The Information Authority for the Workboat • Offshore • Inland • Coastal Marine Markets

Volume 28 • Number 5

Marine News

MAY 2017

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Inland Waterways

Improving Both Infrastructure and Safety

Offshore Outlook:
CBP's Jones Act Ruling Ignites Industry spat

Special Report:
Doing your Sub M Homework

Tugs & Barges:
Innovation, Emissions and Multiple Missions

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Make Inland Waterways a Priority and Preserve the U.S. Transportation Advantage

UNITED SOYBEAN BOARD

Bill Cross, Lockmaster at LaGrange Lock and Dam, U.S. Army Corps of Engineers

The U.S. transportation infrastructure may be the biggest advantage U.S. soybean farmers have over other soy exporting countries, and all stakeholders will need to make maintaining this advantage a top priority.

"In many cases, exporting rivals have advantages in longer growing seasons, cheaper labor and land prices," says Paul Rohde, vice president of the Midwest Area, Waterways Council, Inc. "The one advantage U.S. farmers have is our ability to get our products to a global marketplace more efficiently than our competitors, at least for now. The number one way agricultural exports move is through the inland waterways, and having a reliable river system is critical in building relationships with foreign markets."

However, Rohde says the question is whether we can assume the river and channel system will continue to be a reliable mode of transportation in the future. Because so much is at stake, interested parties need to elevate the priority of maintenance and improvements to the inland waterways system.

"One way to make the operation and maintenance, rehabilitation, and modernization of locks and dams a priority is to have a wide coalition speaking in general unison on priorities," says Rohde.

Rohde notes that having stakeholders that come to the table with solutions, rather than just presenting a problem, is something that decision makers find attractive.

"Collaboration and open communication among stakeholders is key," says Rohde.

Maintenance of the locks and dams should be a priority issue, but there are many funding challenges, says Rohde. Funding for maintenance can be less glamorous than funding for new projects, and transportation on the rivers can be the "forgotten R," compared to roads, rails and runways.

The majority of locks and dams on the Mississippi River were built in the 1930s and 1940s, so most have outlived their intended design life. By the end of this decade more than 80 percent of the locks nationwide will have exceeded their intended design life.

"As these systems age, it's reasonable to assume an increase in both scheduled and unscheduled closures for major repairs, which is more costly, and even the appearance of unreliability could impact the confidence our export partners have in U.S. soy," says Rohde.

But it's not too late to raise maintenance of inland waterways to a higher priority.

"In many cases, if we don't pay for maintenance on the inland waterways up front, they become much more expensive fixes and major rehabilitations," says Rohde. "We're seeing some problems that could have been resolved less expensively 10 years ago. Educating decision makers to help them understand why this should be an investment priority now can avoid costly expenses in the future."

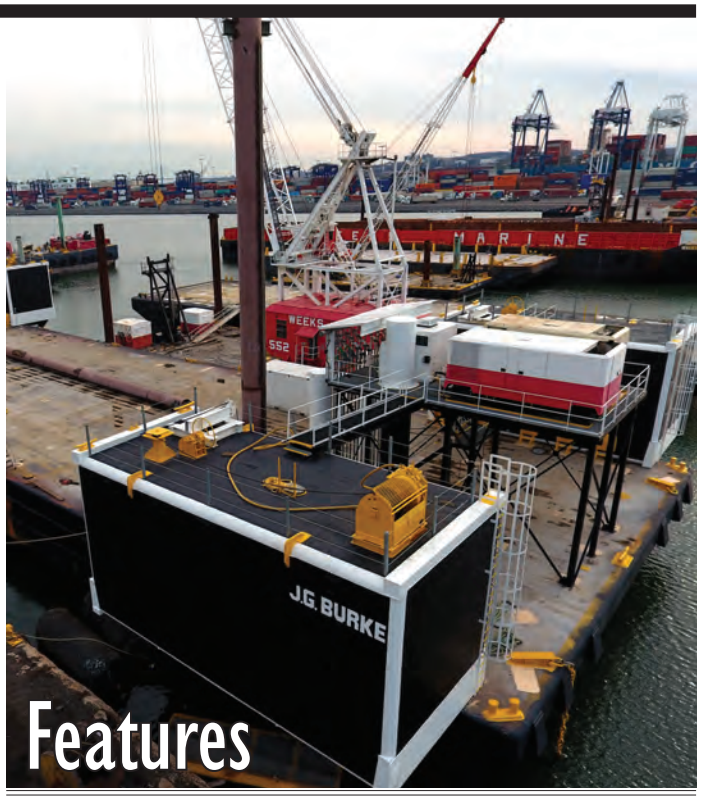
INSIGHTS

OP/ED

SPECIAL REPORT

INLAND INFRASTRUCTURE

BOATBUILDING DESIGN



Features

ON THE COVER

The Cincinnati waterfront provides the perfect backdrop to (arguably) America's greatest asset – its inland waterways. Our story on the Central Ohio River Business Association (CORBA) and its growing impact on commerce begins on page 30.

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When it came time to repower Niagara Falls sightseeing vessels *Maid of the Mist VI* and *VII*, there was no question about the engine manufacturer to turn to. Outfitted with twin 6-cylinder Volvo Penta D13MH 400-HP keel engines, these vessels are proving to be better performing, more responsive and more efficient than ever before, according to the *Maid of the Mist's* captains and marine team. Not to mention the engines are burning significantly cleaner with black smoke that was previously visible at the stern now non-existent.

The ride of a lifetime just got even better thanks to Volvo Penta.

VOLVO PENTA

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There just aren't too many places where you can get your fill of both inland and offshore news and analysis. This magazine – *the leading audited print publication in the brown water and workboat genre* – is one of them. And, there is plenty happening in both sectors as we approach midyear. Each has its own unique challenges, regulatory pressures and rapidly unfolding drama. Both boast the dynamic leadership necessary to effect change, the equipment to get it done and the vision to shape the journey. That said; our window into inland waterways and the offshore Gulf of Mexico situation is all you need to come up to speed.

This month's *INSIGHTS* discussion with Captain ACBL's Captain Matthew Lagarde, for example, provides a good lead-in to ***MarineNews*** contributor Tom Ewing's look at the Central Ohio River Business Association (CORBA). And, no, the subchapter M towboat rules didn't go away while you were sleeping. You'll need a primer on how to get started, why that's important and which pitfalls can be avoided with just a little bit of common sense.

If all of that's not enough, a statistical look at the state of inland waterways infrastructure and the economy of scale brought by the nation's inland workboats will seal the deal. It turns out that no one – aside from those who hold federal infrastructure dollars – is sitting on their hands in this important era. It isn't all bad news but the task of making sure the safest, most efficient and environmentally correct mode of transportation on the planet can reach its full potential has only just begun. Separately, some interesting and innovative additions to the infrastructure toolbox are making the job of inland repairs just a little bit easier. Start on page 8 and wade right in. The water's fine.

Meanwhile, the offshore outlook for domestic OSV and specialty construction vessels got a little brighter in January when the U.S. Customs and Border Protection (CBP) in its Customs Bulletin & Decision newsletter promised reversal of a 40-year practice that allowed foreign registered tonnage in what they say should be protected cabotage trades. The foreign flag contingent isn't going away quietly, and with CBP's final edict scheduled for late this month, the dispute has developed into the latest 'Ground Zero' for the regularly embattled Jones Act. With both sides playing for keeps, that story begins on page 36.

Looking at the offshore and inland sectors side by side, it isn't hard to argue that the two spaces are vastly different in myriad ways. At the same time, I could also assert that they share far more in common than that which meets the naked eye. Today, both face serious and far reaching regulatory challenges (sub M & Jones Act interpretations), each is struggling under the heavy yoke of rapidly expanding environmental rules, and at a base level, both sectors embody the quintessential definition of the scrappy, brown water workboat. That, and of course, we've got you covered on both accounts – right here in one magazine.

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Resources

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Good News/Bad News: on the Inland Waterways …

Two different but both trusted sources of reliable data recently provided analysis of nation's inland waterways; albeit in different ways and for different reasons. Both address the importance of inland waterways and their value to the supply chain. The contrasting messages point to misplaced priorities in public policy – especially where it intersects with the need to maintain waterways infrastructure. In a nutshell, the National Waterways Foundation's (NWF) annual look at inland barge transportation concluded that barges remain superior to other modes when it comes to for fuel efficiency, safety, and just as important, the lowest environmental impact. Notably, the inland waterways showed the most improvement of all modes in terms of fuel efficiency – a key metric for environmental concerns – for the period 2009 to 2014.

Separately, the American Society of Civil Engineers (ASCE) improved their grade of the Inland Waterways to a "D." Much of the economy provided by inland river transportation today is being lost because our waterways remained neglected. The United States' 25,000 miles of inland waterways and 239 locks directly serve 38 states. *And, it is a critical part of a larger system referred to as "America's Marine Highways," which encompasses both deep draft and shallow draft shipping.* Nevertheless, the majority of locks and dams on the system are well beyond their 50-year design life. Between 2000 and 2014, the average delay per lockage nearly doubled from 64 to 121 minutes. This intricate system, operated and maintained by the U.S. Army Corps of Engineers, supports more than half a million jobs and delivers more than 600 million tons of cargo each year, about 14% of all domestic freight. Investment in the waterways system has increased in recent years, but upgrades on the system still take decades to complete.

The NWF-commissioned study comparing societal, environmental, and safety impacts of utilizing inland river barge transportation to highway and rail transportation is entitled, *"A Modal Comparison of Domestic Freight Transportation Effects on the General Public: 2001–2014 (January 2017)."* Conducted by the Texas Transportation Institute's Center for Port and Waterways at Texas A&M University, it has been updated many times. The 2017 update addresses cargo capacity, congestion, emissions, energy efficiency, safety and infrastructure impacts. NWF data might be viewed by some as 'cheerleading' to the choir, but reporting those results (every four years) and getting them in front of the right people is incredibly important. Separately, the ASCE report – performed by America's civil engineers – is a sobering at the nation's major infrastructure categories. The improved (but still miserable) ASCE grade reflects increased investment in the waterways system in recent years, but upgrades on the system still take too long to complete. Blue Water Ports received a grade of C+, up from a grade of C in 2013. That reflects a louder and more powerful voice in Congress, where the advent of the enlarged Panama Canal has gotten attention and resulted in improvements. Still, a well dredged blue water gateway is only as efficient as the waterways that deliver exports and transports imports to the heartland. The NWF Report shows us, among other things, below.

Inland waterways construction and rehabilitation costs, including for locks, are shared by the federal government through general funds and by users through the Inland Waterways Trust Fund on a 50-50 basis. Operation and maintenance costs for inland waterways are covered in full by the federal government. The Inland Waterways Trust Fund is supported by a 29 cents per gallon tax on barge fuel, and cannot exceed expenditures in a given year. In April 2015, this user tax was increased by 9 cents for the first time since 1995 upon the urging of the Inland Waterways Users Board. The USACE estimates overall investment needs of $4.9 billion over the next 20 years. One major project, the Olmsted Lock on the Ohio River, depleted available funding for other inland waterways projects. In the Water Resources Development Act (WRDA) of 2014, additional federal funding was allocated to free up Inland Waterways Trust Fund money for other projects.

	Barge	Truck	Truck
Modal Capacities & Comparison	15 barges / 1 pushboat	1,050	216 (6 locomotives)
CO2 emitted (per million-ton-mile)	15.6	154.2	21.2
Tons Moved (per 1 gallon of fuel)	647 miles	145 miles	477 miles
Spills (gall./million-ton-mile)	2.12	6.04	5.95
Injuries (*)	1	824	80.44
Fatalities (*)	1	79	21.9

(*) comparing other modes to every one incident on the water …

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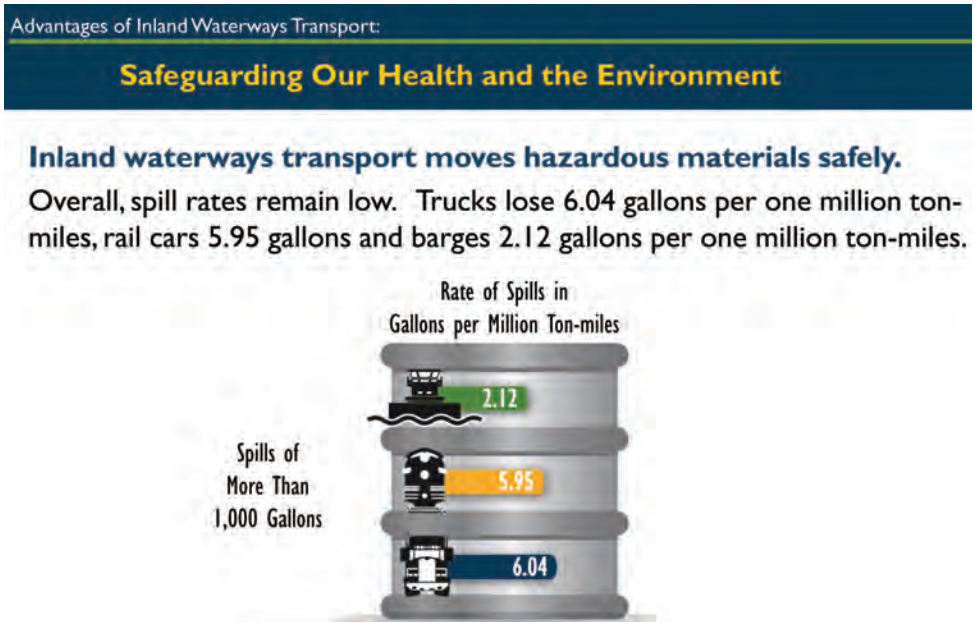
753,000,000: *minimum cost in dollars to purchase railcars to handle just the diversion of Ohio River coal.*

486,000,000: *minimum cost in dollars to purchase 243 locomotives to handle diversion of Ohio River coal.*

49,000,000: *annual truck trips needed annually if inland rivers ceased to operate.*

1,046: *number of additional trucks needed per day per lane if river cargo was diverted to a rural interstate.*

2: *inches of asphalt that would have to be laid to 118,688 lane-miles of Interstate.*



See the ASCE's report card report on inland waterways here:
http://www.infrastructurereportcard.org/wp-content/uploads/2017/01/Inland-Waterways-Final.pdf

See the NWF's full report on the inland waterways here:
www.nationalwaterwaysfoundation.org/documents/Final%20TTI%20Report%202001-2014%20Approved.pdf

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Captain Matthew Lagarde

Director of Regulatory Compliance,

American Commercial Barge Line LLC

Captain Matthew Lagarde is the Director of Regulatory Compliance at American Commercial Barge Line. But that succinct description does not give full understanding to where he's been, what he's accomplished and what he brings to the office every day. A Towing Safety Advisory Committee (TSAC) Committee Member, the 2nd Co-Chair of the New Orleans Port Safety Council and the current President of the Maritime Navigation Safety Association (MNSA), he has, over the years steadily worked his way up the chain of command. Actively engaged in the sub-committees of TSAC since 2009, he is also currently serving as the Chair of the Subcommittee 15-03 "Electronic Charting" which has been directed by the USCG to provide recommendations on carriage requirements and equivalency in a report due this spring. Beyond this, he is also Co-chair of the Subchapter M Implementation sub-committee. Formerly a Port Captain and a fleet manager, he also served on the water as a Captain and Pilot and before that, a deck hand. He is a Master of Towing Vessels upon Inland, Western Rivers and Great Lakes and has been working in the industry for 25 years. Hence, when he tackles a problem for his employers – and the greater inland river community through one of his many committee affiliations – he applies 'boots on the ground' experience to the solution. By his own admission, he never forgets where he came from and that attitude carries over into every mission or role that he takes on. This month, he weighs in on the complicated world of regulatory and environmental compliance on inland waterways, his role in that space and what to expect next.

In November of 2015, you completed the acquisition of AEP to form one of the largest marine transportation firms in the country. That said; marrying the safety and regulatory culture of two different firms can be difficult. How did that take shape at ACBL and how did you go about it from a regulatory standpoint?

The legal issues surrounding the period of time leading up to the actual handover of assets was a particularly tough thing to work around. There was a period of time when the two different operating companies had very limited communication which made transition planning difficult. We approached the issue where the operating groups were independent of one another for a short period of time. The management and merger committees worked together to figure out which policies or procedures were the best to cover certain issues. In some cases we scrapped one of the operating company's set of procedures, trained people and implemented the policy we kept on the other half of the vessels. ACBL's robust internal auditing processes were instrumental in using our Vessel Standards Guide and S.C.O.R.E Audit tools to identify needs aboard the vessels and bring all of the equipment into a unified standard. Constant and effective communication, especially from the senior leadership, through several different mediums to all employees helped drive the sense of importance to all get on the same page. All of this being considered; changing the inertia of two large cultures was very challenging.

As the Director of Regulatory Compliance, you have many things on your plate. But, what is the one thing that keeps you up at night?

The thing that keeps me up at night is the critical importance of the work we do with the industry and the USCG to set the direction of the industry. We want to get it right. The lives and livelihood of the mariners on the waterways depend on the work we do. The economy of the nation depends on the work we do. I was advised by many great teachers along the way to never forget where you came from. I started as a deckhand and served many

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years as a captain. The role I play in various committees and groups affects these crewmembers in ways that are difficult to imagine. I always try to remember that I am in the role I am to represent these men and women as well as the company. I don't want to miss anything that will embarrass the company or create a situation that might fail to protect our people. Did I do everything I could today to keep us safe? Did I do everything I could to keep us compliant?

What's the biggest regulatory challenge on the horizon for the inland industry – and, for ACBL, specifically?

In my opinion the greatest challenge we face moving forward is educating the mariners, the shore-side support, the USCG and the general public of emerging regulations and the requirements that we need to meet to be compliant. Sometimes the new regulations and rules have intent to fix a problem, but create several others along the way. Large increases in recordkeeping expectations, what needs to be done and when are big training issues. Ensuring that everyone understands the role they have to play, and ensuring that the regulators understand our industry and how it works are paramount. There is a lot of material to cover, a lot of people to teach and limited time and resources.

The new C-VIDA bill – designed to marry oversight and regulatory responsibilities of not only the USCG and EPA, but also that of myriad Balkanized individual state (ballast water) rules, has the potential to do a lot of good. What are your thoughts on that legislative effort?

Frankly, I'm in favor of a single set of rules. The industry is involved in interstate commerce. It makes sense, in this particular case, to have a national standard. The practice of some states to take extreme measures, well above the national standard, could impact the ability of other states to conduct commerce. The patchwork of requirements among the different sates is confusing to the mariners aboard the boats and is destined for failure from the start. This is a common sense issue where the federal government should set the rule.

C-VIDA also proposes to exempt – at least from the outset – all vessels under 79 feet from EPA VGP compliance. Since that effectively excludes thousands of vessels currently in use, do you think that is good policy?

Towing Vessels less than 79 feet, to date, have had exemptions from the 2008 and later the 2013 Vessel General Permits. The coverage that would have come under the 2014 sVGP has been repeatedly stayed by Congress. I'm not aware of ongoing issues with the current stays or exemptions. I don't believe we are making great gains by including these vessels without a fact-based and risk-based reason for inclusion. In my opinion, the commercial fleet of vessels less than 79 feet is way less of a concern than the enormous fleet of recreational vessels less than 79 feet which have not been required to meet these recordkeeping requirements.

ACBL is a member of AWO and its RCP, hence the transition to subchapter M oversight probably isn't a real burden. But, have there been challenges – even for a big operator like your firm – and if so, what are those challenges?

Our primary challenges revolve around a lack of clear policy guidance from the USCG in a timely manner and the scale of our operating fleet. The industry and other interested parties have submitted over 300 questions to the USCG surrounding requirements and intent under subchapter M. To date, the USCG has answered well under half of these questions and we are essentially in the home stretch to implementation. A large amount of vessels may or may not need to be outfitted with new equipment that needs to be budgeted for, sourced, installed and training provided for the personnel on this new equipment. Receiving timely guidance on how this will be interpreted and enforced is critical to making this successful. A lot of the "copy and pasted" requirements from the offshore inspected vessel regulations are impractical for Inland boats. Another disappointment was the recent policy guidance provided where the USCG has interpreted the need to credential all of the Persons in Charge for fueling operations of these towing vessels. The National Maritime Center, in my opinion, is not staffed, equipped or funded to handle this enormous influx of mariner credential applications. Credentialing mariners who are already conducting these transfers under Letters for Designations adds no value to the safety of the process. We do run the risk of further taxing an already overtaxed credentialing center and causing further delays in the issuance and renewal of all of the other required credentials. I was very disappointed in this decision to fix a paper problem, not an actual problem.

Which route is ACBL taking on the subM rollout – third party or Coast Guard options? And, why? Where are you in the process?

ACBL's plans at this time are to pursue the TSMS option. As an active member of AWO's Responsible Carrier Program that has been participating in all of the requirements of the RCP program, including Third Party Audits, we believe it will continue to be an easy transition into the TSMS option. The AWO has been proactive in improving the RCP program requirements to meet the requirements of a TSMS under subchapter M. We have been getting ready

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for this transition for quite some time. There will need to be some minor adjustments to policies and procedures, but we believe we are on track to move right into the Survey-Auditing regime under the TSMS option. As stated earlier, any delays we may be looking at are going to revolve around answers from the USCG on equipment requirements and policy, not on the TSMS and auditing regime.

One of the big issues for inland and brown water operators in general has been the imposition of so-called blue water safety rules on brown water operations. The firefighting rules come to mind. Is the Coast Guard [now] doing a better job of tailoring regulations to suit a specific operation?

The regulatory agencies are getting better at listening, but there is still a lot of ground to cover. Work on the Electronic Charting Systems (ECS), fire-fighting training, day-shapes, and AIS programming requirements are all good examples of where the industry is trying to bring reason and explain the difference between offshore and inland operations to the USCG. Sometimes it's a pretty tough fight. Industry participation in the Federal Advisory Committees such as TSAC, NAVSAC, CTAC, MEDMAC and MERPAC are critical to getting our voice heard. The inland towing community is often underrepresented on these committees even though we are a huge portion of the US commercial fleet and I cannot urge participation strongly enough. There needs to be a risk based approach to these issues. We keep trying to fix problems that do not factually exist in certain segments of the industry.

Manning, training and credentialing has always been a challenge for any maritime concern. And, those rules – especially for inland personnel – are always changing. What is the next challenge in the pipeline?

The large surge in credentials associated with the Persons-In-Charge of towing vessel fueling operations is going to be trouble for the industry as well as the individual mariners. Mariners trying to renew other credentials will continue to experience growing delays in issuance. The TWIC program and interaction between the TSA and USCG systems are an ongoing problem. The value of the TWIC program to the industry and DHS should definitely be called into question. The more hoops we make people jump through to gain employment, the more risk of delays in renewal of credentials we introduce, and the more risk we have of people missing days of work for silly reasons, the less attractive the industry becomes. The TWIC program is probably one of my number one complaints to the regulators. The lag in approvals for new hires in the USCG Homeport system associated with the TWIC program is unacceptable by any standard.

The tier 4 EPA emissions standard is here. Is it impacting your operations and if so, is there a strategy in place to address it? Does ACBL lean towards so-called tier-beater smaller HP engine arrangements, hybrid / diesel electric approach or will you build to Tier 4 with aftertreatment?

ACBL has completed our boat building projects for the foreseeable future using the tier 3 engines that were required under the existing regulations. The company is evaluating options on equipment moving forward, but currently has no intent on "tier beater" options or diesel electric equipment at this point in time.

There's been a lull in the inland barge building boom, particularly with the race to replace single skin hulls all but over. That said; the average age of many double hull units is more than 25 years. How is your fleet faring in that department? Is the ACBL fleet getting younger?

We have been working on reducing the age of our fleet, overall. We have built a lot of new tank barges over the last few years and the merger between the AEP River Operations and ACBL brought a lot of new equipment under the fold. The slowdown in the freight market over the last few years has also produced opportunities for retirements of older barges from the fleet. The average age of ACBL's barge fleet is around 14.9 yrs old.

Your firm has received many environmental accolades. Indeed, the inland industry as a whole has reduced its environmental footprint substantially in the past three decades. Where can additional improvements be made?

We live and work on the river. We see the world around us as we travel from port to port. Our waterways, and the environment as a whole, are extremely important to us. We are very proud of the environmentally friendly nature of our business and the contributions we can make as an industry to make our world a better place to live. Transition to more efficient engines, use of environmentally friendly lubricants, better fendering systems, and better coating systems all contribute to the direct improvements we can make. Support of and participation in organizations such as Living Lands and Waters and other river clean-up organizations, and improvements in recycling of vessel wastes, are other areas where we can improve contributions. Community outreach and education are also an important part of transitioning freight from less efficient modes of transportation. We have a strong commitment to continual improvement in all aspects of our safety, environmental commitment and business services.

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U.S. Coast Guard Forges the Future of Navigation on U.S. Waterways

By Mike Emerson


Emerson

Maintaining the system of buoys and beacons that guide mariners through our nation's waterways is the United States Coast Guard's oldest mission. Tracing its roots to the ninth law passed by Congress in 1790 that moved lighthouses under Federal control, the U.S. Lighthouse Service and its vast portfolio of buoys, beacons, buoy tenders and lightships were a founding part of the U.S. Coast Guard in 1939.

Along with the mission, many of the beacons the Coast Guard maintains today date back centuries. Last year marked the 300th anniversary of the first American Aid to Navigation (ATON), the Boston Light. The legendary lighthouse is one of hundreds of old beacons that light the coastlines of our great nation.

Our first lighthouses were later joined by the thousands of buoys, beacons and electronic aids that help mariners to get home safely and keep our nation's economy on course. Today, the Coast Guard maintains more than 48,000 buoys and beacons that mark waterways across the U.S. Marine Transportation System (MTS). One of the world's largest ports and waterways systems, the MTS is a complex, inter-woven and intermodal series of waterways that travels across state and national borders and links our highways, railroads and pipelines to ports around the world. With more than 25,000 miles of inland, intracoastal and coastal waterways that connect 1,000 harbor channels, 300 ports and 3,700 terminals, the Coast Guard facilitates trade moving through the MTS, representing $4.5 trillion in economic activity annually.

The U.S. ATON system enables mariners to determine their position, chart a safe course, and steer clear of hazards – and that system has never been more important. As the Panama Canal expands, Arctic traffic increases and American energy production continues to rise, the size and volume of vessels transiting through the U.S. MTS continues to increase.

The Mississippi River System, also known as the Western Rivers, is one of our most important marine transportation corridors. Approximately 15 percent of the total U.S. freight, including many critical commodities like grain, petroleum and coal, rely on these waterways. These rivers also significantly reduce air pollution and traffic on U.S. roads and railways. With a 60,000 barrel capacity, two tow barges can carry the cargo equivalent of 80 train cars or 300 trucks.

The portion of the Coast Guard's cutter fleet (construction tenders and river tenders) responsible for constructing the aids to navigation in our inland waterways and maintaining aids to navigation on these major rivers are well beyond their prime and we are seeking to modernize them. With an average of 51 years of service, most of our inland cutters are much older than the crew members who serve aboard them. Among them is the Coast Guard's oldest active service cutter – the 73-year-old Atlantic Beach, North Carolina-based Inland Construction Tender USCGC Smilax (WLIC-315), commissioned in 1944 during World War II.

Often sidelined by malfunctioning parts that aren't made anymore, these inland cutters have earned their place in history, but as our Commandant Admiral Paul Zukunft said during his 2017 State of the Coast Guard address, *"The time to replace this legacy – or perhaps geriatric class of cutters – arrived over a decade ago."*

Along with modernizing the cutters that maintain our inland ATON, the Coast Guard is leveraging technology to enhance the current U.S. ATON system and provide Marine Safety Information (MSI) in a more useable manner to mariners. Increased demands on aging infrastructure create operational risk that must be managed through improved mariner situational awareness and enhanced navigation.

Among our many initiatives to chart the future of navigation is an effort to integrate Automatic Identification System Aids to Navigation (AIS ATON) into our system of buoys and beacons. AIS ATON are redefining how waterways are marked and providing a new way for MSI to be sent to mariners. With the ability to use AIS ATON in operationally or environmentally restricted areas, the Coast Guard is able to respond to ATON discrepancies and mark navigational hazards in situations where it was previously impossible.

To leverage this versatile capability, we are using AIS ATON in a variety of initiatives. Demonstrating their operational agility, AIS Aids to Navigation were established to mark buoys knocked off station by Hurricane Matthew in the waters around Georgia and North Carolina in 2016. By leveraging the same technology, we were also able to transmit information on restricted zones on wa-

terways around the Republican National Convention in Cleveland and the Democratic National Convention in Philadelphia.

We are not doing this by ourselves. Managing a waterways system as vast and important as the U.S. MTS is a team endeavor. From coast to coast, we are collaborating with the maritime industry and our principal Federal MTS partners – the U.S. Army Corps of Engineers (USACE) and National Oceanic and Atmospheric Administration (NOAA) – on a variety of navigation initiatives.

The Coast Guard is working with the USACE to transmit MSI on the Ohio River near Louisville, Kentucky. AIS is being used to send messages on ATON, weather, bridge clearance, hazardous cargos, lock status and safety and security zones. Kentucky's largest city was selected as the test bed site because of its strategic location on the Ohio River, a major inland waterway that crosses five states before merging into the Mississippi River.

The Ohio River Test Bed is helping us to determine the best ways to integrate AIS ATON into our existing navigation systems and to bring American waterways into the 21st Century. Together with NOAA's Office of Ocean Services, the Coast Guard is integrating Physical Oceanographic Real-Time System (NOAA PORTS) information into AIS-Application Specific Messages (AIS-ASM) to broadcast hydrographic and weather data. NOAA PORTS-AIS integration has the potential to dramatically increase the enhanced Marine Safety Information (eMSI) available to mariners.

Through these and other initiatives, we are improving the safety, security and efficiency of the U.S. MTS and the ATON that mark it; these efforts are critical to America's economic prosperity, trade stability and national security.

Michael D. Emerson *is Director, Marine Transportation Systems & Senior Arctic Policy Advisor for the U.S. Coast Guard. Emerson graduated from the Coast Guard Academy in 1984 with a Bachelor of Science in Government Degree and has since received a Masters Degree in Military Studies from the Marine Corps University, and a Masters Degree in Business Administration from American Military University.*

Subchapter M Survey Reports

The advent of the subchapter M towboat rules – even though the bulk of the rules don't come into effect until July of 2018 – requires a close look at your equipment. How you go about that important task will make all the difference.

By Kevin P. Gilheany


Gilheany

Towing vessels should be surveyed for Subchapter M regulatory compliance, regardless of the compliance option chosen, so companies can budget and plan for upgrades between now and July of 2018. If a company is being proactive and strategic about Subchapter M, the time to start getting vessels surveyed for regulatory compliance is now. Having conducted a number of Subchapter M regulatory compliance surveys since the first of the year, a number of issues have surfaced and these are worth sharing.

Proper Tools

The scope of a towing vessel survey is laid out in Subchapter M, 46 CFR 137.220. Although this section is intended for a third party organization (TPO) survey, it still makes for a useful tool. But following this section alone falls far short of what is required. For example, 137.220(b) states *"… verify the vessel complies with part 144 of this chapter and…"* then it goes on to list seven areas to survey. The hard part is verifying that the vessel complies with part 144, and all the other parts of Subchapter M. A supplemental survey job aid form, containing all applicable requirements, turns out to be 56 pages, single-spaced.

The great part about using a custom survey tool such as this is that it can incorporate all the regulations that are referenced, such as Part 67 and Part 199, which makes it a stand-alone tool, with no uncertainty, or flipping around required. It's also useful to highlight all applicability exceptions and compliance dates which are essential for an accurate report. What separates an excellent compliance survey from the rest is accuracy. Anyone can write down his or her opinions. What is most valuable to the end user is accurate documentation of regulatory deficiencies. This is tedious work; even for the most experienced.

Assumptions

Before beginning a Subchapter M survey, some decisions must be made by the operator. Those decisions include, but are not limited to:

(a.) what route will the vessel have;
(b.) how many will be in the crew;
(c.) how many persons in addition to the crew;
(d.) warm or cold water operations;
(e.) will it be an excepted vessel; and
(e.) which compliance option will it have?

These assumptions should be listed at the top of the report and are essential for knowing which parts of Subchapter M apply and which do not.

Deficiencies

Although the bulk of Subchapter M doesn't come into effect until July of 2018, one regulation is already in effect for watertight integrity. 46 CFR 144.320 went into effect on July 20, 2016. Besides checking the condition of all watertight doors and their gaskets, some typical deckhouse penetrations that must be fitted with closure devices include the dryer vent and the forward hold vent. It may raise some eyebrows when it is explained that inspected vessels have drop-down metal covers with watertight gaskets for such openings. And, no matter how well prepared for what comes next that you think your boats may be, actual surveys of very well-maintained towboats(even those which have been in oil service under the OCIMF SIRE protocol) have turned up as many as 40 Subchapter M deficiencies per boat.

Preamble in Federal Register

It isn't as easy as it looks. Coast Guard marine inspectors are highly trained individuals who learn the ins and outs of navigating the numerous sources of guidance, beyond the actual regulations. For example, marine inspectors are taught to check the Federal Register discussion for any

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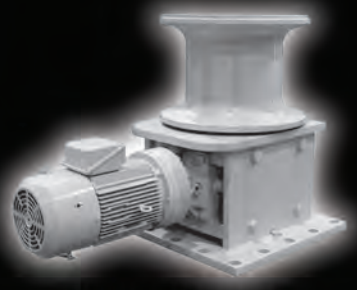

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regulation when they are unsure of the intent. It is a valuable skill and a good habit to get into. For example, when it comes to Subchapter M, Table 141.305 has a footnote indicating that a vessel in warm waters, with a Lakes, Bays and Sounds route, may use a skiff in lieu of a survival craft when more than 3 miles from shore. However, the text in 141.330 states that a skiff may be used in lieu of a survival craft for vessel *"that do not operate more than 3 miles from shore."* So which is correct? When researching that topic in the Federal Register discussion you will find, *"…vessels that operate more than 3 miles from shore may not use a skiff as a substitute for a survival craft except for those operating in warm water on the Great Lakes or Lakes, Bays and Sounds."*

This is only in the Preamble. If a surveyor didn't know to check the Preamble, he could have cost the company about $1,300.00 per boat. Regardless, this point may be moot. 46 CFR 141.330(c) states the skiff used as a survival craft must not exceed the boat's capacity plate. The jon boats on many towboats have a capacity of three people marked on the capacity plate. The assumption for most towboat's COI will normally exceed a total of 3 people on board.

Another item to be careful of is the requirement for emergency lighting. 46 CFR 143.410(b) states, *"Emergency lighting must be provided for all internal crew working and living areas."* What if there is no emergency lighting in the staterooms, only in the passageway? Isn't a stateroom a living area? Maybe. When you go to the definitions you will find no definition for *"living area."* It could go either way during a Coast Guard inspection. Should you buy emergency lighting for each stateroom just to be on the safe side?

Actually, the Federal Register Preamble clearly states, *"The Coast Guard received several comments asking whether berthing spaces were required to have emergency lighting under proposed § 143.310(a). Specific berthing spaces are not required to have emergency lights."* Problem solved. With the proper experience and tools, a surveyor can save clients a lot of money on costly compliance errors, as well as having such issues documented in case they come up in the future, which they certainly will.

Paperwork

Once the boat is brought into compliance by following the survey report, all that will be left is the paperwork. There are a great deal of required written records, and some policies and procedures, which obviously they will not be ready for at this early stage. However, once operators implement a comprehensive system, such as the Towing Vessel Inspection Record/Compliance Management System which contains about 30 forms, and does a little training, they will be ready to submit their application for inspection to the Coast Guard when the time comes.

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Kevin Gilheany *is a retired U.S. Coast Guard marine inspector, and owner of Maritime Compliance International, LLC, (MCI). MCI is not a Subchapter M TPO. Its staff of retired Coast Guard marine safety professionals works directly with clients to prepare for Subchapter M, TPO auditors, and the U.S. Coast Guard, regardless of the compliance option chosen. www.maritimecomplianceinternational.com. He can be reached at 504.249.5291, or info@marcomint.com.*

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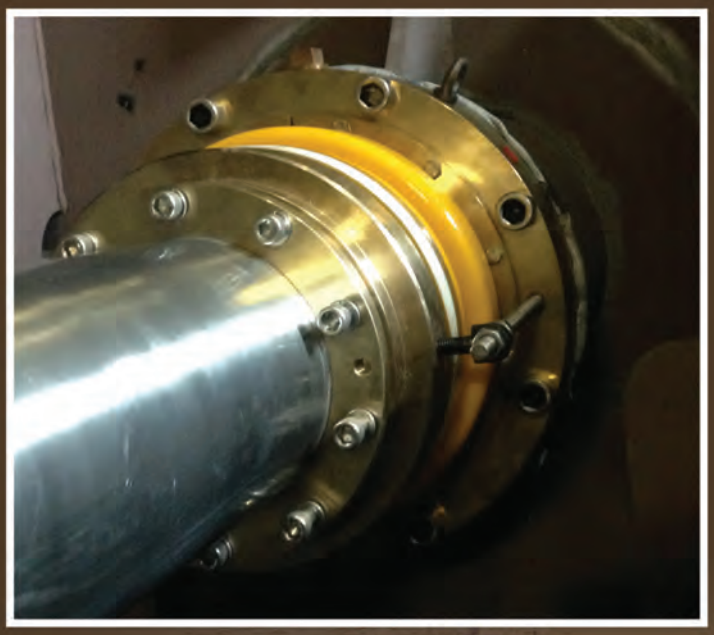

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Commercial Vessel Incidental Discharge Act (CVIDA):

Good for the Environment, Good for the Economy.

By James Weakley

Weakley

I think it safe to say everyone agrees the discharge of ballast water has introduced non-native species to ports and harbors worldwide and more must be done to stop future invasions. Unfortunately, beyond that, there's less agreement, much less. As a result, here in the United States we have two federal agencies, the U.S. Coast Guard (USCG) and the U.S. Environmental Protection Agency (EPA), plus, at last count, 25 states regulating discharges incidental to the normal operation of vessels, 16 of which are specific to ballast water. That's a recipe for confusion and all that follows, if ever there was one.

A legislative fix to this patchwork system of regulation almost passed during the 114th Congress. We can lament an opportunity missed, but the better course of action is to rejoin the battle, and we have with the Commercial Vessel Incidental Discharge Act (CVIDA [S. 168/H.R. 1154]). Like the previous legislation, it imposes the most stringent ballast water discharge standard currently achievable on commercial vessels, but equally important, provides vessel operators the assurance that the USCG type-approved ballast water management system (BWMS) they install will be approved for ports from Duluth/Superior to New Orleans, from Seattle to Boston, and all points in-between.

CVIDA's greatest strength is that the USCG is the lead agency. It has been enforcing federal vessel pollution laws much longer than the EPA has been in existence. It has far more field enforcement personnel familiar with vessel discharges than the EPA and is the only U.S. federal or state agency that is certifying BWMS as meeting any discharge standard. What is perhaps most telling is the EPA relies on the USCG to enforce its regulations contained in their Vessel General Permit (VGP).

CVIDA's state-of-the-art discharge standard is not static, it is dynamic, and the legislation uses risk-based science to develop what will be increasingly stringent discharge standards going forward. The USCG is tasked with determining that to meet these higher standards there must be BWMS that actually work in the commercial shipboard environment, so we won't face unattainable standards such as cries for "1,000 times IMO" (International Maritime Organization).

As important as the Great Lakes are as an avenue for waterborne commerce, they are also the source of drinking water for 40 million North Americans, so CVIDA provides even greater protection than current federal regulations by making permanent the current temporary requirement that commercial vessels entering the system from beyond the EEZ continue to exchange ballast water at sea after they install an USCG type-approved BWMS.

Passage of CVIDA could help resolve a looming threat on the Great Lakes. The IMO's Ballast Water Convention (BWC) was ratified in September of last year and goes into force this September. Canada, a BWC signatory, has stated its intent to impose different ballast water requirements than the USCG on U.S. vessels operating solely on the Great Lakes that transit its waters, even if they don't call on Canadian ports. Enacting CVIDA will provide a clear and uniform U.S. system of ballast water regulation to facilitate the development of a compatible Canadian regulation.

Critics of the legislation that nearly passed during the last Congress claimed the bill weakens protections of U.S. waters by preempting individual state's authority to establish different rules for their waters, and we are hearing this argument again. And they will again be wrong. In addition to the continuation of ballast water exchange for the Great Lakes described above, CVIDA ensures that the states (and

EPA) will be involved in the development of future discharge standards and states can request earlier and more frequent reviews of standards than they can under the VGP. States will also be able to enforce compliance with the USCG ballast water regulations should they enter into an agreement with USCG to do so.

This states' right argument also ignores one of the fundamental reasons this nation was founded as a union of states was to provide for a single authority with the power to uniformly regulate commerce among the states and foreign nations. When federal regulation makes sense, there should be a single, uniform, nationwide regulatory approach to provide regulatory certainty for businesses engaged in, and that facilitate the flow of, interstate commerce.

Some have asked me why LCA has committed so much time and resources to the effort to pass a uniform, federal ballast water discharge standard. After all, our members' vessels never leave the Great Lakes (most never trade farther east than Buffalo), and played no role in the introduction of the zebra mussel, the ruffe, the round goby or the other non-native species oceangoing vessels brought to the Lakes before mid-ocean ballast exchange became mandatory in 2006. The answer is very simple: LCA is committed to the Great Lakes environment and also needs consistent rules for its vessels that trade between ports in multiple states. When the ruffe was discovered in western Lake Superior in the late 1980s, it was LCA that developed a ballast water management plan for its members aimed at containing the ruffe. Launched in 1993, the plan was embraced by Canadian and third-flag operators trading to the Lakes. The U.S. Fish and Wildlife Service declared the plan "the cutting edge of technology."

That commitment has never lessened. The Great Lakes are our livelihood, but they are also our home. They must be protected from non-native species and CVIDA is the best way to do it.

__James Weakley__ is President of the Lake Carriers' Association (LCA). LCA has represented operators of U.S.-Flag Vessels on the Great Lakes since 1880.

The Many Missions (and Capabilities) of Weeks Marine

The almost 100-year old firm has many specialties, including the ability to construct innovative, complicated tonnage for its own purposes.

By Joseph Keefe

The slowdown in barge construction in some sectors hasn't dampened the need for specialty barges in other areas. In many cases, these mission requirements can involve the repurposing of existing tonnage using sometimes innovative and unusual design parameters. Such was the case when Cranford, NJ-based Weeks Marine (WMI) completed the conversion of an existing ABS deck barge into a loadline compliant, semi-submersible, all self-contained unit. Its first assignment involved transit to Canada for the launching of concrete caissons in Halifax, Nova Scotia for a new pier.

In July 2015, WMI and its subsidiary, McNally International (McN) – a heavy-construction company and wholly owned subsidiary of Weeks – met with JMS Naval Architects to develop plans for the conversion. McN already had two small barges used for caisson launching, but required a larger, more efficient barge to meet the demands of a new assignment.

Leveraging the resources of WMI equipment, personnel and facilities, McN contracted with JMS to come up with a design using existing equipment. It was agreed that the ABS Loadline deck barge Weeks 246, built in 1981, would be used as the platform and pontoons – previously fabricated for use in the protection of the temporary highway offshore of the FDR Drive in Manhattan – were to be used as wing walls. David Forrest, naval architect with JMS Naval Architects & Salvage Engineers, took the lead design role in the project. John T. Devlin, Sr. of Weeks Marine told ***MarineNews***, "David was the inspiration behind this project. I can't say enough about his knowledge and vision on this."

Forrest says simply that the project was a good fit for JMS. He explained, "We had not done much work with Weeks Marine before this project, but they were aware of us, and our interest and history with unusual projects. We had an initial meeting to learn more about what the barge needed to do, and to discuss some of the limitations and ideas that were being floated around – including a new design/build from scratch, which was eliminated due to the time constraints of the upcoming jetty construction project in Halifax beginning this month. Following that initial meeting, we put together a proposal and concept design, and were able to get started on the detail design pretty quickly."

That involved a number of tasks. "First, we evaluated the structure of the existing barge, and wing wall pontoons and developed drawings for the required modifications to the

structure," said Forrest, adding, "We performed a detailed stability analysis to determine what types of cargos could be lifted in the submersible mode, and we designed a new ballast and venting system to increase the flooding and de-ballasting times to the target values of 90 minutes each direction. The final design piece was the supports for the wing wall pontoons; it was important that the wing wall pontoons be removal so that transits through the St. Lawrence Seaway could be undertaken for future projects."

Taking Shape

WMI's Greenville yard started work in the fall of 2015. JMS met with the various team members at Weeks Marine and McNally Construction regularly through the design and modification process and performed site visits when necessary. Regular meetings allowed JMS to take full advantage of the collective operations knowledge and experience on the Weeks Marine and McNally side. Throughout the project, JMS worked with ABS to ensure that relevant drawings and calculations were reviewed for compliance with Load Line regulations.

A McNally team headed by Greg Burke worked alongside and in conjunction with WMI personnel as the project moved forward. This team oversaw the conversion and ensured that the design would meet all needs for current and future caisson fabrication as well as having the ability to use the barge for drydocking McN vessels and possibly even for use as a submersible transport barge. Devlin adds, "I can see this barge used as a semi-submersible for transporting floating equipment as well as a heavy lift transport for ro-ro operations, something which WMI does often."

The broad reach and versatility of the Weeks business portfolio came to light during the project. That's because the firm performs many missions; construction, dredging, salvage, and towing among them. And when they need equipment, they often turn inward to produce it. Devlin explains, "WMI converts and upgrades many pieces of floating equipment in our various yards located in Jersey City, Camden, Houma and Bourg, LA as well as Hawaii. While most of the work done in our yards is for internal use, we have done quite a bit of work for other companies as well. We have recently constructed concrete plant barges and submersible transport barges for the Tappan Zee Bridge project."

According to Devlin, a caisson is basically a bathtub shaped concrete structure used to build bulkheads. Fabricated on a barge and when completed, the barge is submerged to allow the concrete structure to 'float off' and be moved into position. Once set, the caisson is completed and filled with stone to set it on the harbor bottom, forming a new section of bulkhead. And says Devlin, McN has been successful at this procedure for several years, but as the caisson designs grew larger it became evident that a larger barge was needed.

Innovative Design Yields Impressive Capabilities

The new unit, the J.G. Burke, has an impressive capacity of 5,000 tons, able to handle caissons measuring

The J. G. BURKE (ex-Weeks 246) Caisson Launch Barge at a glance …

OFF'L #: 643092	(*) LOA (Overall) 250' x 105' x 36'	CLEAR DECK (SIDE LAUNCH): 150' X 75'
Length: 250'	LIGHT DRAFT: 3.5' mean	CLEAR DECK (STERN LAUNCH): 205' X 65'
Beam: 75'	CERTIFICATION: ABS Oceans	WING WALLS: (4) each 40' X 20' X 18'
Depth: 16'	CAPACITY: 5,000 tons	SPUDS: (2) Each 36" x 80' pipe self-elevating

(*) 105' width takes into account the added width when pontoons are deployed. They can be folded over onto deck (or removed) to get the 75' width. 36' refers to the maximum depth / draft when the unit is submerged during operations.

"I can see this barge used as a semi-submersible for transporting floating equipment as well as a heavy lift transport for ro-ro operations, something which WMI does often."

– John T. Devlin, Sr. of Weeks Marine

150 by 65 feet, weighing 3,000 tons each. Designed to be submerged by flooding all 15 compartments using remote controlled butterfly valves, the barge, once submerged, can be elevated using an on board compressor. The monitoring system was designed and installed by Electronic Marine systems (EMS) of Rahway, NJ. All systems are enclosed in a control house set 20 feet above the main deck. Beyond this, the barge has also been equipped with two self-elevating spuds to help keep it in position while on site.

As it turned out, the biggest design challenge, according to JMS, involved working within the parameters of the existing components that were used. Forrest explained, "By using an existing barge, and four existing pontoons for the wing walls, there were significant cost savings, but it was more difficult at times to design around existing structural arrangements. While attempting to maximize those benefits we had to keep the modifications as simple as possible and minimize the need to add new structure to compensate for less than ideal existing structure. Securing the wing wall pontoons to the barge with removable brackets required installing significant supporting structure inside the ballast tanks. All of the fit up and welding had to be done in place, and it was important to always keep that in mind while we worked on the design."

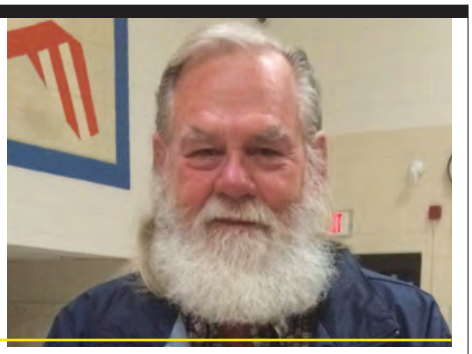
Forrest also points to the unusual design, and what that brings for his client during real operations. "This barge is very similar to a dry dock in how it operates, but due to its unique wing wall configuration, clear access is available from three sides for pouring concrete and placing rebar. A clear working deck of 150' x 65' is available. You would need a 100' wide dry dock to do what this one does, but it couldn't transit a 78' wide seaway. This one can."

But the advantages of this particular vessel go beyond its primary initial mission, especially in terms of its versatility. Forrest told ***MarineNews*** in April, "It makes perfect sense for Weeks Marine and McNally Construction to use the barge for dry docking other vessels when it is not being used for caisson construction, as it is perfectly capable of doing so." Other uses for the barge include transporting heavy cargo; ro/ro or float on/float off. With the ballasting system, the barge can be adjusted to match pier heights, or trimmed for launching. And, the barge has retained its load line, so it is additionally able to be used for transporting cargo on offshore routes.

The project ultimately brought together all divisions of WMI and McN, as well as some innovative vendors. Devlin adds, "Over the course of twelve months, all involved were able to build a unique piece of equipment that will serve McN and WMI over the years to come."

Looking Ahead – and Behind

WMI's Devlin says that Weeks hopes to get at least ten more years of service out of the converted barge, performing myriad tasks for multi-faceted firm. For now, the J. G. Burke joins WMI's fleet of barges, cranes, tugs, dredges and specialty equipment. That equipment notably includes



both a 300' drydock and a new hopper dredge of 8,000 cubic yard capacity, which is expected to launch in the summer of 2017. Founded way back in 1919, the company started with two floating cranes in the Port of New York, handling bunker coal and dry ballast. By World War II, the company had expanded, with seven cranes in its fleet. Today, the firm employs about 1,200 (half of those afloat) and its considerable fleet of multi-missioned workboats is well over 600 vessels.

The Halifax job, says Devlin, is an interesting assignment, but WMI routinely performs all manners of marine construction on a daily basis. For example, one particularly high profile recent assignment involved converting a deck barge into a stone placement barge for work at the Tappen Zee Bridge. In this case the barge was fitted with a hopper, conveyor and state of the art monitoring system to place stone bedding, at precise depths, over a large area under the new footprint of the bridge. Another ABS Loadline barge was converted to a processing barge to process dredged material for transport to an upland disposal site. Separately, the Marine Services Division recently adapted a Model 28 Clyde stevedoring crane to remove an 8,000 ton sunken drydock in Texas.

Devlin wouldn't tell us what comes next for WMI, but no doubt whatever it is, it will be unique in terms of mission, and innovative in terms of the techniques and equipment used to solve the problem.

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Rolling on the River with CORBA

As the Central Ohio River Business Association (CORBA) pushes commerce on the Ohio River, stakeholders are beginning to take notice.

By Tom Ewing

On January 19, in an office tower overlooking the Ohio River, Eric Thomas convened the first meeting of 2017 for a business group working in the 13th largest port in the US: the Ports of Cincinnati and Northern Kentucky (PCNK). Thomas serves as the Executive Director of CORBA – the Central Ohio River Business Association. PCNK's high rank is likely a surprise to many. But Army Corp of Engineers data (2016) ranks PCNK ahead of Norfolk, VA, and next in line behind the Port of Plaquemines, LA. PCNK handled 49.9 million

"How do we incentivize people to use waterways? We know the regular stuff. We need to focus on 'what ifs.'"

– Rob Carlisle, Partner with Carlisle & Bray

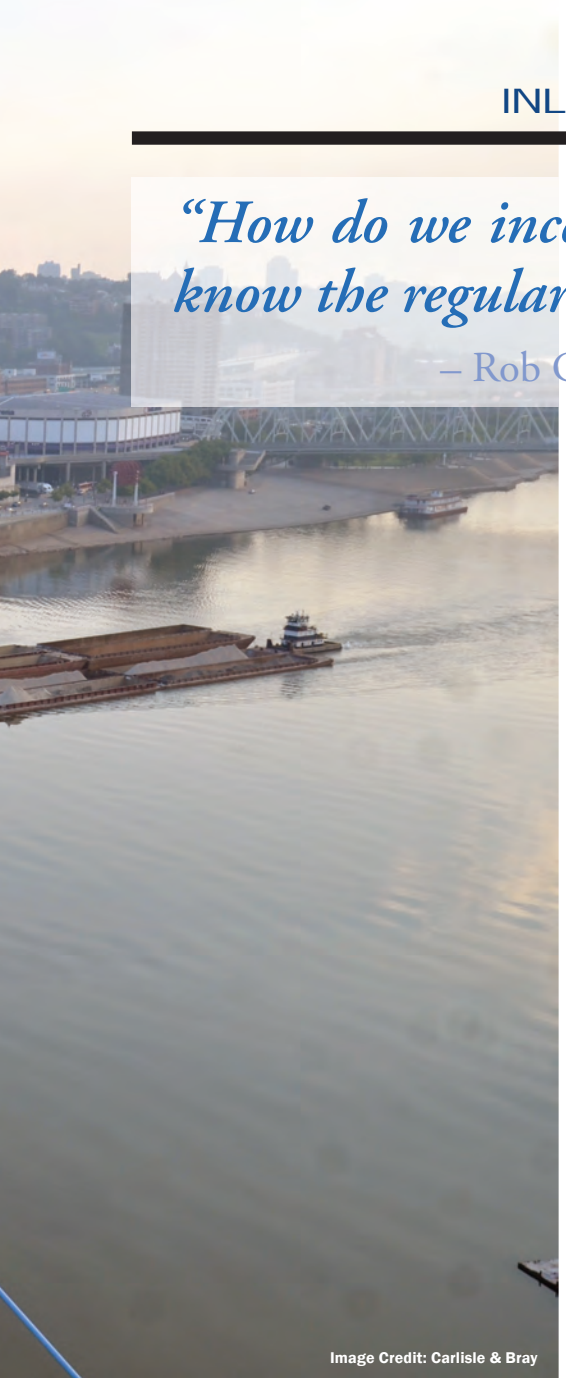

Image Credit: Carlisle & Bray

short tons of freight, Norfolk 48 million and Plaquemines 55.4 million.

Comparing inland waterways ports with ports like Plaquemines or Norfolk, of course, is not an apples-to-apples discussion. That's because there is no "Port" of Cincinnati and Northern Kentucky, at least in the way the term "port" commonly refers to a singular harbor, channel-way or destination or how a singular management team oversees operations. Inland river ports, like Cincinnati, are designated for statistical purposes; the "port" term reflects

an aggregate of data from hundreds of separate maritime businesses within certain boundaries, not a singular place.

Still, there's no denying a huge amount of maritime business and activity within PCNK's officially designated area, roughly 100 miles upstream and down from Cincinnati, and 7 miles south into the Licking River, an Ohio tributary, in Kentucky. (Again, just for comparison, the Port of Plaquemines includes 81 miles of the Mississippi River, from the Gulf to the Port, about twenty miles south of New Orleans.)

CORBA: more than cheerleaders

In 2011, maritime business leaders, and some political leaders, saw the need for an organization focused on Ohio River maritime issues because there was no single point of contact for people interested in Greater Cincinnati river freight services. CORBA was established in 2011, with four original members. Its motto: *"Pushing commerce within the maritime community."*

Today CORBA has 65 members. It is the go-to entity for regional maritime information. But it's more than a library. In the last six years, CORBA has positioned itself for engagement on a wide range of regional maritime issues and operations. For example, a top agenda item in January was the roll-out of a project started in 2016: an interactive listing of Ohio River marine businesses. This app, called CORIS, *Central Ohio River Information System*, allows a user to search via an increasingly detailed filter to find businesses with intermodal access, for example, or with a certain dock type or different storage options.

CORIS was developed in partnership with the Ohio-Kentucky-Indiana Regional Council of Governments (OKI), the metropolitan planning organization in Greater Cincinnati. Such partnership projects are important for CORBA members, providing a chance to get their interests front and center when projects start and develop. To

On Pushing for River Transport:

"What we're hoping for is that the state moves in this direction of trumpeting this asset,"

– Eric Thomas, Executive Director of CORBA and General Manager of Benchmark River and Rails Terminal

Image Credit: Carlisle & Bray

maintain and grow its membership, CORBA stresses these advocacy and networking benefits. Since OKI is a public agency, CORIS lists all regional maritime businesses, not just CORBA members. However, CORBA members are identified using the group's logo and web addresses are hot-linked.

Last October CORBA signed a Memorandum of Understanding with The Board of Commissioners of the Port of New Orleans to enhance cooperation and grow business. Building on that momentum, last March CORBA and DOT's Maritime Administration (MARAD) and Inland Rivers, Ports and Terminals co-hosted an "M-70 Strong Ports Workshop" in Cincinnati.

Real Projects – and Results

Rob Carlisle is CORBA's 2017 Chairman. Carlisle is Partner with Carlisle & Bray Enterprises, which operates marine and energy service companies, a marine consultancy – Score Global – as well as fleet facilities on the Ohio. Headquarters are on the riverfront in Covington, KY. Carlisle was asked about plans and goals for the year ahead. A topmost concern is for the new CORIS system to gain traction, to demonstrate real value for CORBA members and valuable for people from Houston to Denmark to Singapore.

Perhaps CORBA's most impactful project started in 2013 when the Army Corps was asked, by many groups, not just CORBA, to redesignate regional port boundaries. This change, concluded in 2015, pushed PCNK to its high national ranking. The port boundaries shifted from a very limited 22 miles to 99 miles east and west (about 198 miles total) up and down river from Cincinnati and Covington. PCNK now runs from Scioto County, OH, to the east to Trimble County, KY, downriver, about halfway to Louisville.

Obviously, an almost ten-fold enlargement will present very different commercial statistics. CORBA welcomed the attention: bring it on. After all, other inland ports had similar measures, similarly established. Cincinnati's revision was long overdue.

Carlisle wants CORBA to seek opportunities that build on its advocacy and marketing. Carlisle points out that as a transportation asset, the Ohio River is just 29% utilized; there's room for a lot more business. Carlisle likes to reference a June, 1950 trade magazine which contained a re-

Image Credit: Carlisle & Bray

port on automotive barge transport. Pointing to the article he asks: *"Back to the future?"* Maybe, he asks, automobiles from KY assembly plants, for example, could be driven, on trailers, right onto barges, pushed downriver to St. Louis, for example, and driven off to regional markets.

But, what Carlisle is really getting at involves larger questions: if that exact activity can't happen again, what can happen? What are the new possibilities for inland marine commerce, given very congested highways, projections for increased freight demands and environmental concerns? "How do we incentivize people to use waterways?" Carlisle asks. "We know the regular stuff. We need to focus on 'what ifs.'"

Future Plans

Carlisle's big-picture questions will get attention in 2017. Northern Kentucky University's business school will start a study of Midwestern intermodal transportation and logistics. Carlisle, along with CORBA Vice-Chair Jeff Stewart, President of Cincinnati Barge & Rail Terminals, has met with NKU leadership to help plan the study's scope and direction. Janaina Siegler, PhD, Assistant Professor Supply Chain at NKU, updated CORBA members at the January meeting. Information from CORBA will be a critical part of the foundational database.

In addition, the Ohio Department of Transportation (ODOT) announced that it is investigating how it might foster water freight transport. ODOT reps met with a CORBA team immediately prior to the January meeting – literally "new business" for the agenda. ODOT will convene similar meetings in February and March with freight and logistics experts in Marietta and Steubenville, OH, and Huntington, WV. These meetings will help set next steps.

The NKU and ODOT work present important opportunities for a private-sector group like CORBA. The research will likely identify infrastructure and capital projects that could start the momentum for new and expanded business opportunities, getting at some of Rob Carlisle's "what if?" questions. There might be a "last mile" road project, for example, that would quicken intermodal access. Or track improvements to speed railcar handling. Or a new or different crane, in a new or different location, might facilitate containerized shipping.

Separately, Branden Criman is Director of MARAD's St. Louis Inland Waterways Gateway Office. Criman's MARAD team knows of CORBA and its issues. Criman worked with local officials on PCNK's redesignation. She commented that CORBA is "well positioned" to develop project proposals, a container on barge service, for example. She cited the value of "working with state Departments of Transportation to identify regional intermodal infrastructure needs, projects that would provide efficient connectivity between highways, rail and ports."

Defining CORBA's Role

CORBA cannot officially sponsor projects needing public funds, e.g., serving as the "public" half of a public-private partnership. But it can still play a critical role because during competitive funding reviews officials like projects exhibiting private sector buy-in and showing a strong business case.

Eric Thomas, CORBA's Executive Director and general manager of Benchmark River and Rail Terminals, said that CORBA members want government and private sector activities that expand commerce on the Ohio River and bring new business; ideas that make the pie bigger. But, CORBA is at the same time leery of proposals, especially backed by government funds that would just duplicate existing business services.

For example, the State of Indiana has proposed a new port at the site of a shuttered coal fired power plant in Lawrenceburg, IN, about 20 miles downstream from Cincinnati. CORBA's initial reaction: Great if it is built around a new project offering new resources and business. But if public dollars just duplicate tank farms and warehouses and cannibalize existing business, that's not the kind of effort CORBA would get behind.

Thomas said he would like to see ODOT's work, for example, lead to economic development deliberately linking maritime services. He speaks of an economic development "mindset" promoting river freight capabilities. He points out after all, that Atlanta does not have a navigable waterway, or Indianapolis. Cincinnati does. That presents advantages which ODOT and its economic development teams need to define and characterize and promote, Thomas says. "What we're hoping for," he explains, "is that the state moves in this direction of trumpeting this asset," to present river and maritime strengths with the same emphasis given to railroads, highways, higher education and overall business costs.

For CORBA, ODOT's new study is an opportunity to fully develop this message. "But before they can talk about it," Thomas adds, "they need to understand it. Right now, they don't."

Tom Ewing is a freelance writer specializing in energy and environmental issues.

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Ground Zero for the Jones Act:

The Battle for the U.S. Gulf of Mexico

A vastly modernized U.S. offshore support fleet awaits the opportunity to perform Jones Act work in the U.S. Gulf of Mexico. Foreign operators, already here, predict disaster if a cabotage rule change takes effect.

By Joseph Keefe

A change proposed by the US Customs and Border Protection (CBP) in its Customs Bulletin & Decision newsletter promises reversal of a 40-year practice that, until now, allowed the use of non-coastwise-qualified vessels in the transportation of pipeline repair material; anodes; pipeline connectors; wellhead equipment; valves and valve guards; damaged pipelines; platform repair material; and similar cargo from one domestic point to another. The proposed change gave all interested parties until April 18th to make comment, a deadline which has now come and gone.

The CBP action has roiled the muddy Gulf of Mexico waters, pitting the International Marine Contractors Association (IMCA), an international association representing offshore, marine and underwater engineering companies against its domestic counterpart, the Offshore Marine Service Association (OMSA). OMSA describes itself as the voice for the offshore marine transportation service industry in the United States. The stakes are high as thousands of jobs and work for dozens of high tech vessels hang in the balance. And, the most important Jones Act discussion in recent history comes at a time when the domestic offshore support industry is on life support, awaiting the uptick of oil prices that would spark the renewal of offshore exploration and drilling.

IMCA's Chief Executive, Allen Leatt said in a prepared statement, "We understand the drive to protect US tonnage given the difficulties in the PSV market today, but the deep-water construction market represents a very different sector with very different vessels and technologies. It is a truly international market, as no single domestic market can support the heavy investments of these assets. Consequently, there is a real risk to damaging the whole Gulf of Mexico market as the unintended consequences do not seem to have been thought through."

IMCA grimly predicts the collapse of the Gulf of Mexico oil and gas sector if the CBP proposal is allowed to become law. OMSA naturally disagrees. "… since CBP signaled in 2009 that this ruling would be forthcoming, the U.S. offshore marine sector has invested more than $2 billion to ensure that offshore oil and gas exploration and production would not be affected. The 31 vessels constructed and retrofitted to meet this need are U.S. built, owned and crewed, and are subject to some of the most stringent safety standards in the world," insists Aaron Smith, OMSA President and CEO.

As ***MarineNews*** went to press, the fate of CBP order was still unknown, but moving forward. OMSA's Smith summed up the situation in Washington, explaining, "Statutorily, Congress has already done their part. They passed into law 19 USC 1625, the process they directed Customs to use to revoke letter rulings. Thus, CBP is the final arbiter if the Jones Act is enforced as written. That said; we have garnered

fantastic support from Congress with at least 33 Representatives and seven Senators publically supporting revocation."

Industry Weighs In

The American Maritime Partnership (AMP), a U.S.-based maritime advocacy group, quantifies the number of American jobs that could be saved by the CBP ruling at 3,200. OMSA puts the number of mariners impacted at about 1,000. Whatever the number, IMCA says the proposed rule change would have grievous and wide-ranging implications.

"Industry has relied on this precedent for 40 years and the CBP proposal creates great uncertainty. But if all non-coastwise approved vessels are banned from the GoM, then they would need to be redeployed elsewhere with the corresponding impact in those markets. Importantly, deepwater development in the GoM would be stopped in its tracks, with huge financial implications," Allen Leatt told *MarineNews* in April.

Not so, says OMSA's Aaron Smith. "Unfortunately, due to the downturn in the price of oil, there are few boats working anywhere. So while the Jones Act should have been properly enforced all along, there is no better time than now to start. The data we at OMSA compiled found that there were eight foreign flagged IMR vessels in the Gulf in February, two of which were cold stacked," he said, adding quickly, "Meanwhile, Jones Act operators have constructed more than 30 IMR vessels."

Even Leatt concedes that the CBP proposal, if it takes effect, doesn't involve a significant number of vessels. But, he insists, these are high-tech, specially designed vessels that cannot be replaced with lower end, generic U.S. hulls. "We are talking about a relatively small number of vessels, but vessels that are highly specialized and critical to offshore construction in deep and ultra-deepwater for which in many cases there are no Jones Act qualified vessels to perform this work. It needs to be recognized that GoM market is dominated by coastwise approved vessels and represent 90% of marine activity. The foreign flagged vessels occupy a small number of narrow niches in the market."

Comparing the Fleets:

OMSA and two of its most prominent U.S. flag operator members say that the U.S. fleet is more than ready to respond to any type of work in the Gulf of Mexico, with adequate numbers of high tech tonnage. IMCA's Allen Leatt says that's just not true. "Not at all," he told *MarineNews*, adding "We are talking about a completely different asset class of vessel for deepwater construction operations, for which there is no available or capable coastwise approved alternative. If there were, they would be competing in the market today. The massive US fleet is simply not

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Shane Guidry,
President, Harvey Gulf International Marine

Otto Candies, III,
Vice Chairman of the Board, Otto Candies LLC

Allen Leatt, Chief Executive, International Marine Contractors Association (IMCA)

present in key specialist areas of deepwater construction, such as pipelay, heavy lift, and well intervention."

If U.S. operators weren't ready eight years ago to perform this type of work, they claim to be now. Harvey Gulf International Marine President Shane Guidry explains, "After Customs put out their first notice in 2009, Harvey Gulf invested heavily in subsea construction vessels building the Harvey Deep-Sea, Harvey Blue-Sea, and Harvey Sub-Sea and Harvey Intervention, all of which are best-in-class multipurpose support vessels capable of doing any IMR work in the Gulf of Mexico."

U.S. operators, shut out of the game then, did not sit on their hands, says Otto Candies, III, the Vice Chairman of the Board at Otto Candies LLC. In response to ***MarineNews*** queries in April, he replied, "We recently launched the Paul Candies which will be our fifth IMR vessel. The Paul Candies joins the Chloe Candies, Ross Candies, Grant Candies and the Ocean Alliance (formerly the Cade Candies) to form our fleet of vessels with cranes of at least 100 ton capacity. Four of these five vessels were built subsequent to the 2009 Customs notice. This notice clearly signaled CBP's intent to properly enforce the Jones Act, and we invested in state of the art equipment to ensure that we could meet the market demand and accomplish the required work."

U.S. flag operators aren't done. Harvey Gulf will soon take delivery of two 340-foot MPSVs with 250-ton cranes from Eastern Shipbuilding. "These vessels will be newer and more advanced than any foreign vessel that is currently in the Gulf of Mexico," says Guidry. Otto Candies is on a similar path, with the delivery of the Paul Candies – a 101.25 x 20.6 meter, DP II subsea construction vessel that is built to modern and proven designs and capable of housing 90 people – also looming close on the horizon. Otto Candies adds, "The vessel will be outfitted with a 250 Ton Active Heave Compensation (AHC) crane capable of operating to a depth of 3,000 meters. We are proud of the fact that this vessel was constructed in our own shipyard, Candies Shipbuilders, LLC in Louisiana and that she will be capable of performing in a safe and cost effective manner for many years to come."

Nevertheless, an IMCA report released in April claims that "the coastwise fleet cannot meet the needs of the GoM for deepwater construction activities beyond 1,000 meters (3,280 feet). There are no coastwise qualified pipelay vessels, no coastwise qualified heavy lift vessels, and only one coastwise qualified well servicing vessel. Despite plenty of opportunity, historically the coastwise sector has not invested in larger, higher value deepwater capable construction and IRM assets outside of the LCV segment."

OMSA, of course, did its own research. The U.S.-based voice of the domestic offshore sector reports 31 vessels that had been newly constructed or retrofitted to provide the full spectrum of subsea services foreshadowed by CBP in the 2009 Notice. Table 1 shows Jones Act Qualified, Subsea Construction/IRM, DP2 qualified vessels.

Looking Ahead

We asked IMCA's Allen Leatt to consider the possibility that the CBP proposal would go forward and ultimately be enforced, to which he replied, "Clearly we would need to understand and evaluate the decisions, and our next moves would be based upon the best interests of the industry. But make no mistake, this is a serious subject and we trust that the new Trump Administration will undertake a full review and assessment of the potential adverse impacts of the CBP proposal in the overall interests of the US before taking any action."

Separately, Jones Act operators say that they are ready for any eventuality. Shane Guidry put it bluntly, saying, "Every operation covered by the CBP notice can be ac-

Aaron Smith, President and CEO, Offshore Marine Service Association (OMSA)

complished by Jones Act qualified vessels." OMSA's chief executive, Aaron Smith offered another view, with a clarification of what the rule says, and what it does not. "The CBP notice most directly impacts the work completed by subsea construction/IMR vessels; that is known and understood by all parties. As we have previously proven, there are more than 30 Jones Act IMR vessels available," he told ***MarineNews***, adding for emphasis, "It seems OMSA is the only ones talking about what the notice says. Interestingly, others are talking about pipelay and heavy-lift operations. The notice does not cover pipelay operations, and transportation of merchandise by foreign flag vessels during heavy lift operations is prohibited by the Jones Act and previous letter rulings not covered by revocation. OMSA has offered a legislative solution based upon a time-tested program to ensure heavy lift operations can continue. We are waiting to hear if that legislative solution will be accepted."

With the comment period now in the rearview mirror and the final notice date of May 18 looming large in the proverbial porthole, the matter could quickly be settled before summer. If settled in favor of Jones Act operators, Allen Leatt warns, "Industry just doesn't know the answer to this important question, which raises considerable uncertainty in many sectors of the oil and gas industry. Projects may simply have to stop – with all the practical, financial, and legal mess that would be created."

Otto Candies III disagrees. It's much simpler than that, he says, explaining, "IMCA wants people to think that the notice will kick all foreign vessels out of the Gulf, it won't. The notice doesn't deal at all with drilling so foreign flag drillships and MODUs will still operate here and the notice specifically states that installation and repair activities are not covered by the Jones Act, so foreign vessels can do those operations as well. All the notice says, is what the law says, foreign vessels cannot transport merchandise between two U.S. points."

Name	Owner	Crane (M/T)	Built or Converted
HOS Warland	Hornbeck	250	2016
HOS Woodland	Hornbeck	250	2016
Ocean Evolution	Oceaneering	250	TBD-2017
Paul Candies	Otto Candies	250	TBD-2017
Harvey Sub-Sea	Harvey Gulf	250	TBD-2017
HarveyBlue-Sea	Harvey Gulf	250	TBD-2017
HOS Warhorse	Hornbeck	250	TBD-2018
HOS Wild Horse	Hornbeck	250	TBD-2018
Harvey Deep-Sea	Harvey Gulf	165	2013
Harvey Intervention	Harvey Gulf	165	2016
Kirt Chouest	Edison Chouest	165	2008
Dove	C-Lift Holdings	150	2015
HOS Bayou	Hornbeck	150	2014
Ocean Alliance	Oceaneering	150	2011
C-Installer	Edison Chouest	150	2014
Holiday Edison	Edison Chouest	150	2010
Kelly Ann Candies	Otto Candies	100	2012
Wyatt Candies	Otto Candies	100	2012
Chloe Candies	Otto Candies	100	2006
Grant Candies	Otto Candies	100	2008
HOS Mystique	Hornbeck	100	2008
Ross Candies	Otto Candies	100	2009
SURF Challenger	Otto Marine	100	2007
Ocean Intervention II	Oceaneering	73	1999
HOS Ridgewind	Hornbeck	70	2015
Harvey Discovery	Harvey Gulf	64	2006
AMC Ambassador	Emas Offshore	60	1998
Brandon Bordelon	Bordelon Marine	60	2015
Ocean Intervention	Oceaneering	54	1998
Shelia Bordelon	Bordelon Marine	50	2015
Bordelon 104	Bordelon Marine	TBD	TBD-2018

Table 1 (source: OMSA)

Echoing those sentiments, Shane Guidry had the last word on the matter. "CBP's action is meant to correct inconsistencies between letter rulings and U.S. law. Additionally, this action is fully consistent with President Trump's 'Buy American, Hire American' initiative. Put simply, CBP is acknowledging that their letter rulings were wrong and allowed foreign vessels to transport merchandise from one point to another point, that's a violation of the Jones Act. We applaud CBP for getting it right and righting their previous wrong."

The most significant Jones Act battle in recent memory is still being played out in the Gulf of Mexico. What happens next is anyone's guess. The only thing certain is that both sides are "in it to win it."

Rapp Marine Deck Equipment Rounds out New Harley Barges

Rapp's workboat market offerings span the Full Range of operator requirements. Their latest contract provides a turnkey package.

Long known for delivering innovative and custom deck machinery solutions to a wide range of marine stakeholders, Rapp Marine recently was tasked with providing not one, but two complete equipment package for West coast-based Harley Marine Services (HMS). The Rapp portfolio spans the full gamut of machinery, from heavy duty tow winches for high horsepower tugboats, all the way to multipurpose cranes for barges or other workboats. Work started last year on the equipment for the Elliott Bay Design Group (EBDG) designed oil tank barges being built at Gunderson Marine in Portland, Oregon. The *OneDream* and the All Aboard For A Cure are both articulated barges intended to be paired with articulated tugs, eventually to provide service in West Coast trade routes, transporting petroleum to and for Harley Marine's customers.

In this case, the barge names have a personal meaning to Harley Franco, Chairman and CEO; honoring lifelong friends Larry and Sherry Benaroya of the Benaroya Research Foundation for the work they have done fighting diabetes. The name "OneDream" is derived from Seattle's successful T1D fundraising Dream Gala. OneDream will be propelled by OneCure, which aspires for a cure for Type 1 Diabetes. The other barge, named *"All Aboard for a Cure,"* speaks to Harley Marine's mission to give back to the community.

Rapp Marine's Custom Solution

Gunderson Marine worked with the barge designers Elliot Bay Design Group and the owners to determine the best integrated solution for the barge's deck machinery needs. Ultimately, HMS specified the equipment using a specific make and model along with performance criteria based upon existing equipment in their fleet, and included an "or equal" clause in the specification. Gunderson proposed an "or equal" set of equipment, based upon their experience, that was acceptable to HMS. The Rapp integrated solution was deemed to be the best fit for the job.

"Gunderson choose to propose the Rapp Equipment to our customer based on a combination of past history with Rapp, their extensive experience, and basically to provide support for the Pacific Northwest marine industry," said Rick

Hunt, Director of Marine Project Development at Gunderson Marine. And, the equipment, at first glance, is impressive. The Rapp Marine equipment on each barge includes a 75 foot crane, seven winches for anchoring and mooring, and a central hydraulic system to supply the hydraulic users. The on board cranes and winches will assist with moving deck machinery including hoses and connection pieces during loading and offloading procedures. The crane is specified to lift up to 1,700 pounds. Additionally, four double drum mooring winches and two single drum mooring winches were provided. These are designed to pull about 5 tons at first layer, and provide over 25 tons brake holding force.

Separately, the Rapp anchor winch is designed to accommodate 1,200 feet of 1-3/4" steel wire rope and 60 feet of 2-1/8" chain, and is rated to hold over 90 tons at first layer brake holding force, and pull more than 11 tons at first layer. Rapp also supplied a central hydraulic power unit (HPU) that supplies hydraulics to all of the users.

The contract furthers Rapp's efforts to grow its presence within the U.S. tug and barge market, ever evolving to meet or exceed new safety regulations, which translates to requiring rugged, durable equipment that will stand the test of time. "Rapp Marine has extensive experience delivering quality cranes and winches. This project for Harley Marine Services is a great example that displays our capabilities of providing a completely integrated deck machinery solution for the customer," Fin Moore, Sales & Marketing Manager at Rapp Marine U.S. told ***MarineNews*** in April. For his part, Steve Carlson, VP of engineering at Harley Marine Services, added, "Rapp Marine has a long history in the maritime industry and we anticipate that their equipment will contribute to the success of these new barges for many years."

To complement the new barges, HMS is also building and named two tugs. The 116 foot tugs, each being built at Conrad Shipyard of Morgan City, LA, are equipped with two GE Tier 4 propulsion engines, for a total of approximately 4,560 horsepower, and two John Deere Tier 3 generators. These cutting edge engines reduce NOx and particulate matter. As a combined articulated package, the four vessels embody environmentally correct and robust, safe equipment. Rapp Marine's Fin Moore summed up the project nicely, adding, "We feel privileged to have the opportunity to work with great organizations such as Harley Marines Services, Gunderson Marine, and Elliott Bay Design Group on this project."

All images courtesy of Rapp Marine

The Barges at a Glance …

Capacity: 81,900 barrels	Depth: 27 feet	Hose Crane: (1) Rapp Marine HP75-18F
LOA: 430 feet – 3 inches	Built: 2017	Mooring Winches: 4 Rapp Double Drum
Beam: 76 feet – 8 inches	GRT: < 7,000 LT	Mooring Winches: (2) Rapp Single Drum
Draft: 21 feet – 8 inches	NRT: < 5,000 LT	Pumping Capacity: 10,000 bph
Pumps: (2) Detroit Diesel	IGS: nitrogen gas	Anchor Winch: Rapp Marine
Slop Tank: 10,000 gallons	Rating: Grade "B: or lower	Class: ABS Certified Grade "B" A-1 Oceans

NEW APPROACHES TO INLAND INFRASTRUCTURE RENEWAL

Economical repairs are being applied to rapidly corroding steel and concrete structures in U.S. ports and inland waterways. The new repair systems – PileMedic & SPiRe – might just be what the doctor ordered.

Recent advancements in using Fiber Reinforced Polymer (FRP) for major structural repair and strengthening of submerged marine piles made of concrete or even timber has led to an economical, less invasive infrastructure repair solution for inland port development compared to current systems. This new composite-based system, called the SPiRe (Sheet Pile Repair) system, is a new way of repairing and improving port-facing structures in the nation's inland waterways. A sometimes forgotten area of the nation's infrastructure, immediate improvements are needed where commercial maritime cargo transportation in critical corridors such as Mississippi River System and the inland and intercoastal waterways of the eastern U.S. are being threatened by a crumbling and corroding port infrastructure.

PORTS QUICKLY REACHING END OF SERVICE LIFE

Many of these inland waterways and ports were constructed decades ago, and their designated service life is reaching an end. The combination of ocean spray, unexpected inland floods, and dry/wet cycles caused by wakes, waves and tidal action often result in rapid corrosion of steel reinforcement in concrete structures. Examples of inland port structures typically using this construction include steel piles, seawalls and sheet piles. Ports using this infrastructure are rapidly corroding and require repair and strengthening.

Repair using conventional materials and techniques such as concrete is time-consuming, typically requires extensive use of commercial divers, and can quickly become expen-

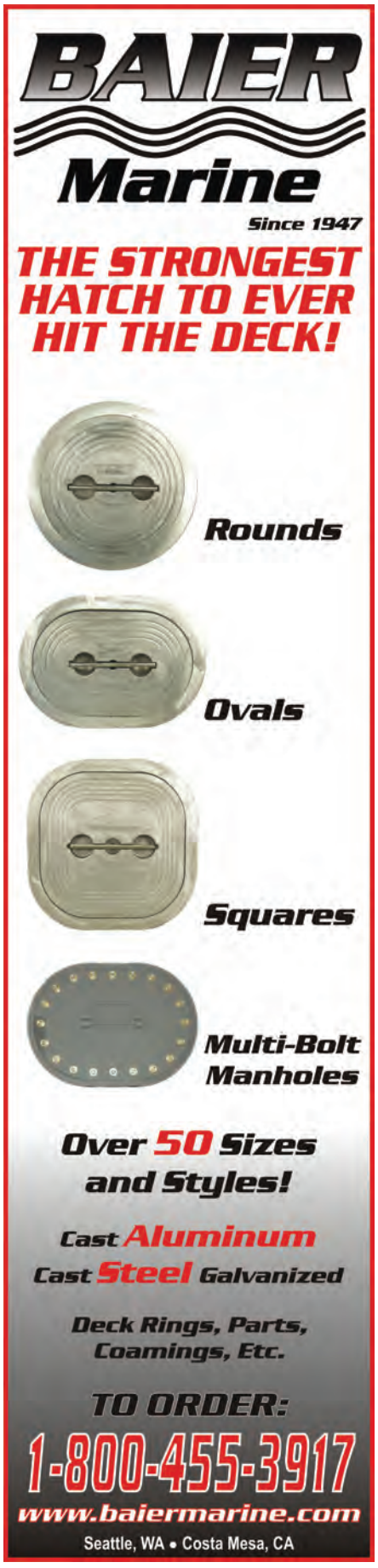
A new engineered repair system for seawalls is based on fiber reinforced polymer (FRP) technology that has been used for several years to repair and strengthen worn and damaged marine piles made of timber or concrete using specialized composites. Pictured here are worn bridge piles being wrapped with FRP laminates in St. Louis, MO.

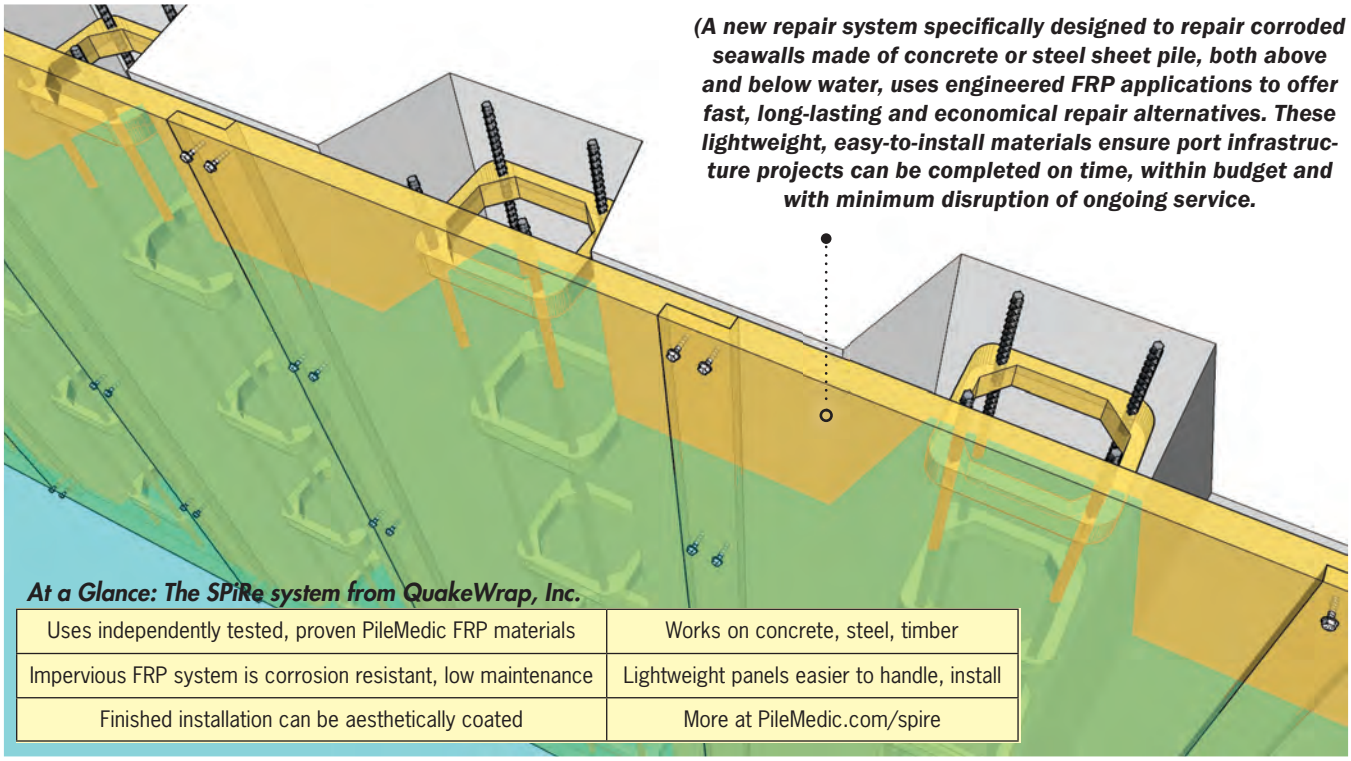
sive. These repairs also are not a long-term solution, as repairing or adding new concrete or steel to a structure will immediately begin to corrode again – just like the original structure.

CORROSION-RESISTANT SOLUTION

SPiRe is an engineered repair system that's based on FRP technology that has been used for several years to repair and strengthen worn and damaged marine piles made of timber or concrete using specialized FRP composites. The system is now specifically designed to repair corroded seawalls made of concrete or steel sheet pile, both above and below water.

Repairing these structures using engineered FRP applications offer fast, long-lasting and economical repair alternatives for organizations charged with the maintenance of ports. These lightweight, easy-to-install materials ensure port infrastructure projects can be completed on time, within budget and with minimum disruption of ongoing service.





(A new repair system specifically designed to repair corroded seawalls made of concrete or steel sheet pile, both above and below water, uses engineered FRP applications to offer fast, long-lasting and economical repair alternatives. These lightweight, easy-to-install materials ensure port infrastructure projects can be completed on time, within budget and with minimum disruption of ongoing service.

At a Glance: The SPiRe system from QuakeWrap, Inc.

Uses independently tested, proven PileMedic FRP materials	Works on concrete, steel, timber
Impervious FRP system is corrosion resistant, low maintenance	Lightweight panels easier to handle, install
Finished installation can be aesthetically coated	More at PileMedic.com/spire

SPiRe is a patented system provides added strength in addition to an impervious barrier that keeps water and oxygen away from the original structure material. By eliminating the inflow of oxygen, the corrosion rate reaches near zero levels.

This effective solution uses customized, engineered FRP panels made of lightweight honeycomb 3D fabric layered between sheets of resin-saturated carbon or glass fabric. These panels are designed to match the shape of the steel sheet pile or concrete seawall being repaired, and also by design are impervious to water, forming a barrier in front of the original wall that keeps oxygen – and thus further corrosion – away. The type of fabric (glass or carbon) and the orientation of the fibers within the fabric layers are calculated by the design engineer, and is based on the project load requirements.

The SPiRe repair system is engineered to be installed directly on submerged sheet piles without the use of coffer dams or other heavy equipment. Panels are typically four feet wide and as long as necessary. Multiple panels can be joined together either above water (prior to installation) or under water during the installation process.

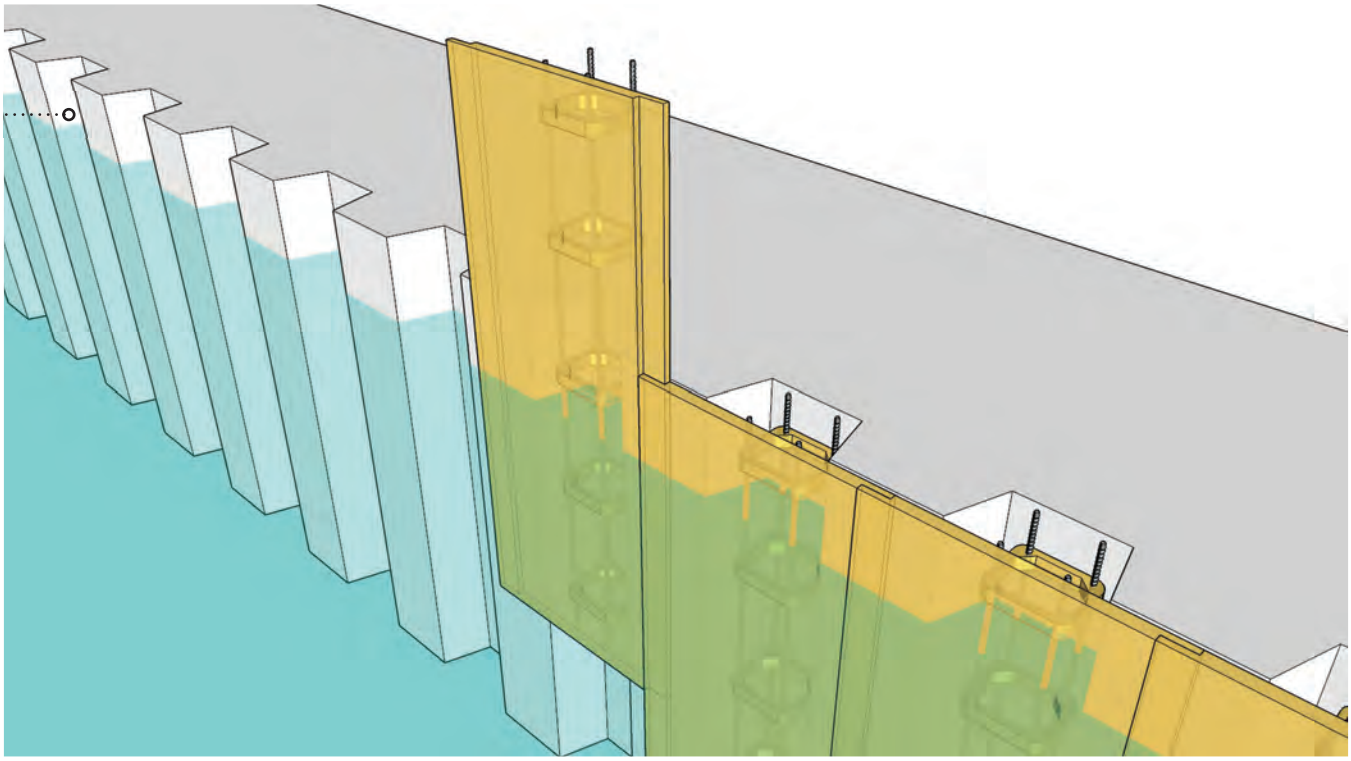
INLAND INFRASTRUCTURE RENEWAL: ADVANTAGE SPIRE

SPiRe repairs and restores sheet piles and sea walls in depths of up to 50 feet. This more than covers most average mean navigation depths for inland and intercoastal ports. SPiRe is an engineered solution that improves structural integrity using fiber reinforced polymer (FRP) technology. It can be engineered to almost any thickness and strength, as required by the original structure. FRP marine pile and sheet pile repair systems can be engineered to handle any kind of large debris the structure or structures may regularly encounter due to floods or tidal surges, as requested by the contracting organization. Some of the repair and strengthening projects in the marine and waterfront space that can benefit from professionally engineered FRP solutions include:

- *Repair of corroded seawalls and steel sheet piles;*
- *Reinforcing barriers between industrial surface water bodies and sensitive open waters;*
- *Fast and economical repair of the underside of concrete floors and beams in decks and piers damaged by corrosion; and*
- *Strengthening of concrete or timber floors and beams in decks and piers to carry heavier loads.*

The FRP materials used in the SPiRe system are the same used in the PileMedic by QuakeWrap system, which has a solid track record of successful underwater pile repair and strengthening. An article describing how this system was first used for underwater surface structural repair can be found at: http://pilemedic.com/pdfs/PileMedic-Underwater-Repair-in-Miami-Building.pdf.

In most cases, QuakeWrap engineers can provide a com-



plete "turnkey" design-build sheet pile or seawall repair solution that includes sealed engineering drawings by experienced, in-house engineers, needed materials, and installation by one of our approved certified installers. This unique design-build approach results in significant efficiency, time and cost-savings, and minimizes the potential errors and delays that can result when multiple groups are involved in one project. In a nutshell, the patented technology can result in stronger, corrosion-resistant structures that represent significant cost savings in the repair of inland port facilities and waterways.

Mo Ehsani, *Ph.D., P.E., S.E., is founder and president of QuakeWrap, Inc., developer of the SPiRe seawall repair system and its sister product, PileMedic by QuakeWrap, for repair of marine piles. He is a Professor Emeritus of Structural Engineering at the University of Arizona.*

Photo: Harley Marine Services

Navigating the ABC's of SCR

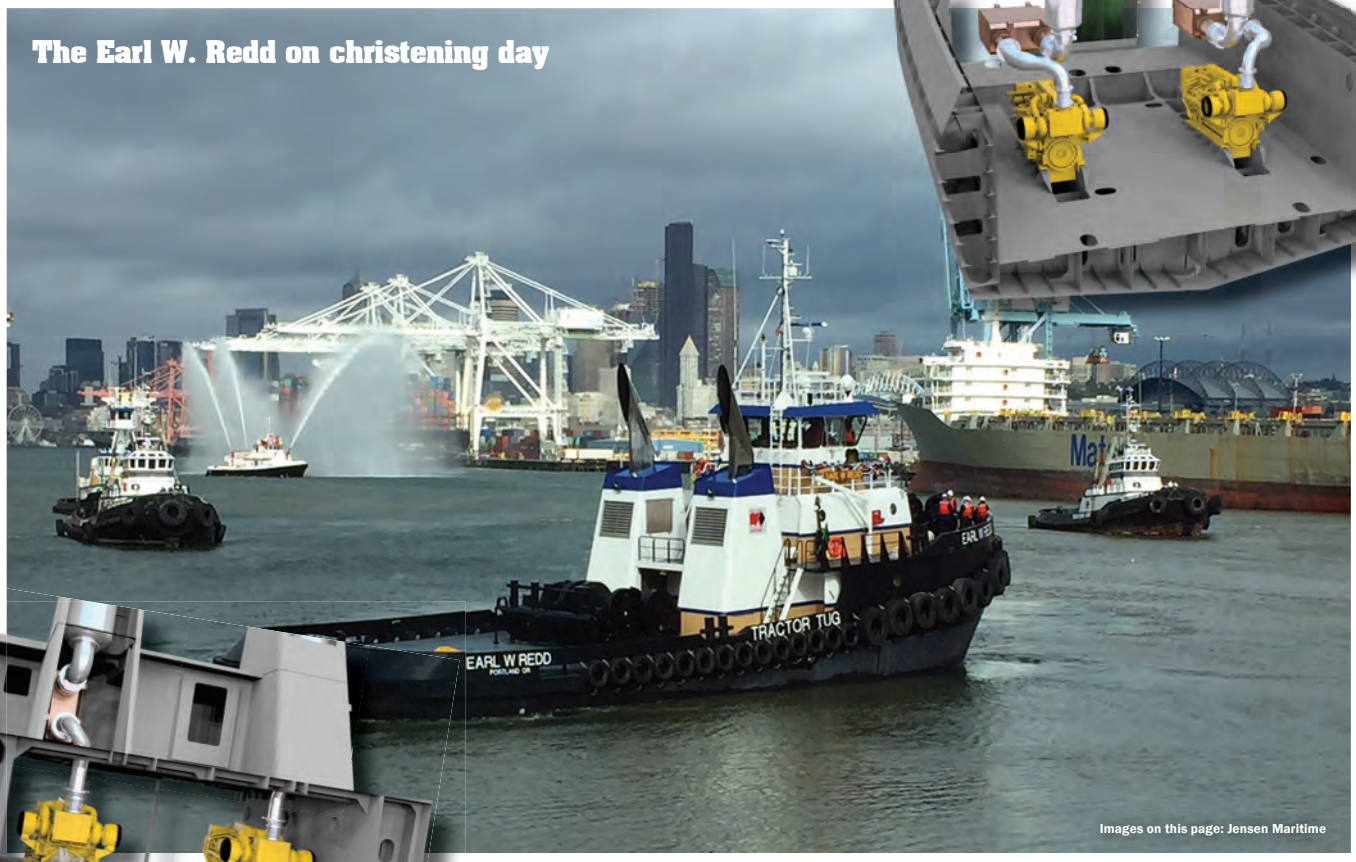
On the way to Tier IV compliance, it turns out that experience counts.

By Joseph Keefe

In late February, the nation's first Tier IV, Selective Catalytic Reduction (SCR) tugboat was christened. That's probably not earthshaking news all by itself – after all, SCR isn't all that new – but the event likely ushers in a new era of powerful domestic workboats that also come with a greener environmental footprint. How all of that comes together is a bigger story, and one which will play out again and again in the coming year or two. At the heart of it all is Crowley subsidiary Jensen Maritime Consultants, who today lead the design field with no less than seven Tier IV, SCR versions in development. Digging deeper, it isn't hard to see why.

Below Deck, Behind the Scenes

The new Tier IV hull comes with a silver lining. With the larger size, customers can use it for multiple missions – something all operators are looking for in an increasingly competitive commercial environment. Jensen Vice President Johan Sperling explained the trend to ***MarineNews*** in February, saying, "All these new vessels, they're all multi-purpose tugs. For example, the 100' foot design for Bay Delta has a half focs'le on it so that they can go out in rougher weather and do other things. That's a key trend that we are seeing. And everything's tighter – margins are tighter for everyone."



The Earl W. Redd on christening day

Images on this page: Jensen Maritime

It is here where Jensen excels, in part because of geography. "Operators have to figure out how to get maximum utilization out of their tugs and maybe for us, this is more intuitive, because we're sitting right next to the harbor tug operators here at pier 17," said Sperling, who adds, "So we hear their struggle every day, and they use these vessels for multiple purposes and one of the ways to do that is by making a multi-purpose tug. That comes with a back side because it costs more money to build it. And they have to determine how much more money they have to spend, and at what level of utilization for what compensation rate that they can get it back."

The design challenges are many when it comes to building a new tug with Tier 4 and SCR. First and foremost, the increased physical footprint of the equipment comes into play. "Every tug, whether 90 or 100 feet LOA; are being maxed out. So whether you are adding tier four after treatment or something else, the engine rooms are just getting more and more packed. The second thing that has been a real challenge is that's there is increased heat that both the engine manufacturers and the shipyards and everyone else didn't take into account as much as they could have. We've had to increase flow of air into and out of the space," he said. Sperling also reminds us, the technology is brand new. "We've seen it in cases where the solution didn't lay out the way it was originally described. And then, you are redesigning on the fly and some of that is happening. But, arguably, that's normal."

Selective Catalytic Reduction

SCR systems scrub emissions by converting nitrogen oxide (NOx) into ammonia, which is then absorbed by ceramic bricks built into the engines. The technology significantly reduces the amount of NOx, particulate matter and hydrocarbons released into the environment, and makes the 120-foot vessel one of the cleanest-running tugboats in terms of marine emissions. In this case, the nation's first Tier IV compliant tugboat employs a proprietary CAT SCR solution. Built at Diversified Marine's shipyard in Portland, Oregon, Harley's Earl W. Redd comes with Rolls-Royce US 255-P30-FP Z-drive propulsion and two Caterpillar 3516E diesel engines, for a rated 5,000 horsepower. Two, 125 kilowatt-hour (kW) John Deere generator sets provide the tug's electrical power.

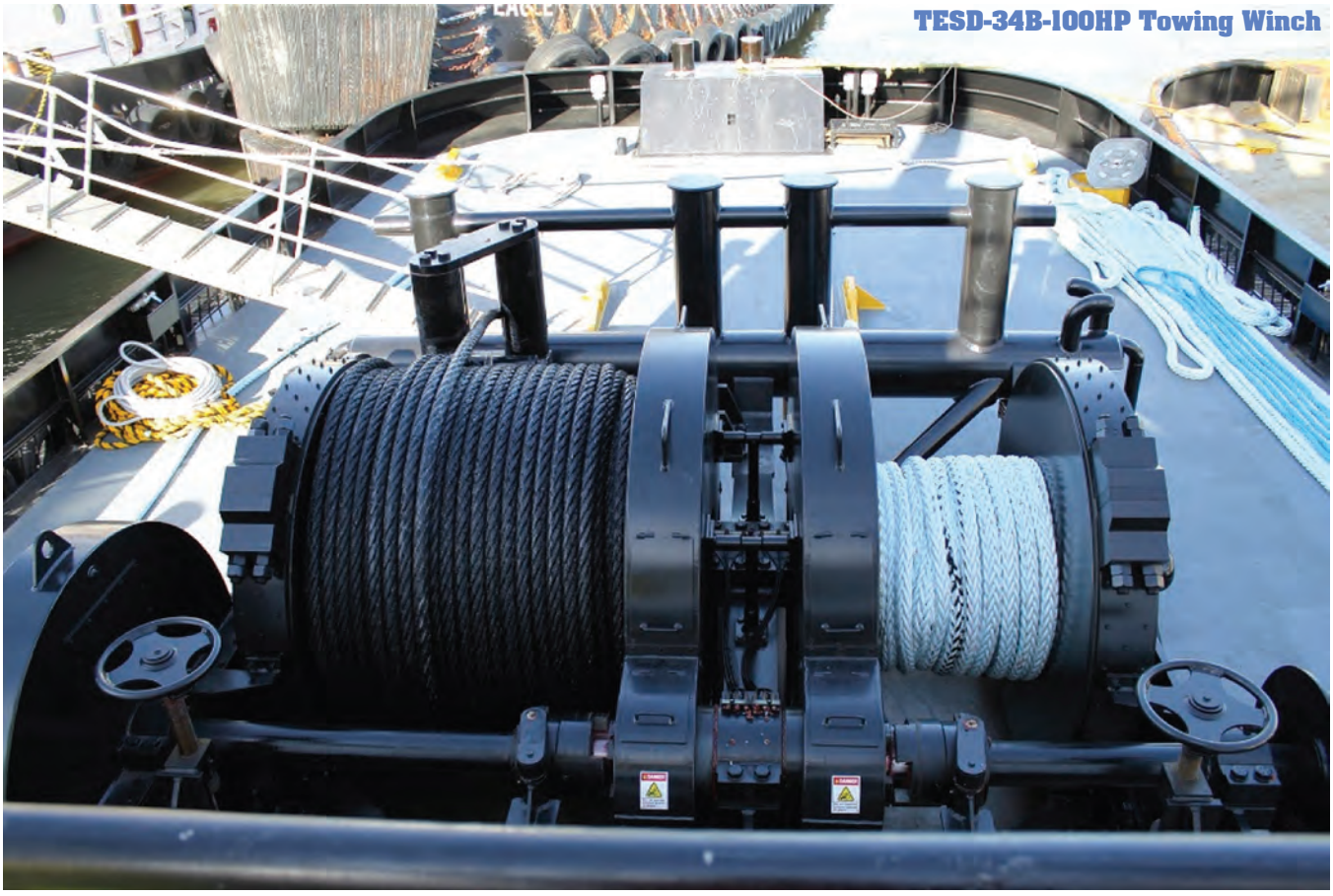
At the design phase, and later when the boat is in operation, SCR adds many obstacles to the end result. Operators want more horsepower, and the bollard pull race is

"Operators have to figure out how to get maximum utilization out of their tugs and maybe for us, this is more intuitive, because we're sitting right next to the harbor tug operators here at pier 17. So we hear their struggle every day, and they use these vessels for multiple purposes and one of the ways to do that is by making a multi-purpose tug. That comes with a back side because it costs more money to build it. And they have to determine how much more money they have to spend, and at what level of utilization for what compensation rate that they can get it back."

– Jensen Vice President Johan Sperling

anything but over. The Tier 4 requirement has just added another headache. But says Sperling, it's nothing that's not solvable. "It means more design, more engineering; it means warmer engine rooms and tighter spaces. In addition, the operators got to handle urea, which is a new thing. And, that's another physical constraint – you have to put in the urea tank. It has to be completely freestanding tank, which, depending on the design, that's not an easy thing to squeeze in. and, although it can be made smaller if you are going back to the same dock every day, the Harleys, the Bay Deltas and the Crowleys don't always know they'll be going back to the same dock every time."

For customers that aren't looking for pure assist and escort tugs – multi-missioned hulls – Jensen might design the urea tank bigger than 80 percent of their operational window. In the early days of SCR, flexibility in the design shop is everything. Sperling explains further, "Another client (Bay Delta) wanted a high horsepower tug and we



TESD-34B-100HP Towing Winch

Photo: Copyright Markey Machinery

let them know we'd need to make the tug bigger and they said, 'as long as it meets my tonnage requirements, no problem.' But, we can't make the tug any bigger so if in future, the engine OEM needs more space, we may be in trouble from a tonnage regulation standpoint." He also concedes, "It is not straightforward. But, I would say it is less of a headache for us than it is for the operator. There's nobody in the world that has more experience with a tier 4 tug than Jensen."

Decisions, Decisions

Today, Jensen is involved with at least five Tier IV compliant tugboats under construction, with options of up to eight. Clients include McAllister (2), Bay Delta (1), Harley (1) and one more [undisclosed] client. The McAllister tugs will be their first to utilize high-efficiency catalytic after-treatment technology to reduce emissions and will have an approximate bollard pull of 90 short tons. On the other hand, says Johan Sperling, workboat operators have other options – but these come with caveats.

"It's all regulatory at this point. I think the early adapters, there may have been a few who wanted to be green, but today, you have no choice. It's too late now to plan a project and not be Tier 4 unless you go with diesel electric or a hybrid system. Above 804 HP, you must go Tier IV."

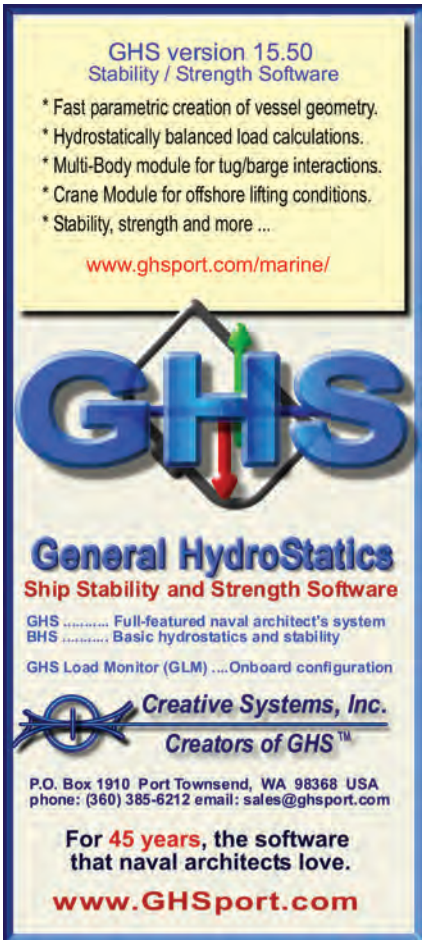
A so-called "tier beater" arrangement – 2 or 3 smaller engines in tandem is feasible, but regardless of what an operator decides, the cost will increase. Those alternatives are there, but are more prevalent with lower horsepower assist tugs. There's always a trade off – a series of smaller, 'tier beater' engines might require a large engine room, a wider boat and compromises somewhere else on the boat.

There is, says Sperling, a significant uptick in information being shared about diesel electric and/or hybrid arrangements and/or technology. "A lot of people don't like urea – I don't blame them. The after treatment system can be large, it is warm; it has all kinds of things that we're not used to. So, people are looking at these other opportunities, but we just haven't seen as much of it – yet. If you look internationally, it is being deployed."

Today, the alternative technology is there, but the economics are not panning out. And here, unlike in Europe, there's no advantage to being a little bit greener. For those operators choosing to go LNG, you might have a Chief engineer who has been running diesels for 25 years. Now, they need to learn new technology. That costs money. Projecting ahead just a bit, Sperling opines, "We're in this weird space where people haven't decided exactly what to do with the Tier 4 challenge. I happen to think that a lot of it is driven by oil prices and if we see prices go in a favorable direction for LNG, you might see LNG tugs in the harbor."

Unfortunately, the price differential between an SCR engineered Tier 4 solution, hybrid, and/or LNG or dual fuel systems aren't necessarily a straightforward calculation. But, says Sperling, Jensen is ahead of that curve as well. "There's fuel consumption, there's maintenance to think about; it is a huge amount of work – and we've done a ton of that for Crowley. We keep that in house. But, the capital costs between the other options and SCR is getting closer." Bottom line? Sperling says that some customers feel that the SCR version is closer to what they're used to for the mission(s) of their fleet. That said, "SCR – it is cheaper today – but if you plot those two lines, they are getting closer and closer. At some point probably, capital costs are the same – it's a matter with what they are comfortable with," he adds.

Following its christening, the Earl W. Redd joined Harley's Olympic tug-and-barge operations along the U.S. West Coast, including in Alaska, the Puget Sound and on the Columbia River. Eventually, at least six and possibly seven more SCR enhanced, Tier IV compliant tugs will join the collective U.S.-flag workboat, from sea to shining sea. They'll be built in different yards and be operated by different firms in different places with differing missions, but in the end, they'll all have one thing in common: a clean, regulatory compliant SCR emissions solution that's been skillfully designed by Jensen to maximize performance while giving up as little as possible in operational capabilities.



Employing HydroComp NavCad for Optimized Design

HydroComp NavCad, internationally recognized for resistance and propulsion prediction for naval architects, can also leverage analysis capabilities with features that support optimized hull form and propulsion system design.

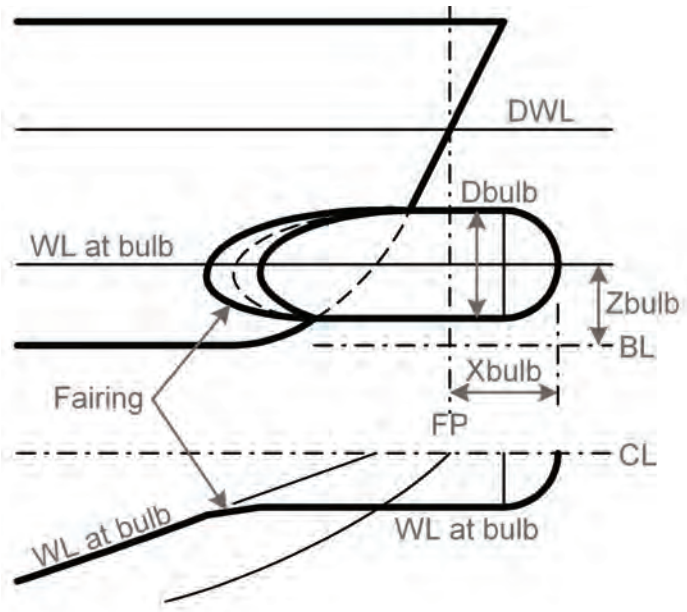
NavCad may be most well-known for its library of parametric-statistical hull form and propulsion system models (often called "1D" models). The recent introduction of the Premium Edition now brings a higher-order distributed-analytical ("2D") hull form analysis to design optimization. Called the Analytical Distributed-Volume Method (ADVM), the scope of design optimization can now offer both a first order assessment and an analytical calculation of a more refined definition of hull form.

Parametric-statistical optimization

NavCad's parametric-statistical ("1D") optimizing utilities specifically do not identify a singular optimum figure, but rather indicate trends and influences. As many different design requirements influence a vessel's design and construction, employing a unique hydrodynamic optimum is rarely attainable.

Donald MacPherson, HydroComp Technical Director, notes "The Drag Reduction tool provides designers with a meaningful metric to identify changes to the present hull design that will reduce drag and increase performance and efficiency. For example, it offers practical insight into the 'What if' questions: What if half angle of entrance is decreased? What if I add a bulb? What if the LCG is shifted aft? Designers and naval architects now have the ability early in the design to rapidly evaluate the influence of various hull parameters on vessel drag, and more importantly, on real operational efficiency."

Schematic and implemented bulb geometry

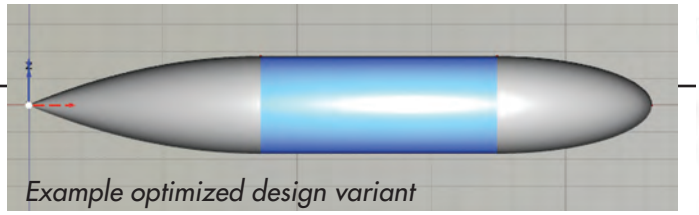


The resistance curve for the initial design is the "basis" resistance. The Drag Reduction analysis then evaluates the influence on resistance of the change in various hull parameters – length, displacement, LCB, even transom immersion, for example. The hull parameters are then organized by influence, with the most significant parameter presented at the top of the table.

It is also important to consider not only the hydrodynamic influences of the parameters at the design speed, but also across the operating speed range. For example, transom immersion may be beneficial at high speed, but detrimental at lower speeds. In order to consider the influences on overall operation, NavCad's drag reduction analysis allows the user to enter primary and secondary operating profiles using speed and time-at-speed. A "Total energy" weighted influence is calculated based on these user-defined primary and secondary operating profiles. This total energy approach allows NavCad to evaluate the effect of a hull parameter on the change of overall energy consumption of the vessel.

MacPherson continues, "By knowing the general hydrodynamic influences and trends as suggested by these tools, a designer can improve and optimize hydrodynamic performance in a way that does not compromise other design constraints, such as stability, structure, loading, or producibility. It is extremely valuable for a naval architect to simply know which direction to push a parameter when juggling the various – and often competing – design requirements."

In a similar fashion, NavCad can evaluate the effect that vessel loading and initial trim can have on operational performance. NavCad's Effect of initial trim utility provides



Example optimized design variant

useful information to designers and operators alike. In an effort to reduce fuel consumption, ship operators are often interested in the effect of initial trim on the performance of the vessel. This supplemental tool will provide an essential assessment of the effect of initial trim on bare-hull resistance for ships large and small.

Distributed-analytical optimization

The Analytical Distributed-Volume Method (ADVM) module is a bare-hull resistance prediction method that can be used to supplement a parametric-statistical method. Inspired by analytical wave-making theory, it is a prediction of ship resistance where the hull form is described by the longitudinal distribution of the immersed volume and not by parameters. Calculation of wave-making and viscous drag, including a careful prediction of form factor and frictional drag coefficients, completes the computation of total bare-hull resistance. HydroComp's design mission for the module was to provide a method that was:

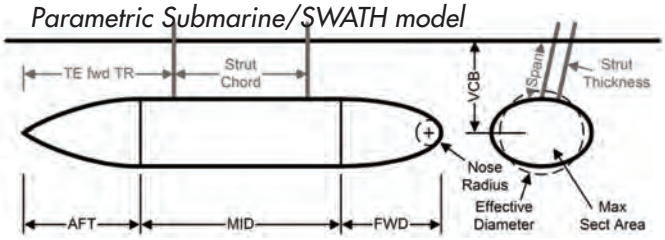
- ***computationally efficient,***
- ***reliably predicted total resistance,***
- ***was uniformly consistent and well-behaved, and***
- ***required no extensive training in the methodology.***

Due to its basis in the distribution of the immersed volume rather than its 3D wetted surface (such as is used by CFD), the definition of the hull is fully descriptive of significant shape characteristics for the purposes of optimized design. For example, where a parametric-statistical model may be limited by the nature of a parent hull form, the ADVM analysis allows any description of sectional area curve, waterplane distribution, transom immersion, entrance and run shapes.

Extensive validation studies were conducted by HydroComp for the development of the ADVM module. It is both quantitatively reliable in the prediction of resistance and qualitatively functional for comparison of design variants.

NavCad Premium includes features that allow the ADVM method to be run as a coupled solver, including a batch or macro scripting API for data and processes, and quiet mode operation without the GUI (server mode). NavCad can be coupled with third-party software such as Excel or Matlab, as well as optimizing-purposed tools like CAESES. The NavCad coupled solver process is simple and computationally very efficient.

Parametric Submarine/SWATH model



Example optimized designs

The use of NavCad for optimized design can be for the "whole system" or a "component". Recent published studies of "whole system" optimized design with NavCad include an AUV, waterjet-driven patrol boat, and a motor yacht. A very successful "component" optimized design study was for a bulbous bow retrofit.

System optimizations

A variety of optimized designs have been conducted using NavCad coupled with the CAESES software as the executive third-party tool for the management of the geometry and optimization processes. NavCad is the simulation solver responsible for all resistance and propulsion predictions.

An AUV system optimization project highlighted a parametric-statistical optimization using NavCad's Submarine/SWATH prediction methods. The hull was described as a body-of-revolution shape with three zones – fore, mid, and aft (as shown in the graphic below). The design objective was minimum shaft power, with NavCad conducting a component optimization of the propeller at each design step. An analysis of 64 variants was conducted in less than six minutes on a general-purpose business computer.

Two surface vessel projects conducted with NavCad as a coupled solver were for a waterjet-driven patrol craft and a planing motor yacht. The patrol craft used the ADVM method for resistance prediction, with an equilibrium force-moment planing solution employed for the motor yacht study. The patrol craft reviewed more than 500 variants at less than two minutes per variant, optimizing for a minimum weighted resistance-weight ratio (Telfer coefficient).

Hull form component optimization

While NavCad's strength is in its systems engineering solutions, it is also a very powerful analysis tool for hull form component optimization. NavCad was coupled with Excel for the optimized design of a bulbous bow retrofit on a research vessel. The ADVM distributed-analytical model was used for the calculation of resistance as the volumetric shape was modified with different bulb geometries. Microsoft Excel handled the creation of the modified data and the calculation management with NavCad operating in its quiet "server mode". A weighted total energy objective was used to determine the best combination of design parameters for the new bulb – leading to substantial reduction in fuel rate and an increase in operational top speed.

Southwest AK Pilots Order Pilot Boat from Gladding-Hearn

The Southwest Alaska Pilots Association in Homer, Alaska has ordered a new 'Galveston Class' pilot boat from Gladding-Hearn Shipbuilding, Duclos Corporation. Delivery is scheduled for 2018. The wheelhouse, flush-mounted to the deck amidships, features forward-leaning front windows, each fitted with retractable solar blinds. It will be outfitted with six Llebroc seats, a settee, berth, and a small galley behind the helm station. An eight-camera LCD CCTV system will be installed in the wheelhouse, with four cameras mounted in the engine room, two cameras in the jet room and two on the aft deck. The forecastle will include two staterooms, head with a shower, dressing area and hanging lockers. Interior sound levels at full power will be under 74 dBA. A multi-zone hydronic system will provide heating and air conditioning to the wheelhouse, forecastle and engine room. Outside of the wheelhouse, the roof, main deck, and all of the handrails will be heated by a hydronic deck heating system. The vessel will be provided with a handheld remote for use of port and starboard hydraulic rescue davits. A Humphree interceptor, with automatic trim optimization, is installed at the transom.

LOA: 75.7 feet	Design: C. Raymond Hunt Deep V hull	Construction: all-aluminum
Beam: 20.6 feet	Engines: (2) Cummins QSK38-M1 (EPA Tier 3)	Water Jets: Hamilton HM651
Draft: 3.11 feet	Gear Boxes: Twin ZF-5000 gear boxes	Top Speed: 28 knots

BMT Wins Design Contract for Four US Commuter Ferries

BMT Nigel Gee (BMT) announced its latest contract in partnership with sister company BMT Designers & Planners, for four 26.3 meter catamaran passenger ferries, destined for operation with Potomac Riverboat Company. BMT worked with Potomac Riverboat Company to develop the concept for the new vessel and continues to support the project with production engineering to the selected builder. Eventually, the vessels which will operate daily will have the capacity to carry up to 149 passengers and connect Washington D.C., Maryland and Virginia. The vessels have been developed based on a proven BMT Nigel Gee hull

form and will be powered by two x Scania Marine Di 13 (405 kW) continuous duty-rated EPA Tier III engines plus two x FP propellers, providing a service speed of 22 knots. The ultra-low wake design provides maximum comfort and low impact on this type of craft at relatively high speeds.

ESG gets Nod to Proceed with NYCDOT Ferries

Eastern Shipbuilding Group (ESG) announced receipt of its Notice to Proceed dated March 1, 2017 from The City of New York Department of Transportation (NYCDOT) for the detail design and construction of three (3) new Staten Island-Ollis Class Ferries for the Staten Island Ferry Division. The three (3) Ollis Class double-ended 4500 passenger ferries, are from a design provided by Elliot Bay Design Group, with each ferry featuring four (4) Electro-Motive Diesel (EMD) 12-710 Tier 4 compliant propulsion engines with two (2) engines powering one (1) Reintjes DUP 3000 P combining reduction gears and one (1) 36 RV6 ECS/285-2 Voith Schneider Propellers at each end of the vessel.

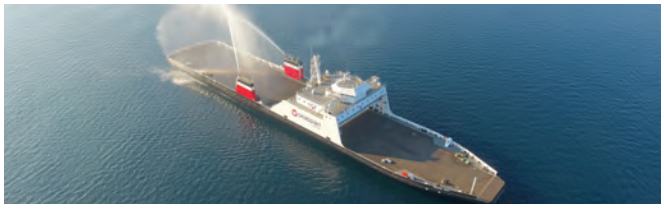
LOA: 320 feet	Gross Tonnage: 4,570 Tons	Depth at Main Deck at Side: 21.5 feet
Beam, Molded: 70 feet	Installed Horsepower 9,980 HP	Displacement (molded): 3,380 Long Tons
Draft to DLWL: 13 feet	Fuel Oil Capacity: 30,000 gallons	Maximum Passenger Capacity: 4,500

Robert Allan Ltd. Designs New Fleet of Pusher Tugs & Barges

A modern fleet of pusher tugs and barges for Louis Dreyfus Company have recently begun construction in Brazil, to designs from Robert Allan Ltd. of Vancouver, Canada. The vessels will transport bulk grain products on the Amazon River system, with an expected delivery in 2017. This shallow-draft fleet includes three RApide 4000-Z3 class mainline pusher tugs, one RApide 2600-Z3 class pusher tug, three RApide 2000-Z2 class port-assist pusher tugs, and 64 jumbo hopper barges. During the early phases of design, extensive Computational Fluid Dynamics (CFD) simulations were used to optimize the hull shapes to minimize total convoy resistance. In all cases, the z-drives are fitted in customized tunnels designed to optimize flow and propulsion efficiency while reducing draft. In conjunction, logistics modeling of the transportation system optimized the selection of vessels for the desired route and analyzed operational drafts and cargo throughput at various river levels. These studies aim to reduce the overall cost of transportation, while the design of the vessels increases the standards of safety, maneuverability and comfort in the river system.

Seaspan Celebrates Two New LNG Fueled Vessels

Seaspan Ferries Corporation (SFC) officially welcomed two new, state-of-the-art dual-fuelled/hybrid (liquefied natural gas, diesel and battery) vessels to its fleet last month during a double commissioning ceremony held at SFC's Tilbury Terminal. The Seaspan Swift and Seaspan Reliant, the first eco-ferries of their kind in North America, were formally christened by sponsors Christy Clark, Premier of British Columbia, and Anisa White, wife of Doug White III, Councillor and Chief Negotiator for Snuneymuxw First Nation. Following their construction at Sedef Shipyard in Istanbul, Turkey, the Seaspan Swift arrived in December



2016 and entered operation in January 2017, while the Seaspan Reliant arrived in late February and is scheduled to begin service later this month. The 148.9 meter ferries, which can accommodate up to 59, 53-foot trailers, mark the first new vessels added to SFC's fleet since 2002.

Great Lakes Shipyard Builds Nation's First SubM Compliant, ABS Tug

Great Lakes Shipyard is currently building the first of ten (10) Damen Stan Tugs 1907 ICE. This milestone marks the beginning of a new construction program to introduce two (2) new harbor tugs per year for the next five (5) years at the Shipyard's facility in Cleveland, Ohio. Built to ABS Class, GLS Hull Numbers 6501–6510 will be the first tugs built to meet the new USCG Subchapter M Regulations. The Great Lakes Towing Company & Great Lakes Shipyard entered into a partnership with Damen, who will Damen provide engineering for its proven designs and Great Lakes Shipyard will receive full construction, design and engineering support from Damen.

Delivery: June 2017	Mission: Ice Breaking, Harbor/Coastal Towing	Classification: ABS Sub M
Designer: Damen	Depth (Amidships): 11 feet – one inch	Length: 63 feet – 5 inches
Design Draft: 10 feet	Displacement: 165 long tons	Beam: 24 feet – 2 inches

YANMAR America Announces Organizational Changes


Arne


Edge


Miller


Smith

YANMAR America has announces changes to its organizational structure that will strengthen its customer support functions. The company's operations functions have been split to form two new divisions – Manufacturing and Operations. The Manufacturing Division will encompass manufacturing, production, quality management and procurement, and will be led by **David Smith**, current Director of the Operations Division. The new Operations Division will include logistics, warehousing and facility maintenance/safety, and will be led by Director **Doug Englert**. **Arne Irwin** has been named the Customer Support Division Manager. Other key leadership positions include **Liston Edge**, Senior Manager of Parts & Accessories; **Rickey Walker**, Senior Manager of Customer Service and **Tim Miller**, Senior Manager of Training & Education.


Kull


Frangou


Grennan


Grondzi

Marcia Kull is President of Torqeedo

Marcia Kull has been named President of Torqeedo Group and will direct global sales and strategy. Kull joins Torqeedo from Volvo Penta of the Americas, where she was most recently Vice President, Marine Sales. Prior to that, she was Senior Vice President of Operations for Genmar Holdings. Kull is a graduate of the University of Iowa, a member of the NMMA Board of Directors and Executive Board of Directors, and Chairwoman of the NMMA Engine Manufacturers Board of Directors.

Frangou to Receive Honorary Doctorate from SUNY Maritime

Angeliki Frangou, chairman and CEO of the Navios Group, will receive an honorary Doctor of Science degree and deliver the commencement address to the college's approximately 300 graduates on May 5. The honorary doctorate is the highest form of recognition offered by the State University of New York system. Frangou is a fifth-generation ship owner who ran a publicly traded company and raised more than $200 million to merge it with Navios in 2004. Frangou holds a bachelor's degree in Mechanical Engineering from Fairleigh Dickinson University and a master's in Mechanical Engineering, from Columbia.

Grennan Appointed President of SCAA

Devon Grennan, CEO and President of Global Diving & Salvage, has been appointed President of the Spill Control Association of America (SCAA). SCAA is a professional association representing spill control contractors, manufacturers, distributors, government agencies, and various qualified individuals within the industry. Grennan has served on the board of SCAA since 2012 and has been elected to serve a two-year term.

Grondzki Named as YANMAR Marketing and Events Manager

YANMAR America announced that **Todd Grondzki** has been named the Marketing and Events Manager for the company's Training and Experience Center currently under construction in Georgia. Grondzki will be responsible for developing and managing the Center's relationships with YANMAR America's business partners, management team and employees. Prior to joining YANMAR, Grondzki most recently owned Blue SkEye Aerial Media, a drone services company, which provided aerial media and survey/inspection services. He holds a BS in Business Marketing from Florida State University.

WCI Presents Awards to Congressman Gibbs, USACE's DALE

Congressman **Bob Gibbs** (R-OH) has received Waterways Council, Inc.'s (WCI) 16th Annual Leadership Service Award for his strong and continued leadership on ports and inland waterways issues. Also on March 21, 2017, U.S. Army Corps of Engineers' Programs Director of the Great Lakes and Ohio River Division **David Dale**


Gibbs


Dale & Hettel


Scalise


Din


O'Hollaren


Dinh-Zarr

received the 2017 Waterways Counsel Award for his diligence and leadership in working with the waterways industry. The award was presented by WCI Board Member **Martin Hettel**, who is also Chairman of the Inland Waterways Users Board.

Rep. Steve Scalise Receives AAPA's 2017 'Port Person' Award

The American Association of Port Authorities (AAPA) bestowed its 2017 "Port Person of the Year" award on U.S. Congressman and House Majority Whip **Steve Scalise** (R-LA) for his strong advocacy of the maritime industry since coming to Congress in 2008. Now serving his sixth term representing Louisiana's First Congressional District, Scalise has built a broad coalition of port and maritime leaders with the creation of the Maritime Advisory Council, which meets annually in New Orleans.

Windrock Names Business Development Manager

Shirin Din has joined Windrock in the role of Global Sales and Business Development Manager – Commercial Marine Diesel. Shirin, who will lead the effort to develop global distribution and certified service partner networks, has over 20 years of Sales and Contract Management experience with Wartsila and MAN. She holds an MBA from the University of Liverpool.

O'Hollaren Hired as Portland's Marine Marketing Director

The Port of Portland announced that **Ken O'Hollaren** was hired to lead the Port of Portland's marine marketing

Alps Wire Rope


Benner


Briand


Lee


Eling


Hughes


Eastwood

efforts. O'Hollaren previously served as the executive director of the Port of Longview and the Port of Port Angeles, and brings more than 25 years of experience in the maritime industry to the role. Port of Portland is the largest deep water port in the state of Oregon.

NTSB Leadership Changes

Christopher A. Hart's term as Chairman of the National Transportation Safety Board concluded on schedule Wednesday and Vice Chairman **Bella Dinh-Zarr** will serve as the agency's acting chairman. Hart will remain at the NTSB, applying his transportation safety expertise in the capacity of a board member. Hart's tenure as the NTSB's 13th Chairman began March 15, 2015. Prior to her appointment to the board, Dinh-Zarr served as Director of the U.S. Office of the FIA Foundation and has held positions at AAA, the National Highway Traffic Safety Administration, the U.S. Centers for Disease Control and Prevention, and the Texas Transportation Institute.

Alps Wire Rope Announces Management Changes

Alps Wire Rope Corporation has announced several management changes. **Mike Briand** has been promoted to National Sales Manager. He has been with Alps for 5 years and in the wire rope industry for over 30 years. Previous to Alps, Mike was the Vice President Yoke North America. **Ross Benner** has been appointed Regional Manager for the North Central area. Ross has been with Alps for more than 21 years and previously served as Purchasing Manager and Customer Service Representative. **Bill Lee** is appointed Regional Manager for South Central area. Lee has been with Alps Wire Rope for over 11 years as a Sales Representative. He previously worked for NOV and MacWhite, for a total of 36 years in oil & gas.

Bristol Harbor Group Welcomes Eling

Bristol Harbor Group announced that **Daniel Eling**, P.E. has been added to BHGI's naval architecture and marine engineering practice. He has a B.S. in Ocean Engineering and is currently working towards his M.S. in Ocean Engineering at Virginia Polytechnic Institute and State University. Prior to attending college, Dan served in the U.S. Coast Guard. He also worked at Alion Science & Technology. He is a licensed Professional Engineer in Virginia and is also a member of SNAME, ASNE, and the Royal Institute of Naval Architects.

SC Ports Announces Retirement of Hughes

South Carolina Ports Authority announced the retirement of Senior Vice President of Finance and Administration/Chief Financial Officer **Peter Hughes**. Stan Van Ostran, former Vice President and CFO of Metropolitan Nashville Airport Authority (MNAA), has been selected as Hughes' replacement and will assume the position on July 1. Hughes is a 34-year veteran of SCPA. SCPA selected Stan Van Ostran, an attorney and CPA with 35 years of progressive finance experience, to join the Port on May 1.

Eastwood to Lead Shakespeare Marine

Bill Eastwood has been appointed business manager for the Shakespeare Marine Electronics product line of Jarden Applied Materials. Eastwood is now responsible for global sales and marketing of Shakespeare antennas and accessories. He comes to Shakespeare with over three decades of experience in marine electronics, previously serving as marine products sales manager at McMurdo Group, and held similar roles at OceanLED and Navionics.

Danos Names Staff Employee of the Year

Danos announced that **Scott Theriot** has been named 2016 Staff Employee of the Year. The award is presented each year to a staff member who best embodies the company's core purpose and values. Theriot first joined Danos in 2003, working part-time as a roustabout and fitter in the company's fabrication shop while going to school. After graduating from Nicholls State University, he was hired full-time as a personnel coordinator. He later worked as a Vessels of Opportunity manager before moving into materials management, ultimately rising to Danos' senior account manager for Shell.

Danos Staff

WTS International

Le Floch Khazraeian Jones Tymchek Srinivasan Davini

Wingart

WTS International Announces 2016 Scholarship Winners

WTS International has announced the selection of the winners of its six scholarships for 2017. The winners will be recognized on May 18 during the 2017 WTS Annual Conference. The scholarship winners are **Caroline Le Floch** (Helene Overly Graduate Scholarship), **Samaneh Khazraeian** (Leadership Legacy Scholarship), **Gwen Jones** (Molitoris Leadership Scholarship for Undergraduates), **Marisa Davini** (Sharon D. Banks Memorial Undergraduate Scholarship), **Soshia Tymchek** (Junior College Scholarship), and **Sruthi Srinivasan** (Transportation YOU High School Scholarship). WTS Foundation was created to grow the transportation industry's workforce through scholarship, research, and education.

Greensea Appoints Quality Control Engineer

Greensea announced the appointment of **Kevin Wingart** as Quality Control Engineer. Prior to joining Greensea, Kevin worked as a principal engineer for ERIN Engineering and Research where he performed probabilistic risk assessment for nuclear power plants. Kevin served four years in the United States Air Force and one year in the Peace Corps as a renewable energy technology transfer volunteer. He earned his degree in Electrical and Electronic Engineering from California State University.

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Construction Skiff

Construction skiffs are constantly brutalized by the men and the environments they encounter. The new Snow 16 ft Construction Skiff is a hybrid of several designs. Self-bailing decks keep the bilges dry. We added side and bow decks that are both safe and comfortable to stand and sit on. Below these side decks are open storage compartments for miscellaneous safety gear and supplies.

www.snowboatbuilding.com

Yale Cordage for Durability and Safety

Yale Cordage's application-specific cordage is known for its durability and safety benefits, particularly for those working in wet and abrasive conditions. Two products – Ultrex and Unitrex – offer unique benefits for shipyards and marine builders. Both feature high-strength ultra-high-molecular-weight polyethylene Spectra fibers. Ultrex is designed to optimize break strength and Unitrex offers comparable stiffness and stretch to a wire product while being much lighter.

www.yalecordage.com

JDN Standardizes Hoist & Crane Control

J D Neuhaus (JDN) has developed an innovative and robust new concept for controlling hoists and cranes. The company's JDN-RC (Radio Control) receiver is designed for long-lasting performance in rigorous offshore operating environments, including ATEX (explosive atmosphere) zone 2/22 conditions. Featuring a solid and extremely compact receiver to suit even hoists with low-carrying capacity, all components are accommodated in a shock-resistant GRP casing offering protection class IP65.

www.jdngroup.com

Magnetek's Cable Reel Product Line

Magnetek's cable reel product line effectively and compactly manages large lengths of cable, ideal for marine terminal applications such as ship-to-shore cranes, port gantry cranes, and deck and construction cranes. The Company's IMPULSE AC digital drives provide unmatched performance, versatility, reliability, and safety for marine terminal applications. Magnetek's Mondel braking systems are designed to meet the needs of a variety of applications, increase productivity, and enhance safety.

www.Magnetek.com

Innovative VFD Technology for Markey

Known globally as an innovative winch manufacturer, Markey has focused on integrating high-efficiency AC electric variable frequency drive (VFD) technology into deck machinery for over two decades, particularly for applications requiring high-response active heave compensation and line control. Markey's Render/Recover and Asymmetric Render/Recover winches are considered the "Best Available Technology" for this application and are used worldwide.

www.markeymachinery.com

Alps Wire Ropes

Alps Wire Rope Corporation offers Large Diameter General Purpose Ropes that are ABS certified and manufactured to API 9A for slings and operating ropes. General Purpose, 6-Strand ropes are constructed to resist crushing and wear but provide flexibility and strength. Diameters up to 3-1/2", drawn galvanized are available in various grades. Fabricated to order slings and specialty lifting rigging are also available.

www.alpswirerope.com

Dr. Shrink Celebrates 25 Years in Business

Dr. Shrink celebrates 25 years of success in 2017. Dr. Shrink, Inc. is a full-service, full-circle supplier of premium shrink wrap and all installation supplies and accessories. With shrink wrap immediately available in widths from 12'-60', it's a single-source supplier for all shrink wrapping products and accessories including heat tools, adhesives, zipper access doors and vents.

www.dr-shrink.com

Centek BilgeKleen Filter System

Centek Industries BilgeKleen filter system automatically removes hydrocarbons from bilge water before it is discharged. The patented system uses a filtering medium that binds to hydrocarbons and allows water to pass through freely. Over 99.9% of the hydrocarbon pollutants are captured, with no increase in pressure to the bilge pump. It installs easily to the bilge pump discharge line to fit any bilge space.

www.centekindustries.com

Hobart Brothers Celebrates 100th Anniversary

Hobart Brothers is commemorating its 100th anniversary. Hobart introduced its first arc welder in 1925, built all-steel homes and founded the Hobart Trade School, now the Hobart Institute of Welding Technology. Today, the company is best known for formulating and manufacturing filler metals for the welding industry under the Hobart brand, as well as manufacturing welding power sources for the retail marketplace.

www.HobartBrothers.com

AMEsolutions Celebrates 25 Year Anniversary

www.AMEsolutions.com is comprised of Advanced Mechanical Enterprises/AME and Advanced Maintenance Engineering/AME. Since 1992, AME has pioneered the use of the most cutting-edge technologies and state-of-the-art equipment to the diagnostics, maintenance and repair of rotating machinery for private and commercial vessels. AME is recognized as an external specialist for condition monitoring by ABS and is an authorized representative for Windrock and authorized distributor of Wartsila seals.

www.AMEsolutions.com

The Longest Lasting Nonskid from SilvaGrip

Peel and Stick Nonskid manufacturer Silvagrip has received its patent and the U.S. Navy has assigned NSN's for Silvagrip. The long lasting peel and stick Aluminum/Ceramic Surface has a ten year warranty. It is corrosion, UV and water proof. Easy application requires no special equipment. Its flexible construction conforms to any deck surface and is Helideck Certified. It is available in sheets or rolls.

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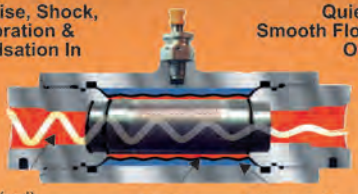

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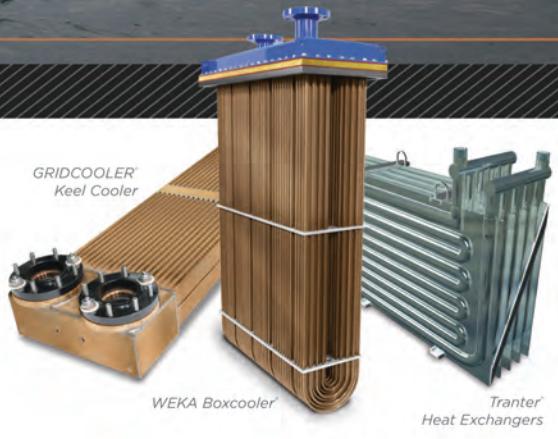

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