These fluids can be broken up into two categories – saturated esters and unsaturated esters. Unfortunately, all HEES Synthetic biofluids are often grouped together despite their significant performance and longevity differences. Saturation is determined by the chemical bonds within the fluid itself. Unsaturated esters have multiple open bonds which interact with oxygen quickly, leading to oxidation (ageing) of the fluid. This ageing is the cause of extreme thickening and gumming of the fluid, along with deposits and shellac, which lead to major catastrophic system failures. Saturated ester products, however, have significantly fewer open bonds, and therefore they do not oxidize and will last much longer in high-heat, intense applications. The iodine number identifies the number of open bonds available, so the higher the iodine number, the greater the number of bonds that can interact and oxidize. Generally speaking, a saturated ester product has an iodine number less than 15.

(Courtesy Hydraquip Distribution, Inc.)

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Panolin labs running tests on Panolin HLP Synth products.



ance and increases in acid levels. It is important to review the TAN (Total Acid Number) in your lab results, as this may provide you with some indication that your fluid is breaking down.

PROVIDING A SOLUTION

Panolin HLP Synth is a fully synthetic, high-performance, readily biodegradable, non-toxic hydraulic fluid made from saturated esters. The Panolin product leaves no sheen when it is spilled on the water, but rather appears as light foam that is visible for easy cleanup. It is able to resist oxidation at high temperatures and high pressures, and prevents gumming and deposits within your hydraulic system. Panolin does not affect conventional sealing materials, and it provides excellent corrosion resistance and wear-protection.

Due to its base composition and saturated nature, some Panolin products are able to last within a hydraulic system for extremely long periods of time without any oil-change requirement, decreasing downtime and maintenance costs. Test documentation shows use of Panolin in equipment for over 130,000 hours without fluid change.

COMMON SYNTHETIC FLUID QUESTIONS

Seal compatibility is always a concern when selecting a fluid. NBR, HNBR, PU and FKM sealing systems are all common in hydraulic systems and react differently to different fluids (even a standard mineral oil) regardless of the classification. It is recommended that you check seal compatibility with your biofluid supplier regardless of fluid type.

Hydrolytic stability is another major factor to consider when selecting a biofluid, particularly for use on or near

large bodies of water. Hydrolytic stability is the ability of a fluid to resist decomposition in the presence of water. Since biofluids typically begin the biodegradation process when exposed to bacteria in water and soil, you certainly want a fluid that will not break down or alter its composition when a small amount of water is present in your system. Edible oils, when mixed with water and heat, are cleaved (bonded) and new chemicals are formed. This is called hydrolytic fat cleavage. The formation of an ester from an alcohol and an acid is called esterification, cleavage in the presence of water hydrolysis, or hydrolytic cleavage. 2

The base oils used in Panolin products are biodegradable esters, and can hydrolyze in the presence of water. A high TAN value indicates that a large number of ester molecules have cleaved. Panolin has proved through numerous lab tests that hydrolysis of the esters used in Panolin products to do not lead to corrosive acids, but rather the acids formed may even improve its anticorrosion capabilities. Furthermore, before hydrolysis of Panolin products will cause any issues in a hydraulic system, the water content needed for that hydrolytic process will cause major cavitation, corrosion and other catastrophic issues. Simply because a fluid claims a high level of stability when water is introduced does not indicate that any hydraulic system will function well with that level of water ingress, and every effort should still be made to keep water out of the hydraulic system. 2 In that same regard, some biofluids will emulsify, or dissolve completely with water. Panolin fluids do not emulsify with water but instead repel water. This separation makes it easy to remove water from your fluids using water-removal filtration. 2

OFFSHORE REGULATIONS & APPROVALS

For those applications where special certifications must be met, Panolin Atlantis is the answer. CEFAS in the U.K. (Centre for Environment, Fisheries & Aquaculture Science) is one of the strictest policy makers in the world, particularly the North Sea. Panolin Atlantis is rated E by CEFAS, indicating that it carries the least potential environmental hazard.

Panolin Atlantis is also registered with OSPAR in Norway. OSPAR (Convention for the Protection of the Marine Environment of the North-East Atlantic) is the basis for national laws governing the waters of the OSPAR states, including many oil-producing states of Western Europe. Panolin is rated OSPAR Yellow, meaning it can be discharged into the water with permission and it has acceptable environmental properties.

VESSELS

Crowley's ATB Ready to Deliver on West Coast



Crowley Maritime Corporation's Vision/650-10, the last of 10 Articulated Tug Barges (ATBs) in the 650-series new-build program, has been delivered by V.T. Halter Marine in Pascagoula, Miss. The ATB is now ready to enter service and will transport petroleum products between U.S. West Coast ports. The Vision/650-10, which has a capacity of 185,000 barrels, will be operated by Crowley's petroleum services group. The Vision/650-10 will carry petroleum products and incorporates many unique features, including a fixed-tank cleaning system, complete cargo heating system and the ability to carry EZ chemicals. The 650 class barges are 27,000 deadweight tons, 587 feet in length, 74 feet in breadth and 40 feet in depth. When coupled for operation the tug and tank vessel measure 689 feet. The fully loaded draft is 30 feet. The new ATBs feature the latest systems technology and double-hull construction for maximum safety and reliability. Barge 650-10, like its sister vessels (650-1 through 650-9), is also certified by ABS to comply with the International Maritime IMO Green Passport program. All of Crowley's ATBs are built under the ABS SafeHull program for environmental protection. This program puts the vessel design through an exhaustive review to identify structural loads and strengthen the vessel structure.

www.marinelink.com

Horizon Delivers FMT's M/V BREES

Horizon Shipbuilding, Inc., of Bayou La Batre, AL, has delivered the third in a series of 120' Towboats to Florida Marine Transporters of Mandeville, LA. The M/V Brees joins her sister ships, M/V's Capt. W. D.



Nunley and Capt. Kirby Dupuis in pushing cargoes throughout the inland waterways of the United States. Named after Superbowl XLIV Most Valuable Player, Drew Brees, the M/V Brees boasts nearly 5000 HP making it one of the most powerful towboats of its size. Like its sister ships, the M/V Brees was designed by John Gilbert and is 120' long by 35' wide with a 10' draft. The towboat is four-decked and is outfitted for service in areas restricted to overhead clearances and draft limitations. She is powered by two 2,450 hp C280 Caterpillar engines coupled to Lufkin reduction gears. Ten inch shafts turn five-blade, stainless steel wheels manufactured by Sound Propeller Services, Inc. that are mounted in kort nozzles for maximum efficiency. Auxiliary power is supplied by two Caterpillar C9 generators.

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VESSELS

24m Cat Ferry Delivered to Fantasea



Incat Crowther has announced the launch, trials and delivery of the 24m Catamaran Ferry Fantasea Sunrise. In June, Incat Crowther announced the sale of the vessel to prominent Great Barrier Reef operator Fantasea Cruises. Since that announcement, Brisbane shipyard Aluminium Marine has tailored the vessel for Fantasea's operation, including interior lounges and the application of striking graphics inside and out. Fantasea Sunrise is fitted with 119 seats in the main deck cabin and 38 lounge seats in the upper deck cabin. The vessel has undergone successful sea trials which proved the virtues of Incat Crowther's highly efficient and stable hull form. The vessel is powered by a pair of Yanmar 6AYM-GTE main engines. Fantasea Sunrise exceeded her contracted loaded service speed of 25 knots, and achieved a top speed in excess of 28 knots.

www.incatcrowther.com

EBDG-Designed Electric River Ferry



A new cable-guided electric ferry, designed by Elliott Bay Design Group LLC (EBDG), began carrying passengers and vehicles across Oregon's Willamette River at Buena Vista. The new electric Buena Vista ferry replaces a diesel powered version which had been in service for more than 50 years. EBDG was chosen to design the vessel, which was built by Diversified Marine of Portland, Ore. The new vessel was delivered in May, ahead of schedule, to Marion County, the ferry's owner and operator. Special consideration was given to shallow river conditions. Because the hull is only four feet deep and the summer time river level is not much deeper, the propellers are mounted on the sides of the vessel, rather than underneath, for protection. The all welded steel ferry has a capacity for 49 passengers and six vehicles.

www.ebdg.com

Great Lakes Shipyard Delivers Two USGS RVs

Two 17-knot high-speed research vessels for the U.S. Geological Survey were dedicated at Great Lakes Shipyard, Cleveland, Ohio, on Wednesday, August 31, 2011. R/V KAHO and R/V MUSKIE will replace two of the USGS's oldest research vessels by the same names that are currently operating on Lake Ontario and Lake Erie, respectively. The U.S. Department of Interior's U.S. Geological Survey's Great Lakes Science Center (GLSC) awarded The Great Lakes Shipyard an \$8.2 million contract for the two vessels in June, 2010. The 14-month project created 41,000 shipyard construction hours, the equivalent of 5,125 man days of employment which is 20 Shipyard jobs for one year. The vessels were designed by Murray & Associates, Fort Lauderdale, Florida; and Alion Science and Technology, Inc, McLean, Virginia, supervised construction.



HMS Global Maritime Completes Purchase of American Queen

HMS Global Maritime completed the purchase of the steamboat American Queen. The riverboat is set to return to America's heartland with voyages set to resume in the Spring of 2012. Built in 1995, the American Queen, at 419-ft. long, offers 222 staterooms and suites that accommodate 436 guests who are attended to by a crew of 160. John Waggoner, President and CEO of HMS Global Maritime said, "I am thrilled that this acquisition is finally complete. It has been a long, windy and challenging road, but we finally made it to the end."

www.hmsgm.com

Signal Contracted to Build Second ATB

Signal International announced the option to build the second articulated tug/barge (ATB) vessel has been exercised by Kirby Ocean Transport Company of Houston, Texas. Signal's continuous flow manufacturing facility in Orange, Texas now has a backlog of nearly \$100m. Engineering, planning and material procurement for the first ATB is on schedule for manufacturing work to begin in the 4Q of this year. Simultaneously, fabrication of the second unit is also slated to get underway before year's end. The ATB vessels are comprised of a 20,000 DWT ocean bulk barge with a 6,000 BHP ATB ocean tug. Each barge measures 480 x 90 x 36 ft. and will be outfitted with Ocean Tug & Barge Engineering's Articouple connection. The 6,000 hp tugboat will be 125 x 42 x 22 ft. built and classed to ABS Maltese Cross, +A1 Ocean Towing Service standards. The ATB's will transport dry-bulk commodities in United States coastwise trade.



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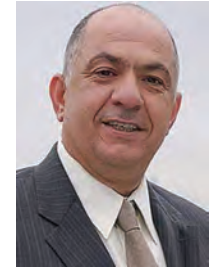
Shank



Berggren



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Markou

SeaArk Marine Announces Retirement of Casmer "Cas" Kirby

SeaArk Marine, Inc. has announced the retirement of Vice President of Engineering, Casmer "Cas" Kirby. Kirby began his career with SeaArk Marine, Inc. in 1991 and was promoted to Vice President of Engineering for the company in 2006. He led SeaArk Marine's Engineering team through some of the most successful periods of the company's history. Kirby will be succeeded by SeaArk Marine's current Engineering Department Manager Ronald "Ronnie" McGehee who is himself a 20 year plus veteran of the organization and has managed the Engineering Department as well as complex projects under Kirby's guidance.

www.seaark.com

Shank Joins SCI's Maritime Education Team

The Seamen's Church Institute (SCI) recently added Captain Christine Shank, a former Kirby Inland Marine captain, to its ranks. Along with the improvement of infrastructure, SCI-Houston's new expert hire reflects the Institute's commitment to enlarge training to meet the needs of maritime industry professionals. Shank attended Texas A&M University at Galveston, graduating with a degree in Marine Transportation and a Third Mate

Unlimited Tonnage license. She also served on the Coast Guard Chemical Transport Advisory Committee with other industry representatives, guiding policy-making and developing emergency response plans for floating vessels.

www.seamenschurch.org

Grundfos Names Berggren Business Development Manager

Grundfos has hired Jon Berggren as a new Business Development Manager to further strengthen the global pump manufacturer's marine sector. Berggren holds degrees in mechanical engineering and marketing and has 14 years of experience in the maritime industry. Most recently, he was Marketing Manager of Commercial Marine at Colfax Corporation. As Business Development Manager at Grundfos, Berggren will provide coordination and continuity of Grundfos sales and marketing efforts within the maritime sector.

www.grundfos.com

Marine Travelift Promotes Erich Pfeifer to President & COO

Marine Travelift has announced the promotion of Erich Pfeifer to President and Chief Operating Officer beginning August 10, 2011. Erich Pfeifer is succeeding the Company's President and CEO for the past eight years, Steve Pfeifer.

Steve Pfeifer will remain Marine Travelift's CEO and will continue to serve the company in a strategic and advisory role. Erich Pfeifer joined Marine Travelift in 2003 as Sales Manager and was subsequently promoted to Sales Director of the Americas and then Vice President of Business Development and Marketing.

www.marinetravelift.com

New York Cruise Lines Names Markous President, CEO

New York Cruise Lines, parent company of internationally celebrated tourism companies Circle Line Sightseeing Cruises, The Beast and World Yacht announced the appointments of Gus Markou to President and Chief Operating Officer reporting to Samuel Cooperman, Chief Executive Officer. Promoted from Vice President of Operations, Markou is a 25 year veteran of New York Cruise Lines and has been instrumental in the growth of Circle Line Sightseeing Cruises, The Beast and World Yacht.

AMPOL Performs Cleanup on Platform Recovery Project

American Pollution control corporation (AMPOL), has completed the oil spill recovery and environmental cleanup on a recovered platform in Terrebonne Parish, announced President Kirk Headley. Located off-



shore then transported to Dulac, La., the once downed platform had to be modified in the air and positioned on a barge to fit under a bridge leading to the recycling facility. Oil spill recovery was performed on the water during the lifting cycle from the ocean floor and during transport when contaminants leaked onto the containment barge – no oil from the base went into the water. AMPOL worked to contain the spill and clean the barge. Before final transportation to Amelia, La. additional cleaning was performed on the barge and platform. The crew for the job included eight on the boat, four on the booms and five for cleaning. www.ampol.net

RESOLVE Marine Group Acquires EBDG New Orleans office

RESOLVE Marine Group, Inc. (RESOLVE) has acquired the staff and assets of the Elliott Bay Design Group's (EBDG) New Orleans, Louisiana office. The addition of for-



SeaArk Marine Temporarily Discontinues Taking New Orders



Military and industrial aluminum boat manufacturer SeaArk Marine, Inc. of Monticello, Arkansas will temporarily suspend acceptance of new boat orders until further notice. Due to sporadic and low (new construction) sales figures for nearly 24 straight months, the company began an overhead reduction plan in an attempt to “ride out” the effects of the current market until substantial improvement in the government & industrial marine sector appeared more apparent.

SeaArk Marine, Inc. is not completely shutting down its operations. The company currently has several boats on order that will continue in construction until those are completed and delivered with factory support and full warranty coverage. The company will also continue fulfilling spare parts orders indefinitely. New orders for repair/refurbish work with short turn-around cycles will continue to be accepted until January 1st, 2012.

“Obviously, this is a very emotional decision for everyone concerned” said John McClendon, President and CEO. “We have recently worked our way down to the minimum amount of fixed overhead we could and still properly serve the market that we compete in. Typical construction time for our products can be fairly long – up to a year or more for some of the larger vessels. This means that very small contracts and ones that continue to be stretched far apart have the potential to keep pushing cash consumption further and further out; eventually beyond financially sound limits.”

“The situation is that SeaArk Marine, Inc. is currently in a positive cash position, no debt whatsoever, and has the ability to keep our employees and vendors paid rapidly. We wanted to be able to continue that position and control those elements long before it became any sort of crisis to manage. Company ownership has struggled with this decision for some time, but this sales downturn is the most severe experienced in the company’s 52 year history. We would not accept a situation where we couldn’t live up to our obligations to our customers or our vendors.”

McClendon continued, “Financially this is clearly the best option and I would rather “hunker down” now under a well controlled plan - with the real possibility of coming back strong in the future - than to just keep rolling the dice that things are going to improve quickly enough to make remaining 100% operational right now a good business decision.”

SeaArk Marine, Inc. (formerly MonArk Boat Co.) has been in continuous operation in Monticello, AR since 1959. The company has delivered boats to all 50 states, every U.S. held territory, and over 70 countries around the world.

SeaArk Boats, the recreational aluminum boat builder also located in Monticello and operated by Robin McClendon (John McClendon’s sister) currently enjoys steady sales and is unaffected by SeaArk Marine’s decision. Each company serves distinctly different product markets with completely separate sales and distribution methods. www.seark.com

PEOPLE & COMPANY NEWS

mer EBDG personnel in New Orleans expands RESOLVE's in-house engineering team, creating a new company and wholly owned subsidiary RESOLVE Engineering Group, LLC. The Group will support RESOLVE's extensive worldwide operations while continuing to serve both former and new clients as a full-service naval architecture and marine engineering group. RESOLVE Engineering Group, LLC provides new design, salvage engineering, modifications, feasibility studies, stability analyses, forensic engineering, incident response and damage stability plan development among other services to support shipyards, and vessel owners and operators in the public and private sectors, in the U.S. and worldwide.

www.resolvemarine.com

W&O Creates Regional Manager Positions

W&O, the United States' largest supplier of marine valves, pipe, fittings, engineered products, valve automation and data management systems, announced today that it has transformed its corporate structure to better serve its customers and foster continued growth at its North American and European operations.

The company has created six regional management positions for a more strategic approach to the marketplace.

These positions will provide more direct senior-level leadership in working with its customer base and local management teams.

The following individuals have been appointed to these positions:

- Scott Hendrickson, Northeast



Regional Manager

- Carl Herman, Southeast Regional Manager
- Debbie Garner, Gulf of Mexico Regional Manager
- Jim Reynolds, Pacific Southwest Regional Manager
- Bruce McLachlin, Pacific Northwest Regional Manager
- Kristof Adam, European Regional Manager.

www.wosupply.com

AUSTAL Graduates 38 Apprentices

Austal USA honored graduates of Austal's cutting-edge four-year apprenticeship program with a banquet at the Arthur R. Outlaw Mobile Convention Center in Mobile, Alabama. The graduates received their certificates of completion and designation as Department of Labor Class A Journeymen. They were joined by their supervisors, instructors and many of Austal USA's executive and human resources staff in celebrating this momentous occasion. The graduating class, the largest class to graduate Austal's Apprenticeship Program, consisted of 8 electrical journeymen, 6 fit out journeymen, 10 pipe fitting journeymen, and 13 fabrication journeymen.



Austal's apprenticeship program is certified by the U.S. Department of Labor, Alabama Department of Post Secondary Education, and the Veteran's Administration. It is governed by the Department of Labor Standards of Apprenticeship for the respective trades of Pipefitter, Marine Electrician, Fabricator, and Fit out.

www.austaljobs.com

Lakers' Cargo Up 5% in July

U.S.-flag Great Lakes freighters carried 11.1 million tons of dry-bulk cargo in July, an increase of 10.9% compared to June, and an increase of 5.2% compared to a year ago. The July "float" was also 2.1% above the month's 5-year average. Iron ore cargos for the steel industry increased 17% compared to a year ago, but coal for power generation and steel production fell by 11.4%. Aggregate and fluxstone for the construction and steel industries slipped by 3.8%. Through July U.S.-flag cargos stand at 44.8 million tons, an increase of 3% compared to the same point in 2010. Iron ore has increased 9.6%, but coal and limestone are down by 5.1% and 4.6% respectively. Compared to the 5-year average for the first seven months of the year, U.S.-flag cargos are down 2.1%.

Milestone for Cheoy Lee Shipyards Ltd. and RAL

In the summer of 2011, Cheoy Lee Shipyards Ltd. and Robert Allan Ltd. will celebrate a major milestone in their joint collaboration. Since first working together on the construction of the very first Z-Tech tug (Indee, seen above) for BHP Billiton Iron Ore in 2004, Cheoy Lee will have been responsible for the construction and delivery of a total of 50 tugs designed by Robert Allan Ltd., an average of over seven tugs per year.

WWII Liberty Ship Demolition Completed

The final section of a once proud WWII Liberty Ship was removed from the Columbia

River today by Ballard Diving & Salvage under the direction of the United States Coast Guard and unified command consisting of both Washington and Oregon Department of Ecologies.

This concludes a massive and carefully engineered effort to prevent more than 32,000 gallons of bunker oil from escaping into the river from the various double-bottom tanks and other holds containing the decades old bunker fuel harboring the sticky black substance.

During the 211-day operation, crews from the prime contractor Ballard Diving & Salvage removed 4.45 million pounds of steel, and another 824,822 pounds of debris, including wire, bricks and oiled sorbent materials and 1.6 million gallons of oil and or otherwise contaminated water.

Inland Waterway Vessels Focus for new GL Appointees

Germanischer Lloyd has appointed a new Business Development Manager (BDM), Tom Dorsman, and a dedicated Technical Coordinator, Ruben Roeleveld, specializing in Inland Marine. Mr. Dorsman will provide a dedicated sales specialist for the inland waterway vessel (IWV) market. Mr. Roeleveld will be responsible for coordinating activities between plan approval surveyors, field surveyors, business development managers and clients. Mr. Roeleveld will also be GL's contact with the IVW (Inspectie Verkeer en Waterstaat), the Dutch Shipping Inspectorate.

www.gl-group.com

Marad Delivers \$9.98m in Grants to Small Shipyards

U.S. Transportation Secretary Ray LaHood has announced \$9.98 million in grants to 13 small shipyards throughout the United States to help modernize facilities, increase productivity, and help make the country's small shipyards more competitive in the global marketplace. The U.S. Maritime Administration's (MARAD) Small Shipyard Grants Program provides money to help this vital segment of America's maritime industry invest in production equipment, provide technical skills training for employees, and maintain and create well-paying jobs by keeping these businesses competitive.

MARAD received over 118 grant applications requesting \$105 million in assistance. A detailed list of grantees follows:

- Alaska Ship and Drydock, Inc. - Ketchikan Shipyard - \$1,018,314.75
- BAE Systems Southeast Shipyards Alabama, LLC (Mobile, AL) - \$1,008,838.00
- Bay Ship & Yacht Co. (Alameda, CA) - \$405,789.00
- Brownsville Marine Products, LLC (Brownsville, PA) - \$877,940.25
- C&C Marine Maintenance - Congo Shipyard (Newell, WV) - \$1,232,135.00
- Hendry Corporation (Tampa, FL) - \$1,000,000.00
- Ice Floe, LLC dba Nichols Brothers Boat Builders (Freeland, WA) - \$519,761.00
- Jamesbuilt, LLC (Calvert City, KY) - \$882,150.00
- Marinette Marine Corporation (Marinette, WI) - \$604,394.00
- MBLH Marine, LLC dba Vessel Repair (Port Arthur, TX) - \$525,000.00
- Senesco Marine, LLC (North Kingstown, RI) - \$279,677.00
- Southwest Shipyard, LP (Channelview, TX) - \$664,325.00
- Yank Marine, Inc. (Tuckahoe, NJ) - \$961,676.00

PRODUCTS

New Hand-Held Industrial Combustion Gas Analyzer

The E1100 Hand-Held Combustion Analyzer is a rugged unit for boiler, burner, engine, turbine, furnace, and other combustion applications. Pre-calibrated and field replaceable sensors allow for easy diagnostics and replacements to reduce “down-time” and costly repair charges. It also includes O2 and CO Sensors, 12” Probe with 10’ Dual Hose and Optional Hose Extensions, Rechargeable Battery & AC Charger, Internal Memory (600 tests) to Save Data, Software Package with PC Communications Cable and a Vinyl Carrying Case with Shoulder Strap.



www.E-Inst.com

Hayata Receives ABS Type Approval Certification

Hayata, LTD., manufacturers of high-quality, stainless steel cable ties and banding, has been granted Type Approval status for their products by ABS. The Hayata facility is considered capable of manufacturing a product which meets the designated standards subject to annual facility surveys by ABS. Hayata has received certificate #HS1971112. Hayata is a worldwide supplier of stainless steel cable ties, banding, and installation tools. Hayata offers a full line of UL listed, Lloyds, DNV, and ABS approved cable ties; including roller ball, ladder, and releasable styles, in both coated and uncoated finishes.



<http://www.hayata.com>

Makita Introduces New Driver-Drill to Line-UP

Makita, a worldwide manufacturer of technologically advanced power tools that are more compact with less weight yet deliver industrial strength power and results, has added to its groundbreaking line-up of 18V Lithium-Ion tools which now includes over 40 cordless solutions. The new 18V LXT Lithium-Ion Cordless ½” Driver-Drill (model LXFD01) delivers a superior power-to-weight ratio for a full range of drilling and driving applications. With improved Power-to-Weight Ratio,



the LXFD01 is powered by a Makita-built 4-pole motor with bigger front end ball bearings, and delivers 480 in.lbs. of Max Torque and 290 in.lbs. of PTI Torque. The new planetary gear system and transmission has been redesigned for increased durability in a more compact size.

www.makita.com

Hydraulic Sheet and Plate Rolls

The new machines cover an exceptional range of standard capacities from 3' x 13 ga. to 10' x 5/16" with 31 models in each of two types: 3-roll single initial-pinch (Model 3RSP) and 4-roll double-pinch (Model 4RDP). Also available are two special 4-roll double-pinch models with capacities of 2' x 1/4" and 2' x 5/16". All models are manufactured in Europe and are built and certified to stringent CE standards. With refinements in design and manufacture to enhance their quality and performance they feature a sure-drive rolls rotation utilizing a drive system that allows rolling of thicknesses within the machine's opening between top and lower driven roll without the use of belts or extra gear driving mechanisms.



www.comeq.com

Diameter PRO Cutting System

Thermal Dynamics, a Thermadyne brand and a leading producer of manual and automated plasma cutting systems, has added the Ultra-Cut® 400 to its line of high precision automated plasma systems. Joining the Ultra-Cut 100, Ultra-Cut 200 and Ultra-Cut 300, the Ultra-Cut 400 will deliver 400 amps at 200V at 100% duty cycle. It offers production piercing and cutting up to 2 inches on mild steel, stainless steel and 2-1/4 inch aluminum, with outstanding cut quality. Along with these offerings, Thermal Dynamics has introduced an exciting new Diameter PRO™ technology with its XT-Series of CNC controls that delivers quality holes and reduces hole taper to a minimum.



www.thermadyne.com

Acquisition of Superbolt and P&S

Bringing together two of the most innovative and trusted bolt securing technologies, Nord-Lock has acquired US company Superbolt Inc and Swiss company P&S Vorspannsysteme AG.



Superbolt and P&S offer high-quality products for critical bolting applications. The products are used in heavy industries such as offshore, energy and mining. Like Nord-Lock, Superbolt and P&S have developed an excellent solution that provides maximum security, and hold global recognition.

www.nord-lock.com

New Multiprocess Welder

Miller Electric Mfg. co. has introduced the new XMT MPa multiprocess welder — a powerful new inverter-based power source that features the reliability and arc performance of the XMT 350 MPa but with more amperage, exceptional power efficiency and additional programs for Pulsed MIG welding with up to .052- and 1/16-inch wires. Rated at 450 amps at 100 percent duty cycle, the new XMT 450 MPa Improves productivity with increased amperage and duty cycle, allowing workers to weld or gouge longer, and with larger diameter wires and electrodes.



www.MillerWelds.com

Hydraulic Reciprocating Saw

CS Unitec's 2 HP Hydraulic Reciprocating Saw is designed for fast, hand-held cutting of metal and wood. Model 5 1219 0010 (also known as The SHARK), weighs 13 lbs., quickly cuts pipe and wood up to 6 in. dia. and metal up to 3/4in. dia. Ideal for cutting structural steel, tanks, bolts, plastic and other material, it has the capability to mount on an optional Pipe Clamp to make 90 degree cuts. Use of a clamp with the saw increases leverage five times over hand cutting and is also safer for the operator.



www.csunitec.com

SeaShield SplashZone UW Epoxy

SeaShield SplashZone UW Epoxy is a solvent-free patching compound used for repairing pits, cracks and voids in steel, concrete, wood and other surfaces with very minimal experience or tools required. By mixing two equal parts together, the product, can be applied by gloved hand, trowel or broad knife, to wet or underwater surfaces. The product can be applied up to 2 inches thick as a patch or grout repair in various splashzone applications. With a fast cure time, corrosion damage can be repaired without new corrosion damaging agents setting in.



www.densona.com

Meltric Plugs and Receptacles

Meltric Corporation presents a new product line for electrical equipment powered by direct currents. Meltric's DSDC Series plugs and receptacles were designed for direct current applications up to 200 amps at 250VDC, up to 100 amps at 600 VDC, or up to 30 amps at 750 VDC. Safety features include a dead-front safety shutter and a padlockable pawl. The plugs and receptacles also utilize solid silver-nickel contact surfaces and spring-loaded, butt-style contacts.



www.Meltric.com

Thermodyne: 201 TS DC Welder

Completing the DC welder series that includes the 95 S, 161 S and 161 STL, the Thermadyne Thermal Arc 201 TS portable welder is now available. The 201 TS is designed to provide increased power and control for tradesman or welders with more demanding requirements. Powerful yet compact and portable, this Stick / Lift & High Frequency TIG unit



PRODUCTS

delivers 100 Amps on standard 115-Volt circuits for Stick welding and 150 Amps for TIG. When used on 208-230 Volt circuits, maximum output is 200 Amps for either welding process. Attractive to both the DIY market and light industrial use, the 201 TS is particularly appealing to companies who want to save costs by bringing the welder right to the job site.

www.Thermadyne.com

Tomahawk 625 Plasma Cutting System

Lincoln electric has launched the new Tomahawk 625 plasma cutting system. This system is lightweight and portable enough to carry to any shop or jobsite where an external compressed air source is available. Designed for plasma cutting on mild steel, stainless steel, aluminum, brass and copper, the Tomahawk 625 is ideal for on-site maintenance, service tasks, small construction sites, HVAC work, demolition and rental applications. The Tomahawk 625 operates on 208 or 230 volt single phase 60 or 50 Hz input power. It produces 10-40 amps output and is rated at 40 amps at 96 volts, 35 percent duty cycle.

www.lincolnelectric.com



BUG-O SYSTEMS Announce Weld.com

The welding & cutting industry has been without an online resource that addresses all aspects of the industry up until this point. BUG-O Systems has recently developed a new website, Weld.com, which will provide users with information on manufacturers, distributors, representatives, consultants, schools, job postings, and other resources within the welding industry. The site is set to launch in Fall 2011.

www.weld.com

Type 57IL Isolator Lug Butterfly Valve

Asahi/America, Inc. has recently expanded their line of valves to include the Type 57IL Isolator Lug butterfly valve. The Type 57IL Isolator Lug features a unique lug design where the 316 stainless steel lugs are inserted into the valve body during the injection molding process permanently combining the lugs and valve body into one unit. The Type 57IL's distinct design permits removal of

the downstream flange while maintaining full upstream line pressure. Encapsulating the 316SS lugs in the PVC valve body ensures that every Type 57IL comes factory-equipped with lugs. Asahi/America has simplified the field installation process by removing the directional requirement of their previous butterfly valve.

www.asahi-america.com



Atex/Ex Certified Pneumatic Series

Rustibus has been providing its patented chain based solution for surface preparation in the marine industry for over 30 years. Their latest launch is the Atex/Ex certified pneumatic series that can be used in potentially explosive atmospheres. This will allow even tankers to use their mechanical products on board their vessels. With the wide product range from walk behinds, hand tool and pipe series, there are virtually no areas the powerful machines cannot reach. The hand machines are also reintroduced to the market with a newer design and a new 110V electric model. Now more user friendly and compact, these are tailored for the treatment of smaller areas and ideal for both large and small vessels.

www.rustibus.com

Bondhus Helps Eliminate Dropped Screws

Bondhus Corporation's line of revolutionary ProHold Tip screw holding tools has expanded to include: T-handles, screwdrivers and L-wrenches in both ballpoint hex and star tips, in a full range of inch and metric hex sizes from .050" through 3/8", 1.27mm through 10mm and T9 through T55. Each tool's tip has a non magnetic, corrosion-proof button that securely holds screws on the tool at any angle, eliminating dropped screws even in hard to reach applications. The button is on the flat of the hex tool, eliminating weakened tool corners and tool failure associated with competitor products. The unique, patented design enables each ProHold tool to deliver the full torque of Bondhus' exclusive Protanium steel. All ProHold tools feature Bondhus' proprietary ProGuard finish.

www.bondhus.com



BY THE NUMBERS *INLAND ENVIRO ANALYSIS*

Are you Going Green? Just maybe, we are already there. With new towing inspection requirements looming large and a host of other Coast Guard initiatives in play, one would think that domestic inland and coastal transport modes leave much to be desired. We asked Dagmar Schmidt Etkin of Environmental Research Consulting to weigh in on the matter. In her report entitled *40-Year Analysis of US Oil Spillage Rates*, Etkin claims, “Twenty years after the 1989 Exxon Valdez spill, which spurred regulatory changes and industry initiatives to prevent oil spills, a comprehensive analysis of US spillage rates shows significant progress in reducing spills.” She also acknowledges the Deepwater Horizon spill skews the data. Table 1 shows how the average annual total petroleum industry spillage has decreased consistently over the last 40 years. She adds, “Seventy-seven percent less oil is spilling since the 1970s and 46% less since the decade previous to the last decade.”

Table 1. Estimated Total Average Annual US Oil Spillage (tonnes)

Source Type	1969-1977	1978-1987	1988-1997	1998-2007	% Total 1998-2007
Production	4,491	1,243	2,169	1,420	5.07%
Offshore Platform Spills	3,694	192	259	182	0.65%
Offshore Pipelines	640	495	1,161	373	1.33%
Offshore Supply Vessels	14	35	7	1	0.00%
Inland Production Wells	143	521	742	863	3.08%
Refining	429	502	2,145	1,734	6.19%
Refinery Spills	429	502	2,145	1,734	6.19%
Transport	69,809	43,092	27,250	13,770	49.16%

Etkin continues, “While annual spill amounts vary from year to year, often due to one or two particularly large incidents, there has been a general downward trend in US spills in the past decade, and an even greater downward trend since 1989. As shown in Table 2, average annual total petroleum industry spillage has decreased consistently over the last 40 years.

Industry Source Type	% Changes in Annual Spillage between Decades			
	1969-1977 to 1978-1987	1978-1987 to 1988-1997	1988-1997 to 1998-2007	1969-1977 to 1998-2007
Production	-72.3%	74.5%	-34.5%	-68.4%
Offshore Platform Spills	-94.8%	34.9%	-29.7%	-95.1%
Offshore Pipelines	-22.7%	134.5%	-67.9%	-41.7%
Offshore Supply Vessels	150.0%	-80.0%	-85.7%	-92.9%
Inland Production Wells	264.3%	42.4%	16.3%	503.5%
Refining	17.0%	327.3%	-19.2%	304.2%
Refinery Spills	17.0%	327.3%	-19.2%	304.2%
Transport	-38.3%	-36.8%	-49.5%	-80.3%
Inland Pipelines	-30.1%	-34.7%	-35.1%	-70.4%
Tanker Trucks	62.7%	6.7%	76.1%	205.8%
Railroads	16.1%	-6.9%	-34.0%	-28.7%
Tank Ships	-68.7%	-30.0%	-91.5%	-98.1%
Tank Barges	66.5%	-56.8%	-76.3%	-82.9%
Storage and Consumption	-18.0%	186.5%	-72.1%	-34.5%
Gas Stations and Truck Stops	0.0%	30.4%	-48.0%	-32.2%
Total	-39.9%	-29.4%	-46.4%	-77.2%

(Both Tables Courtesy: Dagmar Schmidt Etkin, Environmental Research Consulting)

Tank barges (-82.9%), OSV’s (-92.9%) and transport in general (-80.3%) have all reduced their environmental footprint dramatically in the pas 40 years. If anyone says that inland and coastal transport is not green enough, please counter with these statistics. Do we have room for improvement? Sure, but let’s give credit where credit is due.

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contract requirements, required compliance with regulatory body and classification society guides, rules and regulations. The eligible candidate must have acquired a high school diploma or equivalent and some college education preferred. Chosen applicant will be able to read and interpret shipbuilding contracts, specifications, regulatory body & classification society guides, rules and regulations, engineering drawings and data. A minimum 2 years experience required in a ship building, ship repair or similar construction and manufacturing industrial type environment. Candidate must have working knowledge of Earned Value Management (EVM) principals and processes and possess good communication skills, both verbally and in writing, in addition to having the ability to use and interpret relevant cost and schedule data reports and the use of scheduling software (Primavera or Microsoft Projects, etc.).

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Job Location: USA, Lockport

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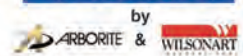
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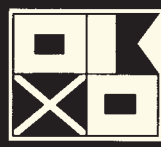
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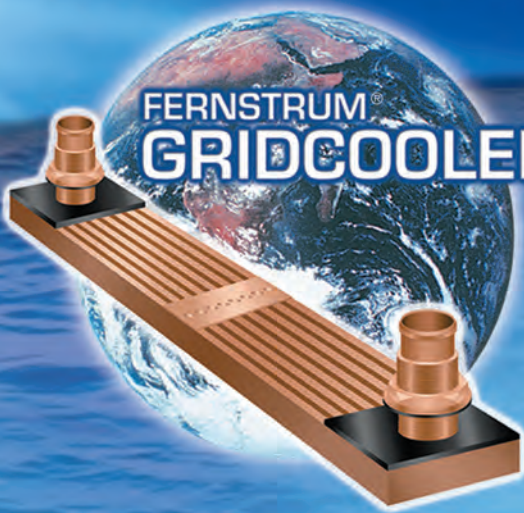
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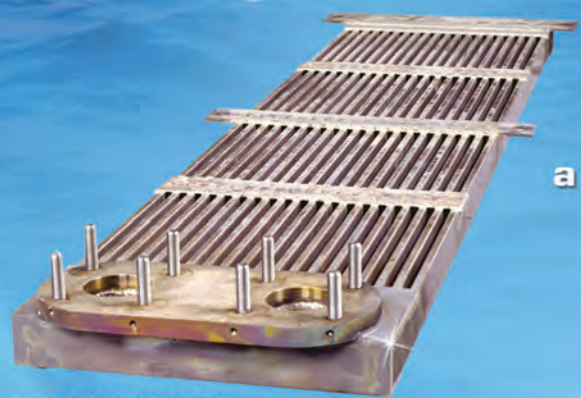
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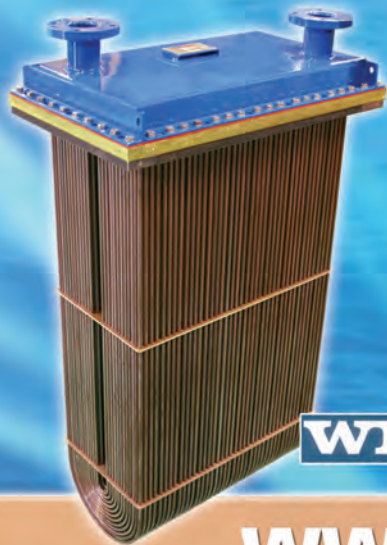


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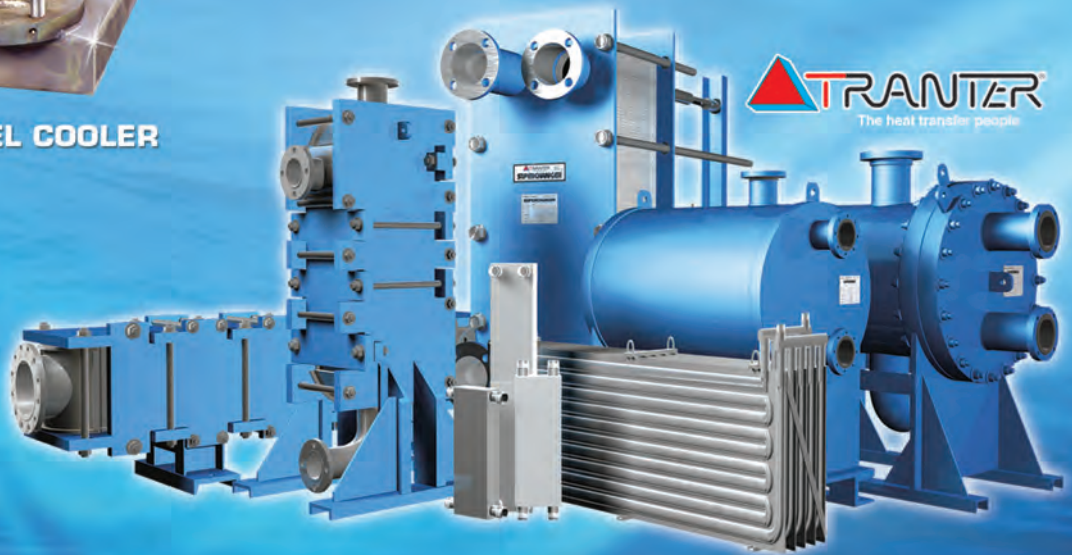
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