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

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Marine News

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Domestic Dredging
The Ultimate Workboat Mission

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3D Modeling Pays Off

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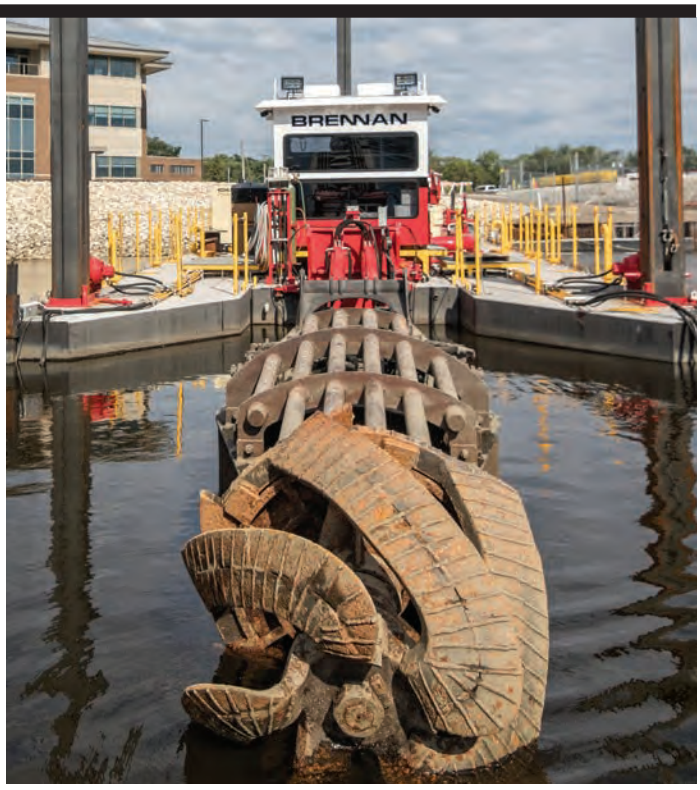

Features

ON THE COVER

Last March, Weeks Marine began work on a Louisiana coastal restoration project with its hydraulic cutter-suction dredge E.W. Ellefsen. The nation's waterways need more dredging equipment to keep up with current demands.

(Photo: courtesy Weeks Marine)

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Choosing the right fire protection for your vessels is nothing to toy with

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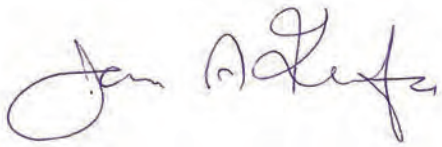
The New Year brings plenty of news to the domestic waterfront; much of that centered around federal organizations – like, for example, the U.S. Army Corps of Engineers (USACE) and the U.S. Coast Guard. Continuing that thread, it was WCI President & CEO Mike Toohey who said not too long ago, "Some things are worth the wait and this is certainly true for the FY '16 Omnibus Appropriations agreement that provides record-level funding for the Corps' Civil Works mission." If so, then domestic waterway users have much to be thankful for, especially as the Panama Canal expansion project inches toward completion. Separately, one U.S. port after another trumpets the arrival of "the biggest ship" ever to cross their respective bars. All of that means "dredging."

On the other hand, years of benign neglect that preceded this high water appropriation have created another set of problems. Sure, the inland towing industry last year stepped up to help pay for needed maintenance and it looks like the USCAE will see funding that will arguably allow it adequately carry out its many missions. But, years of inconsistent funding leave the domestic dredging scene in a position where there simply isn't enough commercial equipment to get the job done when the volume presents itself. That's not my opinion – that's industry telling it like it is.

I'm told that a new dredge of any considerable size can come with a price tag north of $100 million. No one wants to make that investment unless they know that CapEx is going to translate into a fatter bottom line. In this edition, Susan Buchanan's look at the domestic dredging situation – in particular that which is happening in and around Southwest Pass in Louisiana – is a fascinating story of the many variables that come into play. Her analysis starts on page 32.

Meanwhile and back inside the Beltway, the U.S. Coast Guard's plate is also full; seemingly once more 'doing more with less' and attacking a mission set that's as wide as the gulf – locally, nationally and globally – between a final rule on ballast water treatment that everyone can agree upon. To that end, we asked Rear Adm. Paul Thomas, the Coast Guard's Assistant Commandant for Prevention Policy to give us a glimpse of what is to come next from his shop. And, while he wasn't able to answer every question that we might have posed, within these pages, he aptly leads us through what's lurking over the distant horizon, as well as those challenges presenting with a steady bearing and a rapidly closing distance.

Clearly, there is much happening on the federal level in 2016 and all of it will eventually impact a business climate that already has operators and vendors alike sharpening their pencils to make every dollar go just a little further. Waterfront stakeholders must therefore navigate infrastructure issues, the regulatory hammer and, of course, the need to make a buck in a highly competitive and rapidly evolving marketplace. That sounds like business as usual to me.



Joseph Keefe, Editor, keefe@marinelink.com

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The U.S. Waterway System – *and Dredging*

In the fascinating, yet somewhat obscure world of dredging, there are two "go to" sources for data related to this marine discipline. In the United States, the U.S. Army Corps of Engineers (USACE) maintain a commendable list of statistics related to domestic markets. For international numbers, the clear choice for information comes from the International Association of Dredging companies' (IADC) annual report, entitled, *"Dredging in Figures."* Although the latter source focuses on the global dredging and maritime construction industry in the previous calendar year (both USACE and IADC figure typically lag at least one year), the perspective of what goes on across the pond can be useful here at home, as well. Interestingly, while IADC is a treasure trove of data, it also espouses four sacred tenets of the dredging; namely *Corporate Social Responsibility, Sustainability, Emissions Control and Safety*. These efforts extend to such things as dredging company attention to in-house safety programs, employee education, the use of biodegradable lubricants, reducing carbon emissions and recycling policies for controlled and monitored ship dismantling – just to name a few. IADC also asks: **What Drives Dredging?** In fact, there are six drivers that account for the vast majority of global dredging:

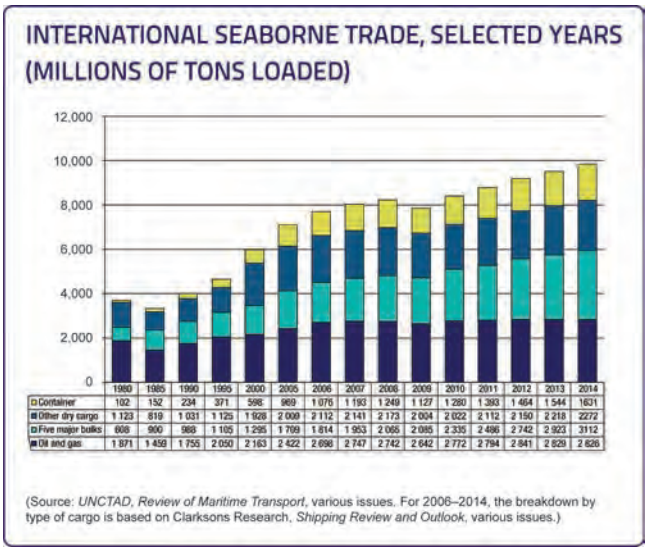
world trade	coastal protection	water-related tourism
population growth	growing demands for energy	the environment

Annual Domestic Waterborne Traffic Distribution at a glance ... (source: USACE)

Domestic Traffic	Coastal	Great Lakes	Inland	Total
Short tons (millions)	172.0	87.9	599.4	937.1
Ton-miles (billions)	172.5	49.5	281.3	504.6
Average Haul (miles)	1,002.9	563.3	469.3	538.4

IADC says that seaborne trade accounts for the bulk of world trade, hence the expansion and building of new ports cannot be underestimated. The Panama Canal Expansion will double the waterway's capacity. Existing locks allow passage of 5,000 twenty-foot equivalent unit (TEU) vessels. After the expansion, vessels will be able to transit the Canal with up to 13,000 TEUs. Separately, Containerships are also getting larger. In 2014, boxships with over 19,000 TEU capacities were added to global fleets. All of this requires dredging, which in 2014 produced a global total turnover of dredging contractors, private and state- or port-owned companies in open markets of €6.415 billion, an increase of 0.7% compared to 2013 turnover. IADC notes that the share of markets closed to international players is substantial, with China leading followed by the US. Only a few Chinese projects are open for international tenders. The US market remains closed to foreign competition by the Jones Act.

Closer to home, the U.S. inland system of waterways depends on the USACE to not only dredge, but also to maintain a vast labyrinth of locks, chambers and dams. Waterways are operated by the Corps as multi-purpose, multi-objective projects. They not only serve commercial navigation, but in many cases also provide hydropower, flood protection, municipal water supply, agricultural irrigation, recreation, and regional development.



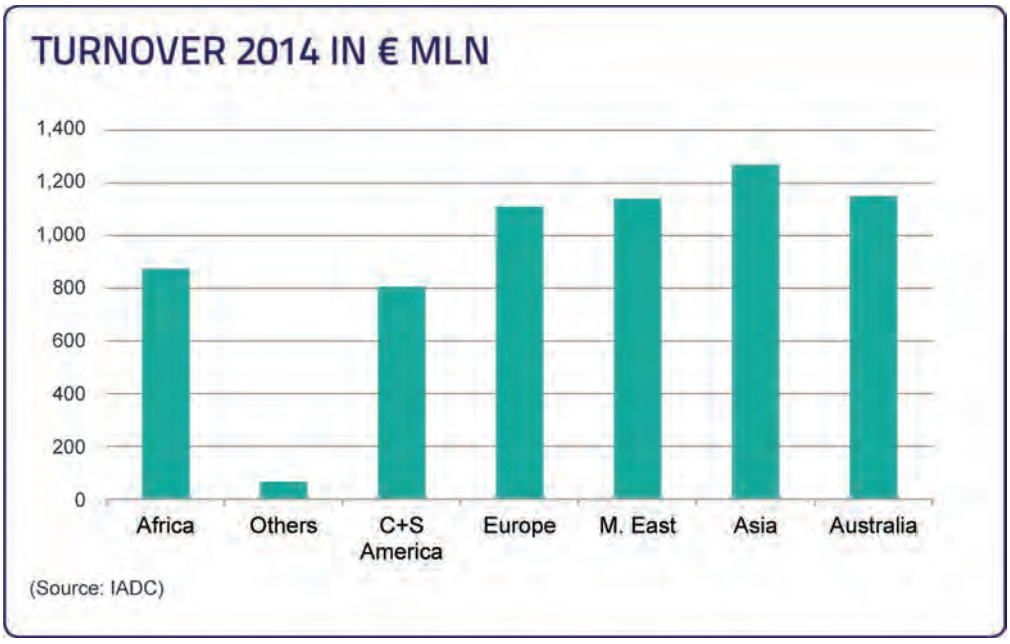
(Source: *UNCTAD, Review of Maritime Transport*, various issues. For 2006–2014, the breakdown by type of cargo is based on Clarksons Research, *Shipping Review and Outlook*, various issues.)

By any yardstick the USACE does an admirable job; especially considering the paucity of resources and funds allotted to their mission. The dredging statistics, supported by trust fund facts and other fun facts, add up to a daunting responsibility. Doing more, usually with less (much like their cousins in the U.S. Coast Guard), and *By the Numbers*, it looks something like this:

The Latest USACE Waterborne Commerce Facts at a glance ...

5.33: avg. cost ($)/cy of maintenance dredging	**5**: Top '14 U.S. traffic ports (LA, NY/NJ, Long Beach, Houston, Savannah)
11: age of youngest lock (Montgomery Pt)	**8.68**: value of the Harbor Maintenance Trust Fund in FY 15 in billions ($)
39: number of multi-chambered locks	**34.1**: million cubic yds of dredging contacts awards (New Orleans Dist.)
40.89: average cost ($)/cy for new dredging	**40.6**: millions short tons of coal exported from Hampton Roads (-15.7%)
46: lock-associated dams producing hydropower	**55**: Number private dredging firms receiving dredging awards, FY14
113: highest lift (feet) (John Day, Columbia River)	**68.5**: millions of dollars disbursed by IWTF projects in FY 15
126.1: Millions of tons on GIWW in 2014	**83**: Pct. of material dredged (154.5 mcy) by private contractors in FY14
193: total number of (lock/chamber/dam) sites	**97.89**: millions of dollars paid into IWTF by inland towing in FY 15
239: total number of lock chambers	**97.9**: millions of dollars earned by Inland Waterways Trust Fund in FY 15
1873: the year Willamette Falls locks (oldest) built	**185.9**: (mcy) Corps & contractor dredges handled in FY14
3,772: number DH tank barges (+ 244 from 2013)	**266.1**: millions of dollars in dredging contracts awarded by Phila. District
6,791: combined lift (in feet) of all Corps locks	**267.4**: million tons cargo through Port of South Louisiana (+12.1%)
12,000: miles, US inland & intracoastal waterways	**461**: number of deep draft dry cargo barges (up from 448) in 2014
71,000: number barges through OH River Lock 52	**18,624**: number vessels passing through youngest lock (11 yrs)
84,000,000: tons shipped on those 71,000 barges	**30,764**: number US flag boats in Miss. River &Gulf Intracoastal Waters
91,192,537: tons through youngest lock (11 yrs)	**40,082**: Number US flag passenger and cargo vessels on 12/31/14

Source: USACE / mcy = millions of cubic yards



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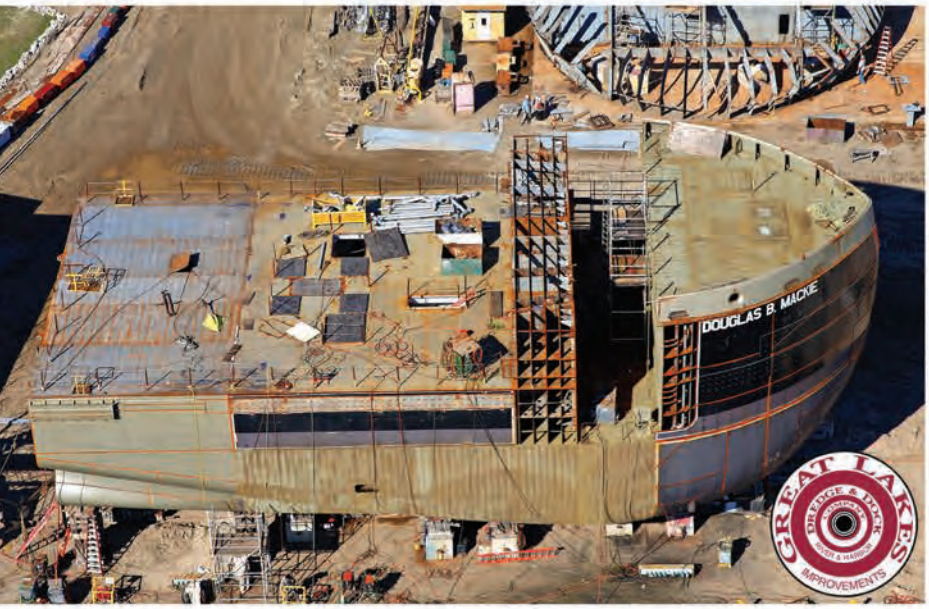

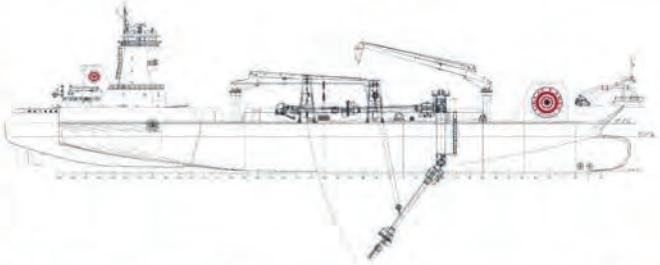

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Owner & CEO,
Cenac Towing Company

Arlen "Benny" Cenac Jr. is a third-generation owner of Cenac Towing Company. The firm, originally founded in 1927 by his grandfather, now does business as Cenac Marine Services. Benny has led the company since 1981 through several industry downturns by focusing on customer service, efficiency, quality and safety in its marine transportation services. Cenac Towing has clients across the country and maintains a focus on transporting liquid petroleum barges. Cenac is guided by the values and principles established by Benny's grandfather over 85 years ago: a commitment to employee satisfaction and great company morale. As a leader in the community, Benny has served on several boards and committees, including Nicholls State University College of Business Advisory Board, Nicholls State University Foundation and Restore or Retreat. Benny is also a member of Waterways Operators, South Central Industrial Association, Bayou Community Foundation and Greater New Orleans Foundation. Beyond this, he is also a devoted philanthropist, donating both his time and money to dozens of regional, national and international causes. He is particularly fond of his involvement with the Coalition to Restore Coastal Louisiana. Over time, Cenac led the marine industry with many 'firsts.' These include being the first to institute the U.S. Coast Guard tank barge self inspection program, and with Coast Guard's approval, the first to institute its own tankerman training program. As part of Conoco's Magnolia project, they were the first company to moor a liquid petroleum barge to a dynamic positioning drilling rig in the Gulf. Today, Cenac's maintenance program is built on a strict model of standardization and managed by top rated, experienced in-house technicians. Located in a state of the art facility at mile marker 58 on the intercoastal waterway, Cenac Marine Services is a fully self sustaining entity strategically located to service the Gulf Coast. There, Cenac supplies classrooms and crew housing, ensuring that Cenac's crews have the supplies, training and rest required to arrive at the job site prepared and ready to work. With the purchase of Main Iron Works, Cenac Marine Services now has the ability to build its own boats and make all of its own barge and boat repairs. Under Benny's guiding hand, Cenac constantly pushes the towing industry forward by leveraging new technological advances, including Z-drive technology. As an avid philanthropist in the Gulf Coast region and strong supporter of coastal wetland restoration, Cenac is a most appropriate choice for this month's INSIGHTS. Listen in as this veteran industry leader shares his unique take on the industry with *MarineNews*.

Cenac Towing's acquisition of Main Iron Works (MIW) is noteworthy in that it marries an experienced, well-regarded shipyard to an established transportation leader. What was the thought process behind the move?

MIW has built the majority of the Cenac fleet. My mother's father started MIW and built the majority share of Interstate Transportation's fleet, Dixie Carrier's fleet, and Harvey Gulf's fleet, and most of those boats are still in operation today. We have always been a company that believes in internal repairs and construction of our fleet, so this acquisition was the perfect fit for our company's overall goals.

With the addition of MIW to the Cenac portfolio, Cenac joins a number of other companies who own and operate their own tonnage but also can build from within at their own yards. Does this allow for less expensive tonnage, better logistics of getting what you want, when you want it, or is it a combination of both metrics?

For Cenac, it's not a question of less expensive tonnage, but the internal controls of the equipment and being able to assure our customers, construction staff and repair staff that jobs are completed in a professional and timely manner.

The new 2000 Hp Twin Screw Conventional Tug – the Jean Pierre Cenac – is a notable addition to the Cenac fleet. Will it replace an existing hull, or will it augment your already robust pushboat fleet?

The Jean Pierre is new horsepower added to the fleet in order match additional power already in service. We have been very fortunate to build barges faster than we have been able to build horsepower. This has allowed Cenac to have the newest, most cutting-edge fleet in the industry. The Jean Pierre Cenac is a 72'x30', Tier 3 compliant innovative push boat, named after my great-great grandfather. Jean Pierre Cenac was a French immigrant, oyster fisherman and first person in the family to build a business on the water.

Adding to a fleet during an industry downturn shows intestinal fortitude, but also confidence in what will come next. That said; can you share with us your long and short-term vision for the oil markets, inland transportation and where Cenac fits into that equation?

Our short-term goal has been to build out our fleet to have enough boats for our large amount of barges. This way, we will be ahead of the game when the industry gets back on track. For the long term, we believe the quality and newness of our fleet as well as the expertise of our people will guide us through an industry slowdown, ensuring Cenac will always have a place in the industry.

The new tug – is it chartered out long term or will it position for cargoes of opportunity?

It will go directly on a long-term job with two 30,000-tank barges.

Your third-generation-owned company attributes its continued success to "innovation, quality service and culture." Flesh that out for us a little bit.

We contribute our continued success to having top-notch service and employee-friendly equipment with fewer emissions. To us, innovation also means easier maintenance for both crew and land-based staff in order for our employees to concentrate on serving the customer to the best of their ability. To us, quality service means being at the right place at the right time for our customers, and developing great communication services between our vessels, customers and docks. This coupled with an employee-training program that empowers our workers to do their best every day, directly contributes to our success. We truly believe in operating this company as my father and his father before him did – as a family. It's my duty to ensure everyone is well taken care of, and working as a team to make this company the best it can be. And as any family does in South Louisiana, we get together for special occasions and holidays, celebrating with food, fun and music.

Tell us about the 'unique familial culture that is experienced not only by employees but also by customers and partners.' It sounds good – but what does that mean in everyday business practice?

It's our goal to satisfy our customers through providing our unique expertise to help them to develop a safer, more efficient and profitable practice. For example, we often partner with all the safety and vetting divisions of all major oil and gas producers to assure we are current and up-to-date with all safety requirements such as, SIRE, AWO SMS, ABS, and more. Because we have built such a strong relationship with our customers, we do almost think of them as family and continue to partner with them on a variety of projects, even going beyond just maritime transportation.

The acquisition of Main Iron Works, which was finalized in July of 2015, will expand Cenac Towing's industry position. With plans to continue to operate Main Iron Works as an independent entity under the Cenac Group umbrella, does this mean MIW will continue to build for other operators and entities?

Following the acquisition, Cenac Towing plans to continue to operate Main Iron Works as an independent entity under the Cenac Group umbrella, growing its' construction of world-class, innovative tugboats and push boats to companies nationwide. We do plan to continue building for both outside and in-house needs. Main Iron Works has several long-term customer relationships, which we have maintained. One of these customers is Bisso Marine, which we are currently building a new tractor tug for now.

Houma, Louisiana-based Cenac Towing Company, founded in 1927, operates approximately 40 boats, 70 barges and has 400 employees. Where do you see those numbers in five years? Ten? What's the long term strategy?

With the addition of The Jean Pierre Cenac, we can now say that we have the newest most innovative fleet in the industry. Moving forward, we will focus on remaining the safest and most efficient operator on the water. Ultimately, our mentality is that "bigger is not better." Instead, we focus on well-trained employees, top-of-the-line equipment and a solid operation.

The Designated Person Ashore and You

Don't overlook this important part of your regulatory compliance chain.

By (Captain) Katharine Sweeney

Sweeney

As the workboat industry marches toward Subchapter M, and ever closer to the International Safety Management (ISM) Code, the appointment of a Designated Person Ashore (DPA) becomes more important, the position's job functions become more defined, and the selection of the right individual becomes more critical.

Defining the DPA

The DPA can be a very important "pressure relief valve" that keeps emerging ethical and safety related concerns from exploding into litigation. The DPA allows anyone working on board a vessel to report perceived unethical behavior or unsafe conditions (including the safety of the crew, vessel, or environment). The DPA requirement is another mechanism, such as the "all stop" policy, which enables employees to internally act on their concerns.

The DPA is a cornerstone of the ISM code. The code requires among other things for DPA to have knowledge of the subject matter and direct access to top-level management, and a position outside the normal chain of command. The DPA also needs access to resources (be it time, money, or personnel) and the ability to affect change to the safety management system (SMS). In addition to the ISM code, the most recent revision of the American Waterway Operators (AWO) Responsible Carrier Program (RCP) includes even more requirements relating to the DPA.

The crew on board, as well as everyone ashore associated with the management of the vessels and the SMS, must be able to identify the DPA and know how and when to contact them. The DPA should have a documentation system in place to record these concerns brought forward and how they were dealt with. In addition, your SMS must designate the minimum training and qualification requirements for the DPA position.

The DPA in Action

Some may see a call to the DPA as whistleblowing; a loaded term. However, a recent *Wall Street Journal* article indicated whistleblowers are good for companies overall, and often whistleblowers have the company's best interests in mind. This may be hard to accept, given that the press reports whistleblowers get 25% of the fines invoked for MARPOL violations. Maybe the WSJ did not consult with the maritime industry on this one, but I believe, overall, employees do not want to see the company they work for and their own jobs put at risk.

In any case, your company needs a system that allows for free flow of internal communications to avoid the likelihood those employees will feel the need to notify authorities if they perceive a problem. Contacting the DPA is not whistleblowing. It is using the system as it was designed to resolve issues early. Notifying the DPA should be encouraged, as it protects the company from potentially serious problems. Your company may already have an ethics or human relations hotline for employees to contact if they believe they are witnessing unethical practices or mistreatment. The DPA is another, more vessel specific, avenue for your employees.

A while back, while I was conducting an internal ISM audit, the vessel's master voiced his concern about his company's actions following the injury of a crewmember. The crewmember slipped and sprained an ankle after missing a step. He had come off the deck on a very bright, tropical day and his transition lenses did not adjust quickly enough to see the step. The company kept the crewmember on board for a short period, and then put him to work in the office to avoid a Lost Time Injury against the vessel's record. Contacting the DPA and discussing the matter would have been an excellent means to address this master's dissatisfaction and could have potentially resolved the issue before the master felt compelled to bring it to the attention of an internal auditor.

I was on board another vessel recently which had a series of unfortunate events leading to cargo loss and a violation of MARPOL. Although not intentional, material ended up in a marine sanctuary. One of the links in the error chain was a very short port stay. If the master or crew had realized that the DPA was a resource, perhaps one of them would have alerted the DPA to the difficulty of managing

rest hours. The point of this sea story isn't to lay blame based on 20/20 hindsight; rather it's an example of when the DPA might be contacted. Perhaps contacting the DPA, who may or may not have arranged for a longer port stay, wouldn't have prevented the cargo loss, but at least the company would have been aware of the vessel personnel's concern prior to the loss occurring. And, what is most important about this story is the understanding that contacting the DPA is only an available option if the master and crew know the option exists.

Some may be concerned that a call to a DPA is a crewmember going around the master. While the chain of command is very important at sea, there can be no blocked valves in your system. Concerns of crew members at all levels must be freely shared, not stifled. Sometimes the master's relationship with the crew is the issue itself. Or, perhaps the crewmember has tried to resolve issues through the chain of command, to no avail. Arguably, it is then far better for the DPA to be able to resolve issues, early on.

The Right DPA for the Job

Choosing the right person with the right mix of personality and communication skills to serve as the DPA is paramount. This person is tasked with crucial job responsibilities that could expose your company to great risk if mishandled. The DPA can be a key individual both in preventing litigation and when litigation is underway. Originally the title of DPA was simply Designated Person (DP) and some companies used their vessel masters as the DP. The code was then revised to Designated Person Ashore. Clearly, it is difficult for the master to access top-level management, and to meet the other requirements, including being outside of the chain of command. It is also true that it's increasingly hard for smaller companies to ensure the DPA's job responsibilities are outside of the chain of command. However, this is not just another hat that this person (the DPA) is going to wear; rather, it's the main hat they will wear.

The port captain, port engineer, vessel superintendents, and the vessel's other main conduits to shore side operations, including anyone responsible for approval of repairs, make for poor DPA choices. Instead, select someone with strong communications with the vessel crews so that crewmembers feel confident and safe contacting the DPA – someone who will maintain constant and routine dialog with the crews so the individual is recognized as the DPA. Beyond this, Auditors are very keen to look at the company's organization chart, to see that the position of DPA is included, to whom the position reports to, and if the DPA has any solid or dotted lines to upper level management.

Compliance Maritime

Captain Katharine Sweeney *is CEO of Compliance Maritime, provider of independent internal auditing of security, safety, quality and environmental management systems for vessel operators. Captain Sweeney is an experienced Master Mariner, safety expert and federally licensed pilot with over 25 years in the Maritime Industry. Contact her at ks@compliancemaritime.com*

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By Larry DeMarcay

DeMarcay

Vessel operations require a large network of companies that come together to keep the entire business chain – including yours – running smoothly. Keeping the lights on and the boats running requires agreements with banks, investors, shipbuilders, component manufacturers, designers, technical specialists, repairmen, suppliers, agents and countless other entities. Many of these agreements involve relationships that have developed over time during differing market conditions.

Unfortunately, a large portion of our industry is dependent on the exploration and production of oil and gas, and the services related to it. As this column is written, the price of crude oil is hovering at just above $30.00 per barrel with a twelve month forecast (depending on who you believe) of $35 per barrel, down from $110.00 per barrel just over a year ago. As a result of these depressed oil prices, oil and gas exploration has slowed down drastically and producers, when they can, are restricting the production of their wells. There are very few businesses that operate in this environment that have not been impacted one extent or another. As a direct result, many of these symbiotic relationships are beginning to sour and many transactions are being cancelled or defaulted on.

Left in the Lurch?

No one wants to be left in the lurch when an entity that you have an agreement with can no longer perform its obligations. Although you can't guarantee that another person or entity will honor their commitment, you can use an obscure provision in the Uniform Commercial Code to minimize your exposure by stopping the losses before they fully accrue.

If you begin to have some concern that a contracting entity may have difficulty performing, or paying you for your performance, you can manage this exposure by sending the other entity a Demand for Assurance pursuant to the Uniform Commercial Code ("UCC"). UCC Section 2-609 provides you with a "Right to Adequate Assurance of Performance." Although not all states have adopted the Uniform Commercial Code, most have. For the states that have adopted this section of the Code, the requirements for demanding assurance are included in Section 2-609. The statute provides:

1. *A contract for sale imposes an obligation on each party that the other's expectation of receiving due performance will not be impaired. When reasonable grounds for insecurity arise with respect to the performance of either party the other may in writing demand adequate assurance of due performance and until he receives such assurance may if commercially reasonable suspend any performance for which he has not already received the agreed return.*
2. *Between merchants the reasonableness of grounds for insecurity and the adequacy of any assurance offered shall be determined according to commercial standards.*
3. *Acceptance of any improper delivery or payment does not prejudice the aggrieved party's right to demand adequate assurance of future performance.*
4. *After receipt of a justified demand failure to provide within a reasonable time not exceeding thirty days such assurance of due performance as is adequate under the circumstances of the particular case is a repudiation of the contract.*

Essentially, if you become concerned that a company that you have an agreement with will be unable to perform its obligations in the future, this provision allows you to demand that they provide you with assurance that they can complete your transaction. If the company cannot provide adequate assurance that they can pay for your services or provide the materials or services agreed to in your contract, you have the right to terminate the contract before the other party defaults. Using this assurance provision proactively can keep you from sustaining additional losses in the event of a default.

The UCC in Action

By means of an example, let's look at a fuel distributor who provides products to certain customer pursuant to a credit agreement. Although the commercial relationship continues to proceed in a customary fashion, you receive news that one of your customers is having financial trouble and may have trouble paying its bills in the near future. If you are concerned that they may ultimately not be able to pay you for the fuel that they purchase on credit, you can use the adequate assurance provision included in Section 2-609 to demand assurance that they have the ability to pay you for the fuel before you provide additional credit.

If the customer is unable, or unwilling, to provide some reasonable assurance that they can pay you for your fuel, you have the ability to terminate the agreement prior to the customer defaulting on your agreement.

Any assurance provided by the customer must be commercially reasonable and will depend upon your particular situation. In this example, the customer could provide assurance by providing you financial information or putting up some additional money or collateral as security. The ability to make a demand for assurance works for both sides of an agreement. Additional examples when a demand for assurance could be used include:

- ***A ship owner demanding assurance from a shipyard that a vessel will be completed;***
- ***Any company that is concerned that another company will be unable to deliver a good or service in the future; or***
- ***Any situation where you are providing goods or services on credit and you have concerns about the customer's ability to pay.***

The UCC Primer

Making a demand for assurance is easy. The demand can be made by sending a simple letter to your customer.

Although the letter can take any form, we suggest beginning with a short introductory paragraph identifying the goods and services that are specified in your agreement and a short explanation of why you have concerns about their ability to pay for or provide these goods or services pursuant to the agreement. The second paragraph should state that you have become aware of a certain event, or issue, that constitutes reasonable grounds for insecurity under UCC Section 2-609, or your corresponding state law. The next paragraph should demand that the vendor provide you adequate assurance that they can complete their performance under the agreement. The letter should conclude by stating that, unless you receive the adequate assurance by a certain date, that you will regard the agreement between the parties as being breached by the other party. Although the UCC does not set a time period for responding to a demand for assurance, you should select a commercially reasonable deadline that is less than 30 days away from service of the demand.

Depending upon the circumstances, the adequate assurance could be as simple as a letter explaining a prior delivery problem or as complicated as the provision of financial statements or a credit agreement proving that they will be able to deliver on the agreement.

In the event that the party does not provide adequate assurance, and you still believe you have a reasonable basis for insecurity, you can then move forward with the termination of the agreement citing the lack of adequate assurance as the reason. This early termination of an agreement will allow you to 'stop the bleeding' before a situation goes from bad to worse. Using our fuel example, it is much better to cancel the credit agreement early than to get stuck with an uncollectable credit balance.

Although no one likes being put in a position to write such a letter, in any rapidly deteriorating market, it is important to take these types of precautions to make sure that you are not stuck in a situation where your company incurs significant losses because of another company's failure to perform. Courtesy of this UCC provision, you are not required to wait until you suffer significant losses before cancelling the contract. Using this statute, you can try to jump off the other ship before it sinks. You may get a little wet. But, you will continue on to sail another day.

FOWLER RODRIGUEZ VALDES-FAULI Counselors at Law

Mr. DeMarcay *is a partner in the law firm of Fowler Rodriguez Valdes-Fauli. His areas of practice include Commercial Litigation, Admiralty, Personal Injury, Transportation, Real Estate, Construction and Corporate Law. Prior to attending law school, Mr. DeMarcay served on the Washington based legislative staff of Congressman Jimmy Hayes. On the WEB:* ***www.frvf-law.com***

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Commander, NAVSEA (Invited)

VADM Paul Grosklags, USN
Commander, NAVAIR (Invited)

VADM Jan Tighe, USN
Commander, Fleet Cyber Command (Confirmed)

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AIWA Highlights Investment Needs on the Nation's Marine Highways

Nowhere is that more important than on the Atlantic Intracoastal Waterway.

By Brad Pickel, Executive Director, Atlantic Intracoastal Waterway Association

Pickel

As 2016 begins, we at the Atlantic Intracoastal Waterway Association (AIWA) are looking forward to participating in the ongoing dialogue regarding the need for strategic investments in the Nation's Marine Transportation System. Our organization advocates for the ongoing maintenance of one of the nation's longest water infrastructure projects, the Atlantic Intracoastal Waterway (AIWW). Although the waterway has received funding for the past few years, we know that more is needed for this vital transportation route. The AIWW serves a number of commercial, governmental and recreational organizations over its' collective 1,100 mile length. Whether it's a small town fishing village or a large-scale corporation, the AIWW provides safe transportation to all users all along the eastern seaboard. Today, we see a number of opportunities and threats facing the AIWW.

Similar to many other federal projects, we face a lack of consistent and sustainable federal funding to maintain the waterway at its full capability. The AIWW has received incremental increases over the past few years and we are extremely thankful for the effort that has led to those extra dollars. But, we also see an opportunity to invest in the nation's most efficient mode of transportation with lower emissions, lower costs, and a good environmental safety record. As the harbor deepening projects come to fruition and Post-Panamax ships steadily arrive, the nation must maximize all of the transportation avenues that are available.

Just this past November, we were fortunate to have U.S. D.O.T. Maritime Administrator Paul "Chip" Jaenichen participate in our annual meeting. Administrator Jaenichen painted a very clear picture regarding the expected increase in freight movement in the United States by 2040. With an expected increase of over 45% in freight movement, we were left to wonder if existing infrastructure of the multi-modal system could support the anticipated increases. Our view is that our nation has a greater opportunity to manage these increases by investing in the development and maintenance of a reliable national marine transportation system, and more specifically marine highways such as the AIWW (M-95).

Moving forward, federal dollars will continue to be constrained for infrastructure needs, and ongoing maintenance will likely require investments by non-federal partners. On the AIWW, non-federal partners have established dedicated funding sources in Florida and North Carolina to aid in keeping their sections of the waterway open. In 2015, Charleston County, South Carolina provided $500,000 to supplement federal funding for waterway maintenance within the county. We fully believe that it should remain a federal responsibility to maintain the nation's marine transportation system, but there is a willingness to support limited non-federal funding if work can be scheduled and completed in a timely fashion.

In 2016, we are focused on pursuing additional funding for the maintenance of the AIWW, and the completion of Section 2008 of the 2014 Water Resources Reform & Development Act (WRRDA 2014). This section required the Corps to conduct an Assessment of Operations and Maintenance Needs for the AIWW and the Gulf Intracoastal Waterway. Upon completion of this study, everyone will have a roadmap showing the needs of each waterway and the necessary dollars to maintain them. Fortunately, the congressional delegation along the waterway supported this effort and now we hope that it will be included in the upcoming budget proposal. With this information, Congress will see the amount of money needed to maintain the waterway, and non-federal partners will see the amount of funding needed to maintain their section. Through these activities, we will continue to move forward in providing what all of the users of the waterway desire, a well-maintained marine highway 95.

Editor's Note

Marad didn't designate the Atlantic Intracoastal Waterway (AIWW) as the "M-95" marine highway because it sounds nice. Running adjacent and parallel to Interstate Highway 95 for hundreds of miles, the AIWW has the potential to relieve a significant amount of pressure from one of the nation's busiest and most congested freight and passenger car corridors. *But, not if federal funding for maintenance dredging of the AIWW does not keep pace with the needs of the waterway.* Beyond this, the practice of awarding dredging and maintenance funding on the basis of existing tonnage alone greatly under calls the huge potential of this waterway as a powerful intermodal marine highway. – JK.

The Mississippi River and the 2016 Flood's Impact on Dredging

By Sean Duffy


Duffy

The Mighty Mississippi River connects 31 states and 2 Canadian Provinces by a liquid superhighway that includes over 250 tributaries and features more miles of inland waterways than the rest of the world combined. As I contemplate my thoughts on the importance of this great river system, there is no doubt that muddy water also runs through my veins. Nevertheless, much of my advocacy involves explaining to others not so closely in tune with this economic superhighway as to just how important it truly is.

Follow the Money

The Mississippi River is our country's river, a history our heritage and all of that embodies our prosperity. The American farmer remains competitive in world markets because of the cost savings offered by waterborne transportation that connects the over 350 million acres of farm land to world markets. This month, however, *Reuters* reported that not one, but two cargoes of Argentine wheat were scheduled to arrive at Wilmington, North Carolina, indicating a rare situation where U.S. buyers actually found it cheaper to purchase imported grain than abundant domestic supplies. Surely, some of that price advantage stems from cheaper grain from South America. No doubt, the challenged state of U.S. locks, waterways and channels (not dredged to their controlling depths) had something to do with it, as well.

Separately, dismal U.S. per capita investment in infrastructure ranks us globally at 143rd, or about $18 dollars per capita. Well before those numbers became public, however, I attempted to determine why navigation folks apparently did not like dredging contractors and ultimately, my conclusion was that it was all about funding. If the Corps of Engineers was properly funded and dredges were available then our channels would be maintained at fully authorized dimensions and in the end everyone would be happy with fluid commerce.

At the same time, I also came to understand that dredging contractors were businessman too and that investing in a new dredge large enough to work on the nation's deep-draft channels meant investing between $125 to $175 million dollars in one piece of equipment. In order to make such a large investment, the business model must predict a sizeable return on investment. The first real agreement I reached with dredge contractors was that the Harbor Maintenance Tax and related Trust Fund had to be unlocked. The surplus of over $9 billion unaccounted for dollars generated by this ad valorem tax has to be allocated for what it was originally intended for.

A view of the river mouth in 1985

Credit: Big River Coalition

Current Conditions

Today, and as the Mississippi River stage at the Carrollton Gauge (New Orleans) over the last few weeks crested at just over 17 feet, there is a real need for additional dredges to recover the channel. But, even the most passionate stakeholders often misunderstand the hydrology of this great river, For example, a common assumption is that there is more water at flood stage so there is no need to dredge. The one place I know that is not true is in Southwest Pass, the critical entrance to the country's interior from the Gulf of Mexico. Typically, the Corps' Mississippi Valley New Orleans group (MVN) needs to actively dredge in Southwest

Pass when the Carrollton Gauge approaches 10 feet and rising. The Carrollton Gauge has been over 12 feet since December 15, 2015, with a crest of 17.06 feet reported in mid-January, with the stage manipulated by the operation of the Bonnet Carre' Spillway. The Carrollton Gauge is predicted to remain over 14 feet until February 10, 2016.

Also in January, the Bar Pilots who are responsible for moving ships from the Gulf of Mexico to Pilottown were forced to implement a draft reduction of 4 feet to the new maximum draft of 43 feet from 47 feet. The scary part is that much more shoaling occurs when the stage level begins to recede, yet we lost 4 feet of draft before cresting. To make matters worse, the Corps only had one industry hopper dredge working on the channel, with another Government hopper dredge expected to arrive the following week. Nevertheless, recovering this channel after a flood event requires multiple dredges. A previous flood required up to eight hopper dredges to be used simultaneously to restore Southwest Pass.

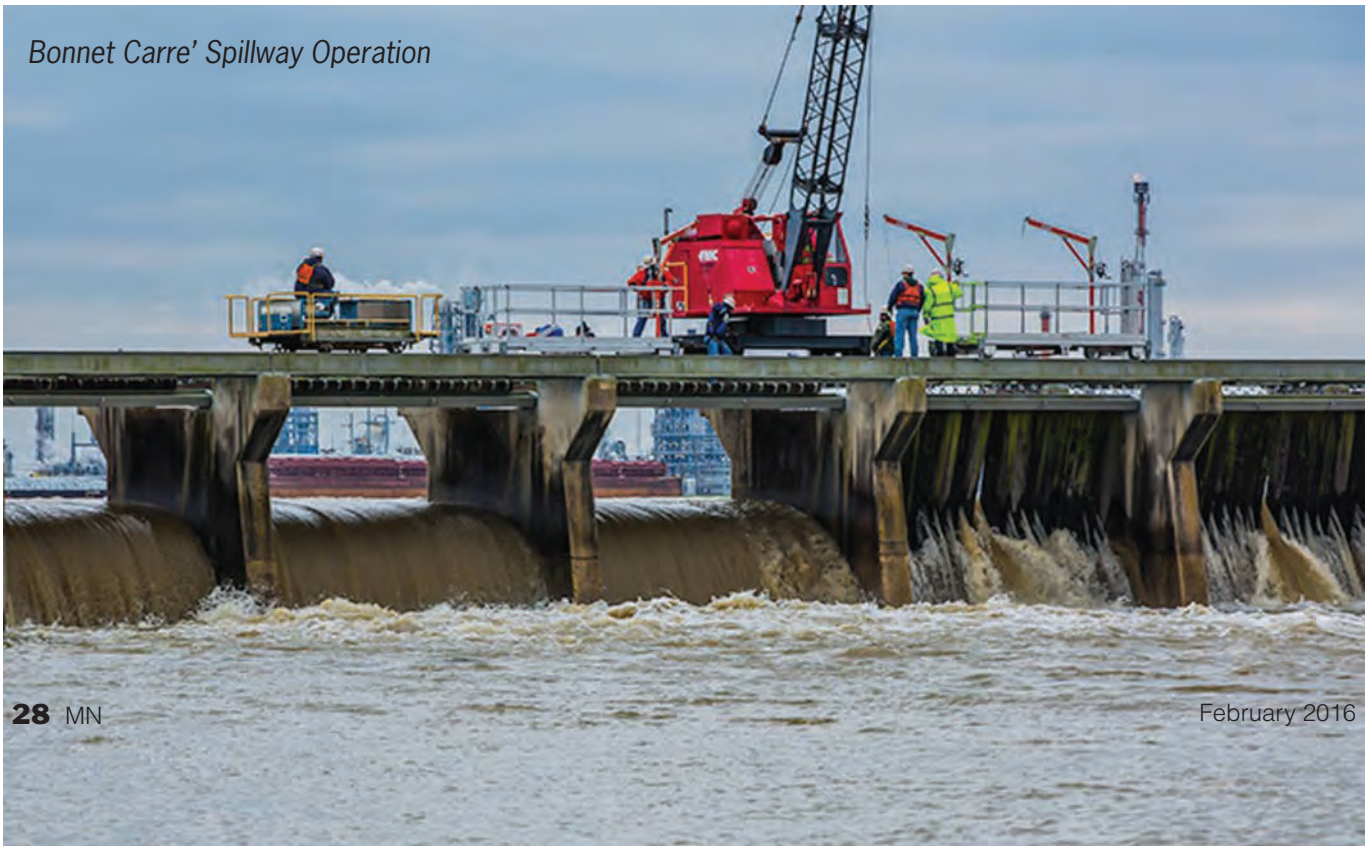
Without a doubt, more shoaling is coming and without additional dredges to respond, more severe draft reductions are likely. Since Hurricane Sandy, however, there have been considerable efforts to recover multiple east coast channels and to rebuild coastal acreage by pumping sediment to synthetically create land. The impact now is that all most if not all available dredges large enough to work on the Mississippi are working on Sandy Restoration or channel deepening projects on the east coast. Together, the Corps of Engineers and their dredging contractors are trying to figure out how to get the job done, keeping Southwest Pass, the revolving door to international trade, open.

If you have never seen what 1.25 million cubic feet per second looks like you are really missing a spectacle. Locally, the reference is that this rate of flow would fill the Super Dome in one second. There are areas of river that have currents of over 15 knots and although there are dozens of navigation restrictions in place, commerce continues to move – for now. Still, every foot of draft lost equates to $1 million in cargo left behind, so for each vessel that had to light load to 43 feet it left behind $4 million in cargo. Eventually, the cargo will get moved, but those higher costs are passed on to the consumer. Unless, of course, someone decides to import more wheat from South America.

Even at 1.25 million cubic feet per second, Southwest Pass remains in crisis. That's because, as the water goes, the mud and dirt stays.

As the Corps of Engineers once again tries to solve the crisis, funding is no longer (at least for now) the problem. More equipment and dredges are needed. They will come, but only if stable and adequate funding is consistently available; year in and year out. This year's USACE budget is a start.

Sean Duffy *is the Executive Director of the Big River Coalition.*



Bonnet Carre' Spillway Operation

Marine News 2016 EDITORIAL CALENDAR

JANUARY
Ad Close: Dec 14

Passenger Vessels & Ferries
MARKET: Training & Education
TECHNICAL: Thrusters & Inland Propulsion
PRODUCT: Interior Design, Outfitting & HVAC
REGIONAL FOCUS: U.S. West Coast

PVA Maritrends: January 22-26, Washington, DC

FEBRUARY
Ad Close: Jan 15

Dredging & Marine Construction
MARKET: U.S. Coast Guard
TECHNICAL: Naval Architecture
PRODUCT: Fire & Safety Equipment

ASNE Day: March 2-3 Arlington, VA
Inland Rivers, Ports & Terminals: Mar 1-3, St. Louis, MO

MARCH
Ad Close: Feb 15

Pushboats, Tugs & Assist Vessels
MARKET: Fleet Optimization & Navigation Software
TECHNICAL: Marine Coatings/Corrosion Control
PRODUCT: Water Treatment & Technology
REGIONAL FOCUS: U.S. East Coast

CMA Shipping 2016: March 21-23 Stamford, CT
Port Security Operations: March 17-19, Tampa, FL
NACE Corrosion: March 6-10, Vancouver

APRIL
Ad Close: Mar 14

Boatbuilding: Construction & Repair
MARKET: Marine Cranes & Deck Machinery
TECHNICAL: Communication Technology for Workboats
PRODUCT: Electronics & Navigation Equipment

Workboat Maintenance: April 12-14, New Orleans, LA

MAY
Ad Close: Apr 15

Inland Waterways
MARKET: Barge Building & Outfitting
TECHNICAL: OSV & Offshore Vessel Trends
PRODUCT: Cordage, Wire Ropes & Rigging
REGIONAL FOCUS: Inland Waterways

Inland Marine Expo: May 10-12, St. Louis, MO

JUNE
Ad Close: May 13

Combat & Patrol Craft Annual
MARKET: Shortsea Shipping Solutions
TECHNICAL: Lubricants, Fuels & Additives
PRODUCT: Oil Pollution Prevention & Response

SeaWork: June 14-16, Southampton, UK

JULY
Ad Close: Jun 13

Propulsion Technology
MARKET: ATB's
TECHNICAL: Safety & Fire Protection
PRODUCT: Shafts, Seals & Bearings

AUGUST
Ad Close: Jul 15

MN100 Market Leaders
APPLY AT: http://mn100.maritimemagazine.com

MARKET: Workboat Boatbuilding & Repair
TECHNICAL: Marine Operators
PRODUCT: Marine Diesel Engines & Gensets

SEPTEMBER
Ad Close: Aug 15

Offshore Annual
MARKET: Barge Loading & Offloading Equipment
Technical: Push Boats & Barges
Product: Winches, Ropes & Cranes

OCTOBER
Ad Close: Sep 13

Salvage & Spill Response
MARKET: Market: Special Purpose Workboats
TECHNICAL: Arctic / Cold Weather Operations
PRODUCT: CADCAM Software

SNAME: November 2-4, Providence, RI
Arctic Technology Conference: October 24-26, St. John's
Clean Gulf: November,New Orleans, LA

NOVEMBER
Ad Close:Oct 14

Workboat Annual
MARKET: Outfitting the Modern Workboat
TECHNICAL: Pumps, Pipes & Valves
PRODUCT: Deck Machinery/Cargo Equipment
REGIONAL FOCUS: Gulf Coast

Workboat Show: Nov 30 – Dec 2, New Orleans, LA

DECEMBER
Ad Close:Nov 14

Innovative Boats of 2016
MARKET: Fire, Patrol & Escort Craft
TECHNICAL: Emissions Control / Compliance
PRODUCT: Pumps, Pipes & Valves

*may be subject to change

Weighing in on Maritime Industry Challenges

A look ahead to 2016 by the U.S. Coast Guard's Assistant Commandant for Prevention Policy.

By Rear Adm. Paul Thomas

Thomas

Every January provides a fresh opportunity to reflect on the previous year's successes and look toward the year ahead. In 2016, I look forward to addressing the primary challenges that I see facing our nation's maritime industry, which are: the growing demands on the marine transportation system, the need to reduce shipping's environmental footprint, and the ever-increasing complexity of systems and technology.

Through consultation with my senior staff, federal advisory committee members and industry associations, it has become clear that these enduring challenges will continue to affect all segments of the maritime industry for years to come. Based on these challenges, the following provides an overview of the priorities my staff and I have outlined for 2016:

Environmental Regulation and Compliance

For decades to come, reducing the environmental footprint of the Marine Transportation System, or MTS, will remain the focus of domestic and international regulators, non-governmental organizations, and maritime industry stakeholders. The Coast Guard is involved in setting and consistently enforcing existing standards to remove the economic incentive of non-compliance. It is vital for us to ensure a level playing field that facilitates the achievement of national environmental goals. In 2016, you can expect the Coast Guard to remain focused on MARPOL Annex I enforcement, as we have for the past decade and more. We will export our training for Annex I enforcement to several nations looking to strengthen enforcement of this international pollution prevention standard. We will continue to refine our enforcement procedures for MARPOL Annex VI as well, including the introduction of fuel oil sampling protocols for assessing the integrity of Bunker Delivery Notes, and compliance guidance for vessels employing exhaust gas scrubbers as the means of meeting the Annex VI sulphur-emission standards.

Ballast water treatment systems will also continue to be an area of focus. This year we expect a number of manufacturers to submit data to support U.S. Type Approval. We will continue to work with the International Maritime Organization (IMO) to refine the G8 Type Approval Guidelines so most alternate management systems can achieve U.S. Type approval. Lastly, we expect to refine our policy on compliance procedures for the ballast water management system regulations.

Energy Production and Transportation

Despite the downturn in the price of crude oil, maritime production and transportation of energy will remain a focal point for the Coast Guard. We recognize that the crude oil price cycle will reverse and are taking action to ensure we meet future demands. This includes refining the way we work with third parties who conduct inspections on behalf of the Coast Guard, modernizing Coast Guard human capital management processes in terms of recruitment, retention, training and assignment of marine inspectors, and investing in enterprise systems that support our marine safety mission. At the same time, we will address the regulations governing offshore energy exploration and production so we remain current with the technologies and marine practices. In 2016, you can expect continued tight strategic and tactical coordination with the Bureau of Safety and Environmental Compliance on regulations and field operations on the Outer Continental Shelf (OCS). We will continue work on regulations that require Safety Management Systems (SMS), for vessels working on the OCS in a manner that compliments, but does not conflict with or duplicate, existing international and BSEE's Safety and Environmental Management System requirements. Our 2015 inspection and casualty data confirms the need for development, deployment and oversight of SMS as a means of managing ever-increasing complexity in this high-risk industry segment.

Cyber Risk Management

2015 was a banner year in terms of raising awareness of the operational risks associated with cyber systems in the MTS and building momentum toward deploying effective cyber risk management regimes and tools. The U.S. Congress held its first-ever hearing on cyber risk in our ports. The International Association of Classification Societies (IACS) has made cyber risk management a cornerstone of their agenda, the international shipping industry has published guidelines for cyber safety and security, and the IMO has the topic on the agenda for both the Facilitation and Maritime Safety Committees. This was not the case just one year ago. This year we may see enactment of H.R. 3878 (*"Strengthening Cyber security Information Sharing and Co-*

ordination in Our Ports Act of 2015"), which would require significant action to reduce cyber risks in our ports. Regardless of the outcome, the Coast Guard will be focused on providing policy, training, tools, and regimes to reduce cyber risk in the MTS. You should expect to see guidance on simplified voluntary reporting of cyber incidents in the MTS, common cyber vulnerability assessment tools and addressing cyber risk through the requirements of the Maritime Transportation Security Act. Coast Guard Captains of the Ports have all received training on cyber risk management and will continue their engagement with Area Maritime Security Committees and facility plan holders to ensure we adequately manage this operational risk.

Waterway of the Future

Another area of focus will be improving mariner situational awareness and access to, as well as transparency of, information across the MTS. You can expect to see increased deployment of electronic and virtual Aids to Navigation, or ATON, to complement existing physical aids. You should also expect to see a prototyping of waterways designed to test 21st century physical ATON, increased services from our Navigation Center that make it easier to find the information most relevant to your specific operation, policy clarification regarding the use of electronic charts and carriage of paper charts for non-SOLAS vessels, and refinements to our vessel traffic systems. These initiatives are vital to improving port and waterway safety and efficiency that will allow us to increase capacity of the MTS and meet the needs of our nation. We need, and look forward to, input from all stakeholders on our *'Waterway of the Future'* initiative.

Sub Chapter M

Towing Vessel Regulations remain a focal point and continue to receive significant attention from the Coast Guard and the Department of Homeland Security. We will continue to work the policy, process and training required to ensure a smooth roll out and transition of the towing fleet to inspected status, even while the rule undergoes review and final approval in advance of public release. In 2016, you can expect Coast Guard staffs at Headquarters, Districts, Sectors, and the Center of Expertise to increase industry outreach regarding the implementation of Sub Chapter M. This work will include extensive input and coordination with appropriate federal advisory committees and industry organizations. We are excited to work toward achieving a joint goal that will ensure our towing vessel fleet remains the safest in the world.

The Tragic Sinking of the EL FARO

Next month, the U.S. Coast Guard and the National Transportation Safety Board (NTSB) will hold public hearings regarding the ongoing investigations into the loss of EL FARO and her crew. Those hearings will help determine the future path and timeline of the Coast Guard investigation. At this point, we expect that the Report of Investigation will be complete in late summer with the Commandant's Final Action Memo to follow. Although it is too early to speculate on the findings or required actions, this incident, to include the hearings and reports, should remind us all of the complexity of ships and shipping, and the vital role we each play in ensuring a safe, secure and environmentally sustainable MTS.

I strongly encourage your participation in the regulatory process – there are so many ways for you to do so! For example, you could consider joining a professional association, provide comments to rule-making dockets, attend public hearings, or follow and comment on *Maritime Commons*, which is our newly established blog for maritime industry. I look forward to hearing from you. I am confident that with your help, we will see great progress as we enter 2017 in 2016!

Rear Adm. Paul Thomas, *the Assistant Commandant for Prevention Policy, develops and maintains policy, standards and program alignment for waterways management, navigation safety, boating, commercial vessels, ports and facilities, merchant mariner credentialing, vessel documentation, marine casualty investigation, inspection and port state control activities.*

Dredging Needs Grow As the Lower Mississippi Floods

Photo: Chuck Perrodin, Louisiana's CPRA

The need to dig deeper for federal dollars has never been more pronounced.

By Susan Buchanan

In the past five years, maintenance dredging of the lower Mississippi River in Louisiana has cost the U.S. Army Corps of Engineers an average of $102 million annually. Looking ahead, maintenance will remain expensive in 2016, especially following this winter's flood, said Sean Duffy, executive director of the New Orleans-based Big River Coalition, which includes over 100 maritime entities.

"It will take $90 million to $100 million to recover the channel completely after the impact of the high river," Duffy told *MarineNews* in January. Sediment, dead trees and debris are all floating south. "We jokingly say that the forest is coming down," he said. "After the flood, the river's floor comes up because of the compiled sediment, and its ceiling drops" as water subsides. Unfortunately, the Army Corps' budget isn't set up for the emergency effects of a flood, he said. And, that's a problem.

Moving bulk and petroleum cargoes from the heartland to international markets isn't simply a benefit of an efficient river system. It is absolutely critical to the nation's economy. Directly south in the bread basket of South America's great Amazon basin, they get it. Today, an aggressive South American fleet renewal program is augmented by an equally strategic port development plan. The difference between competitive U.S. grain and commodities sales and lost opportunities hinges largely on what the United States – through its funding of USACE maintenance activities – decides is important. Many industry stakeholders think we are headed for failure.

The 1,044-foot Maersk Kawasaki calls at the Port of New Orleans regularly. The vessel is just one of thousands that depend on adequate dredging and maintenance on the Mississippi River.

Coastal restoration and dredging operations underway in Louisiana.

"We have lots of dredging needs to go around in Louisiana. The Calcasieu River port of Lake Charles, the Atchafalaya River port of Morgan City, Port Fourchon serving offshore energy, and Terrebonne port in Houma all require dredging."

– Matt Gresham, Port of New Orleans spokesman

Funding and Dredging: unequal partners

The New Orleans District of the Army Corps awarded 17 cutterhead and hopper dredging jobs to U.S. companies from 2005 through 2015. The reality of the situation, however is that whether or not the Corps has enough federal funding in a given year to dredge the lower Mississippi adequately depends on the river's conditions, Matt Roe, Army Corps spokesman in New Orleans, said. "Some years, funding may not be enough to provide full project dimensions in the deep-draft navigation channel," he said, adding, "It depends on how much sediment the river carries downstream."

It should go without saying that dredging is critical to moving 500 million tons of cargo annually on the lower Mississippi River. That requirement, however, isn't always apparent to politicians in Washington. "All imported or exported cargo on the lower river transits the main shipping channel at Southwest Pass, which I often call the nation's revolving door to international trade," insists Duffy, who added quickly, "Channel maintenance must be done annually in the area of Southwest Pass, and while the frequency of dredging depends on many factors, the main concern being high water bringing down large amounts of sediment." According to Duffy, and as a general rule, Southwest Pass must be dredged when the Carrollton Gauge in New Orleans reaches 10 feet and is rising. But dredging is often required for six to eight months each year, and is usually done in the spring and fall, with a lull in the summer. Sometimes, even that is not enough.

In 2015, New Jersey-based Weeks Marine, Inc., with an office in Covington, La., completed a Southwest Pass Maintenance Dredging Project for the Army Corps, estimator Thomas Simnick at Weeks said. Weeks works under the supervision of the Corps' New Orleans District to maintain the river's required, navigable depth.

"The river deposits sediment in a manner that creates hazards for vessels, and if left unattended these hazards can result in restricted shipping lanes, closures for deep-draft vessels and grounding of vessels," Simnick said. "To reduce these risks, the Corps issues yearly navigation contracts to maintain river depths in projects that are essential to the lower Mississippi's infrastructure."

Dredging Keeps U.S. Exports Competitive

A big slice of the nation's economic activity depends on keeping the Southwest Pass and the crossings above New Orleans dredged, Duffy said. "American farmers remain competitive in world markets because of cost savings provided by the Mississippi River and tributaries system," he said. About 70 percent of U.S. agricultural exports are shipped via the Mississippi. "Farmers in other exporting countries, including Brazil and Argentina, can grow the same, quality grain products cheaper than U.S. producers

Photo: Tracie Morris Schaefer, Port of New Orleans

"American farmers remain competitive in world markets because of cost savings provided by the Mississippi River and tributaries system. About 70 percent of U.S. agricultural exports are shipped via the Mississippi. Farmers in other exporting countries, including Brazil and Argentina, can grow the same, quality grain products cheaper than U.S. producers but the MRT system provides huge cost savings."

– Sean Duffy, executive director of the New Orleans-based Big River Coalition

A Weeks Marine hydraulic dredge in action on a navigation project for the USACE.

but the MRT system provides huge cost savings," he said.

Duffy cited numbers released in September by the Mississippi River Cities & Towns Initiative or MRCTI, a group of 68 mayors from cities and towns in ten states, estimating that the river generates $405 billion of revenue yearly and supports 1.3 million jobs. "The return on investment from dredging and channel maintenance is huge," Duffy said. "In the last five years, the average cost to maintain the Mississippi River has been in the range of $125 million annually, and given the 500 million tons of incoming and outgoing cargo and a $405 billion annual impact, inadequate funding for dredging shouldn't be a factor."

Big Surplus in the Harbor Maintenance Trust Fund

The federal Harbor Maintenance Tax is a .125 percent ad valorem levy, paid by shippers of domestic and imported cargo. When it was introduced twenty years ago, the HMT was expected to cover the costs of operating and maintaining the nation's deep-draft and coastal waterways. Revenues from the HMT are deposited into the HMT Fund, which provides the Army Corps with money to dredge federally maintained harbors to authorized depths and widths set by Congress. In 2008, the U.S. Government Accountability Office said that HMT collections greatly exceeded the money being used to maintain harbors and noted that the HMT Fund had a growing surplus. And today, despite the ongoing surplus, busy U.S. harbors are not being fully maintained.

Inadequate funding from the HMTF has impacted the Mississippi and all U.S. deep-draft channels that require dredging and maintenance, Duffy said. "The HMTF has a surplus of over $9 billion now, and though the Water Resources Reform and Development Act of 2014 allows for increased funding from the HMTF, full allocations aren't scheduled to begin until 2025," he said. "In the last five years, the Mississippi River ship channel was severely deficient many times, meaning it wasn't funded and maintained at a fully authorized level of 750 feet by 45 feet for most of the stretch below Baton Rouge."

"Parties responsible for cargo importation pay the HMT, but when the lower Mississippi channel isn't properly maintained at its authorized dimensions and when draft restrictions are required, importers and American consumers face increased costs from cargo movement and delays,"


Photo: Weeks Marine

"Some things are worth the wait and this is certainly true for the FY '16 Omnibus Appropriations agreement that provides record-level funding for the Corps' Civil Works mission. The $1.3 billion above the Administration's request for the Corps' overall funding will help to modernize our nation's waterways infrastructure, facilitate exports, create jobs, make more efficient the transportation supply chain, and increase American competitiveness in world markets."

– Mike Toohey, WCI President/CEO

Duffy said. "Many of the problems encountered by today's U.S. navigation industry are because of inadequate allocations from the HMTF."

Lower Mississippi Likely To Be Deepened

At the Port of New Orleans, spokesman Matt Gresham said that dredging is vital to international trade and that deepening of the lower river to accommodate larger Panama Canal vessels is being considered. "The lower river is much deeper than its authorized draft of 45 feet, and talk is of deepening it in two phases," he said. Phase one would deepen Southwest Pass to Venice, La., or mile 10 above Head of Passes, covering a 30-mile stretch. That phase would open 175 miles to a 50-foot channel because of the river's natural depth. Phase II would begin at Belmont Light at mile marker 152.9 and would dredge several river crossings to Baton Rouge harbor at mile 232.

Gresham cited a 2013 study, done by former University of New Orleans chancellor Tim Ryan and commissioned by the Big River Coalition and Louisiana's Department of Transportation and Development, estimating that a deeper channel with bigger vessels carrying more cargo would expand U.S. economic output by $11.49 billion, create 16,991 permanent jobs and increase American worker incomes by $849.5 million. That study is being updated, with a draft likely this fall, he said.

"We have lots of dredging needs to go around in Louisiana," Gresham said. "The Calcasieu River port of Lake Charles, the Atchafalaya River port of Morgan City, Port Fourchon serving offshore energy, and Terrebonne port in Houma all require dredging." South Louisiana port officials and industry members meet regularly to discuss funding needs, he said.

At Louisiana's Department of Transportation and Development, spokesman Rodney Mallett said his agency and the Army Corps are working on a re-evaluation of the 2013 river-deepening study and that it should be finished by 2018. DOTD, however, doesn't contribute financially or participate in any way in the Corps' maintenance dredging of the lower Mississippi, which is considered a federal waterway, he said.

Dredging for Coastal Restoration

It is also important to remember that dredging isn't just

Last March, Weeks Marine began work on a Louisiana coastal restoration project with its hydraulic cutter-suction dredge E.W. Ellefsen.

Photo: Weeks Marine

about navigation and channel depths. And, dredge spoils are no longer a dirty word in some cases. For example, coastal restoration work along the Gulf Coast is a dredge market that involves agencies beyond the Army Corps, Hanson noted. "In Louisiana, our largest restoration client is the state's Coastal Protection and Restoration Authority, which has undertaken some of the most challenging dredging projects in the world, funded mostly by BP's payments for the 2010 Gulf spill. GLDD has performed several of these projects and has several more under contract at this time."

According to CPRA, it is the first authority worldwide to move sand to build barrier islands. And every foot of land that's been built has been done with dredged material. In a $200 million effort to reconstruct the Caminada Headlands from Port Fourchon bay towards Grande Isle, Louisiana, beaches and dunes are being rebuilt on 800 acres, using sand from the Gulf. Last March, Weeks Marine began work on that project's second phase with its hydraulic cutter-suction dredge E.W. Ellefsen. Weeks is scheduled to complete that phase by mid-2016.

Dredging Companies Vie for Corps Contracts

Dredging companies compete for projects in the broad-based U.S. dredging market, Bill Hanson, vice president at Great Lakes Dredge & Dock in Illinois, said. "The Corps manages the Mississippi River channel very effectively with a series of contract bids that they let out whenever the need arises," he said. "But the Corps is challenged by inconsistent federal funding and a very inconsistent river, routinely influenced by drought and floods."

"While GLDD has a long history of working in the river and has won many contracts from the Corps, we don't have a Corps contract now to do river maintenance," Hanson said. "Several of our competitors are currently working there. All of the competition, along with the nation's dredging equipment capacity, serves the Corps as it works on the river and the national dredging program."

If the Army Corps were to receive predictable, annual

Corps Funding at a Glance ...

FY '16 funding for the Corps' Civil Works mission: $5.99 billion,
Inland Waterways Trust Fund (IWTF)-supported projects funding: $405.2 million
Operations & Maintenance (O&M) increased to $3.137 billion
Harbor Maintenance Trust Fund (HMTF): $1.25 billion
General Investigations account: $121 million was allocated

Photo: Chuck Perrodin, Louisiana's CPRA

Coastal restoration and dredging operations underway in Louisiana.

funding, then dredging contractors would be better positioned to decide whether they can justify buying new equipment, Duffy said. "More equipment is needed nationally, but since dredging is a business there must be a return on investment," he said. "A new, larger hopper dredge has a price tag of about $150 million, and no one can afford to be wrong about such a commitment."

Demand for equipment fluctuates, depending on river conditions and projects. "While we could use more dredges, there have been periods when equipment was inactive for months," Duffy said. "If the Corps' funding levels were known and predictable, the dredges would be there when they're needed."

Looking Ahead: Digging Deep(er)

Despite worries of inconsistent and insufficient funding for dredging on the nation's waterways, it was in December that the Waterways Council (WCI) – the national public policy organization advocating for a modern and well-maintained national system of ports and inland waterways – applauded the work of negotiators to reach a final agreement for an FY 2016 Omnibus Appropriations bill that funds the Corps of Engineers' Civil Works program under the Energy & Water Development Appropriations bill. All of that funding came at levels far exceeding the President's request(s).

In a prepared statement, WCI President/CEO Mike Toohey said, "Some things are worth the wait and this is certainly true for the FY '16 Omnibus Appropriations agreement that provides record-level funding for the Corps' Civil Works mission. The $1.3 billion above the Administration's request for the Corps' overall funding will help to modernize our nation's waterways infrastructure, facilitate exports, create jobs, make more efficient the transportation supply chain, and increase American competitiveness in world markets."

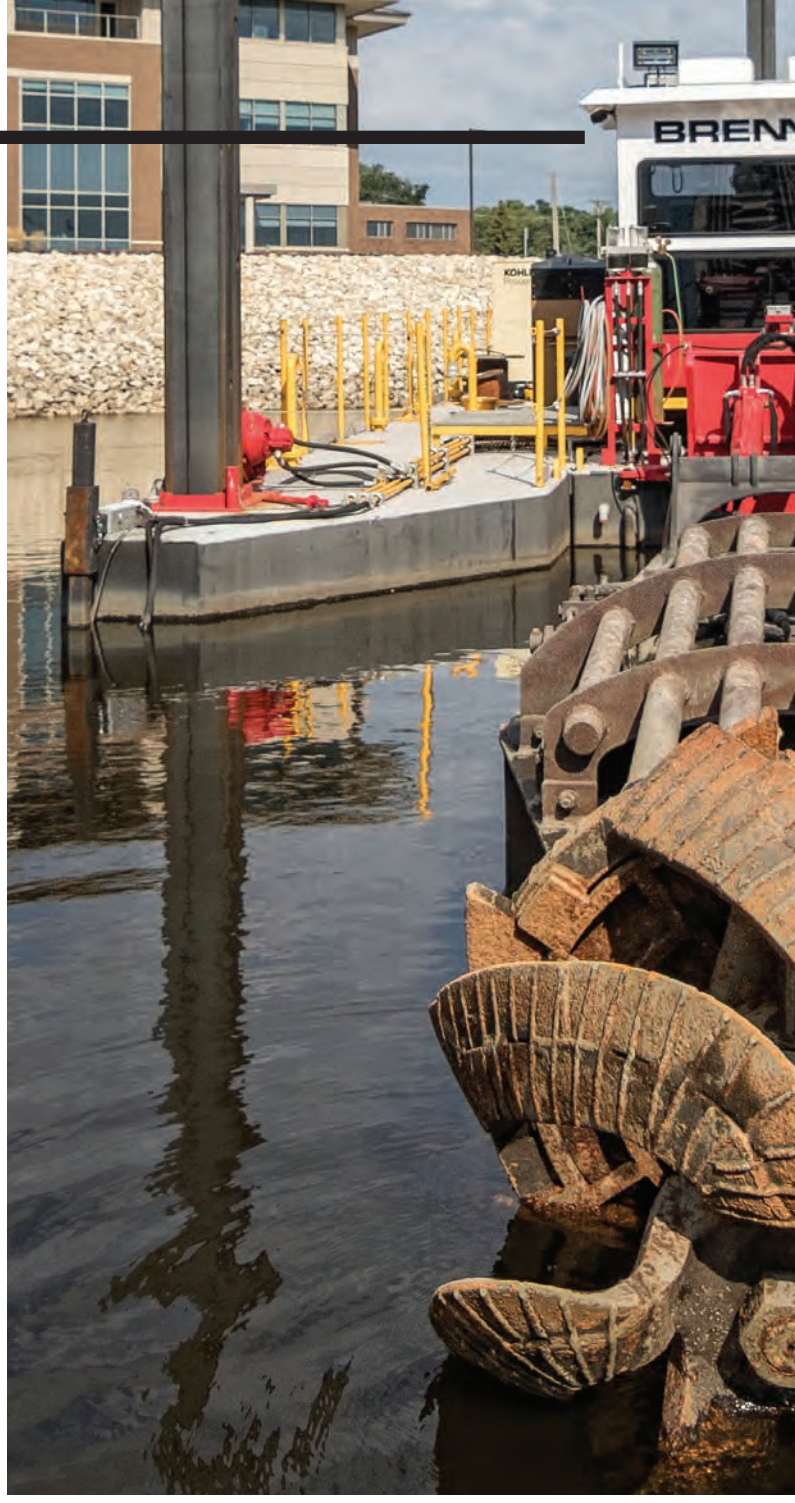
Perhaps nowhere else in the nation's economy is federal funding more important to the wellbeing of commerce. The increased funding at the federal level is encouraging. More encouraging, though, is the realization that for every dredging dollar spent, the revenues that come back in the form of economic benefits are exponentially larger. The time to dig deeper – in Washington and on the river – has finally arrived, and not a moment too soon.

Susan Buchanan *is a New Orleans-based business writer, specializing in energy, maritime matters, agriculture, the environment and construction. She holds a master's degree from Cornell University in agricultural economics and an undergraduate degree from the University of Pennsylvania.*

Dredging up History and Innovation

New J.F. Brennan Dredge Proves Its Value in Mississippi River Projects.

By Charles Johnson, DSC Dredge, LLC



When J.F. Brennan Company Inc. took delivery of a new customized Barracuda Class swinging ladder dredge in January 2015, the *"Victor Buhr"* became the ninth dredge in Brennan's fleet – comprising six Moray Class dredges with 8-inch discharges and three larger Barracuda Class dredges – manufactured by Reserve, Louisiana-based DSC Dredge, LLC. The dredge, which is the namesake of Brennan's Environmental Division manager, was quickly put into service to perform in Brennan's numerous dredging projects.

Founded in 1919, La Crosse, Wisconsin-based J.F. Brennan has long been involved with marine construction and environmental remediation for inland waterways throughout the United States. Brennan works with both government agencies and private companies, providing such services as dredging, diving, dam repairs, pile driving, railroad bridge repairs, in-situ capping and more. The company has handled lock and dam work for the U.S. Army Corps of Engineers, and is one of only three contractors in the nation on contract to complete remediation dredging for the Great Lakes National Project Office.

Digging In

The *Victor Buhr*'s inaugural project, which began in late April and was completed in late May, involved siltation dredging at the Quad Cities Generating Station, a two-unit nuclear power plant located on the Mississippi River near Cordova, Illinois.

Quad Cities Generating Station requires biennial dredging of siltation near the secured water intake area of the plant. Brennan's dredge experts decided the newly commissioned *Victor Buhr* dredge was ideal for this project. The Victor Buhr is customized to allow for dredging depths of up to 36 feet. For the Quad Cities project, the dredge was required to work at depths that reached 15 feet.

According to Del Groth, Brennan superintendent for the project, "Quad Cities Nuclear requires a defined amount of water to be available for emergency purposes. If it goes out of spec, through too much sand or silt coming close to the secured intake for the plant, then it needs to be cleaned out. Quad Cities has worked with us to do this about every other year for the past 20 years. This year, we worked seven

The Victor Buhr is the newest swinging ladder dredge in J.F. Brennan Company's fleet. It joins eight other dredges manufactured by DSC Dredge, LLC. The dredge is shown here in Brennan's LaCrosse, Wisconsin, "yard."

days a week to finish the project within a month." Groth says the project typically entails dredging approximately 37,000 to 40,000 cubic yards of sand and silt.

At the Quad Cities site, the material was transported 5,000 feet via pipeline from the dredge to one of two onsite containment areas. A DSC booster pump was placed 2,000 feet from the dredge (3,000 feet from the containment area) to ensure consistent production rates and save wear and tear on the dredge pump. "Quad Cities contracts with another company to spread the material 2 to 3 feet thick in the containment area," Groth notes. Although this is considered to be a remediation project, the dredged material is not toxic. "Because this is a highly secure area, the material stays onsite to support ease in running the plant," adds Groth.

Recent Project: Island Unloading

The *Victor Buhr*'s second job – the McMillan Island Unloading project for the U.S. Army Corps of Engineers (USACE) on the Upper Mississippi River near Guttenberg, Iowa – required some additional re-outfitting of the dredge, including the addition of the custom-built thrusters for work along this section of the Mississippi. The project began in early October 2015, and was completed by end of November 2015.

For this project, Brennan used the *Victor Buhr*'s cutterhead to excavate sand and, with the help of DSC boosters, pump it two miles from the island to a sand wheel dewatering system that the company had located at the USACE's Buck Creek Upland Placement Site, which is a permanent placement site for the stockpiled sand. The sand wheel is constructed of 27 three-cubic-foot buckets. As the buckets move upward, water drains through screens at the back of the buckets. By the time the buckets crest the top of the wheel, the material is dewatered to the point that it is transportable by barge or truck. On the downward rotation, the sand falls onto a conveyor, which can form a stockpile or load a hopper barge. The benefit of the sand wheel system for this project is that it allowed sand re-users access to the site during filling operations, which would not have been possible with the traditional system of using multiple dikes and weirs to dewater the sand.

Dredge Specifications for a Victor Buhr design dredge at a glance ...

Length Overall: 60 feet	Overall Length Assembled: 100 feet	Total Installed Power: 950 HP
Beam: 26 feet	Maximum Dredging Depth: 36 feet	Engine: Caterpillar Diesel
Depth: 5 feet	Total Weight: ~ 195,000 pounds	Cutter Drive: 90 HP

The McMillan Island Unloading Project required some additional re-outfitting of the Victor Buhr, including the addition of the custom-built thrusters for work along this section of the Mississippi. The project began in early October 2015, and was completed by end of November 2015.

Fully Customized

J.F. Brennan began its relationship with DSC Dredge more than 20 years ago, in 1993, after management realized the company needed to work with a manufacturer that could accommodate its needs for a customized dredge.

"DSC's willingness to modify its dredges to our needs is why we have stuck with them for so many years," says Mark Binsfeld, marketing and business development manager for Brennan. "Prior to the DSC dredges, we had more conventional closed-loop underwater dredges, but all those have since been sold, and the only units we have now are swinging ladder cutterhead dredges from DSC Dredge. All of our dredges are customized to meet the specific challenges we regularly encounter," he explains.

With manufacturing facilities in Reserve, Louisiana; Poplarville, Mississippi; and Greenbush, Michigan, DSC specializes in outfitting dredges to meet the exact specifications of its customers. In order to meet the needs of Brennan's typical job site, DSC customized the company's dredges to all feature high-viscosity cutterheads, booster pumps and a larger cab. In order to ensure the extreme accuracy that is required for Brennan's numerous remediation dredging projects, DSC developed a special articulated ladder that would allow the cutterhead to operate parallel with the bottom surface. To increase buoyancy on the dredges, which is especially helpful for shallow-water projects, DSC increased the size of the wing tanks. In addition to those upgrades, Brennan also wanted the hydraulic systems for their dredges to be relocated to the dredge deck from their standard position in the hull's wing tanks.

"DSC hasn't just built new dredges for us; they have actually helped us modify current dredges that we have, as well. The first dredge we bought from DSC Dredge was a 12-inch swing ladder cutterhead dredge. We call it our 'Michael.' It's been around for about 20 years, and is still operating with a few modifications and improvements over the years," says Binsfeld.

The two DSC dredge model types in the Brennan fleet reflect upgrades to the standard DSC Dredge product offering: Both models are convertible from swinging ladder to conventional design. For example, with its hydraulically driven underwater pump assembly, the portable Moray Class dredge can be operated conventionally or as a swinging ladder dredge. It matches the current dredging industry trend of pumping low flow-rates with higher-percentage solids. Further meeting the demands of today's dredgers, the Moray Class is suited for applications where flow rates need to be minimized, such as for pumping into geotubes or retention areas that do not accommodate large volumes of water.

The Barracuda Class dredge is a swinging ladder dredge that can also be operated conventionally by locking the ladder in place and pivoting on the stern spud, using swing wires and anchors, which increases the cut width and dredging efficiency. The Barracuda Class dredge offers the option of two front-swing winches and has discharge sizes ranging up to 18 inches. Standard features include a user-friendly control panel with a PLC-based operating system and a power up/down spud system with API-rated winch drums for proper cable storage.

As the namesake of Vic Buhr, Brennan's Environmental Division manager, the Victor Buhr is fully customized with special features that Buhr was active in designing, as he worked with the engineers at DSC and Brennan. These custom features include:

High-viscosity cutterhead ... at a glance

12-inch by 12-inch discharge pipe	Articulated ladder allows cutterhead to operate parallel to bottom surface
Wing tanks on pontoons add stability	Maximum dredging depth of 36' w/24-foot dredging depth in articulated, swinging "surgical" dredging mode
Custom cab area, built to order	Front spuds with gates to eliminate the need for removing the spuds from the sockets, and instead pulling the dredge from side to side
Customized PLC controls	Hydraulic systems relocated to dredge deck
Custom thrusters for deep river ops	Cab accommodates additional circuitry & hard drives

"We value the relationship that has developed between DSC and J.F. Brennen, which has brought together two family-owned companies that strive for excellence in everything we do. Together, we have produced 15 pieces of dredging equipment—including dredges, boosters, barges and work boats—which have been the direct result of our combined expertise in dredging applications, engineering and customized solutions."

– Bob Wetta, DSC Dredge president and CEO

"DSC's willingness to modify its dredges to our needs is why we have stuck with them for so many years. Prior to the DSC dredges, we had more conventional closed-loop underwater dredges, but all those have since been sold, and the only units we have now are swinging ladder cutterhead dredges from DSC Dredge. All of our dredges are customized to meet the specific challenges we regularly encounter."

– Mark Binsfeld, marketing and business development manager for Brennan

"Vic has been instrumental in designing our equipment since the beginning," said Brennan president Tony Binsfeld in March 2014, as he signed the dredge order for the Victor Buhr during that year's CONEXPO-CON/AGG trade show in Las Vegas. "We have been naming dredges after the projects they are designed for. This one is strictly different," he said.

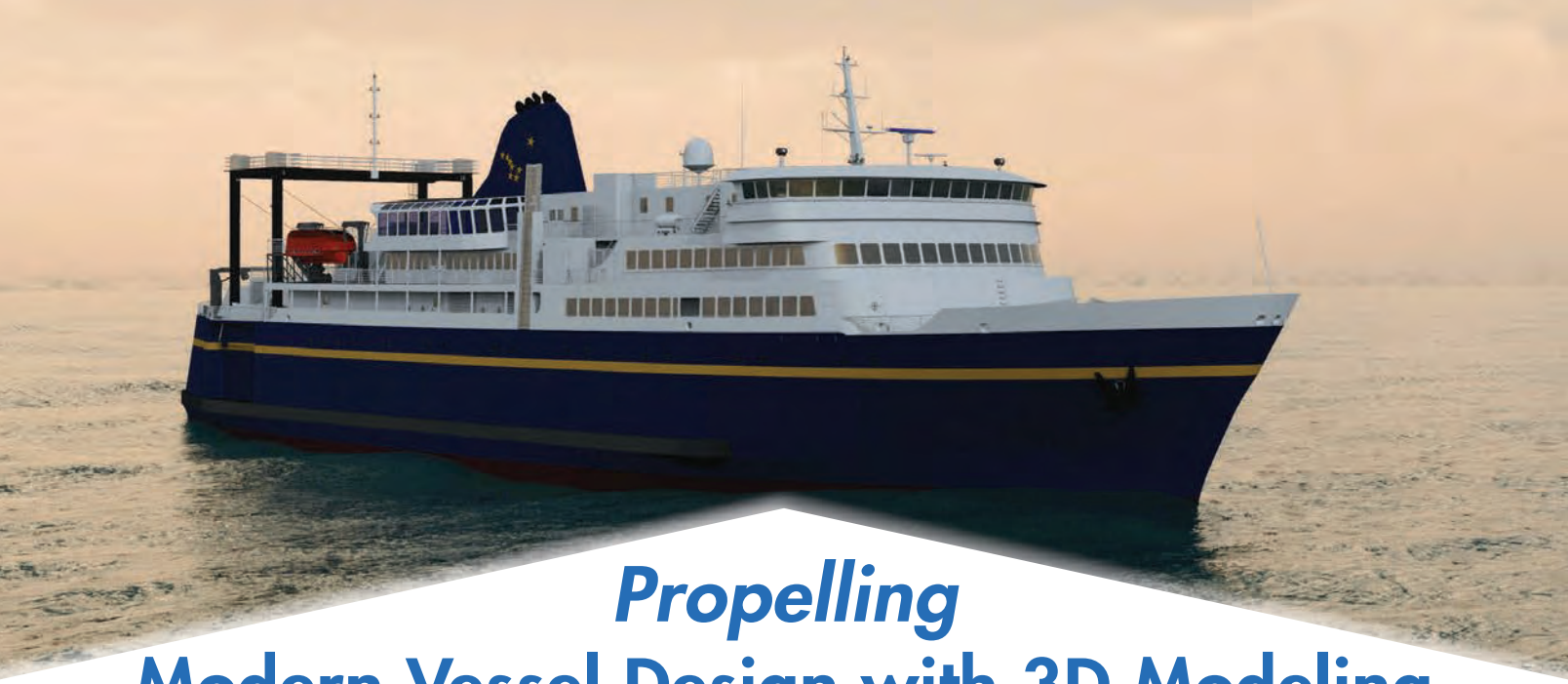
Relationships Matter

"After 20 years, the relationship with DSC is a special one," comments Binsfeld. He notes in particular the efforts of the DSC Dredge engineering team, led by Bill Wetta, senior vice president and chief technology officer, and Damon Gonzales, vice president of engineering. "We have worked closely with all of them to come up with what we need over the years. Our head of remediation, Vic Buhr, was instrumental in starting the initial relationship with Tommy Wetta at DSC Dredge. Over the years, we have worked very closely with his sons Bill and Bob – Bill on the engineering end and Bob on the sales end – to really customize and modify these dredges to meet the particular requirements that we have on our jobs."

Bob Wetta, DSC Dredge president and CEO agrees, telling ***MarineNews***, "We value the relationship that has developed between DSC and J.F. Brennan, which has brought together two family-owned companies that strive for excellence in everything we do. Together, we have produced 15 pieces of dredging equipment—including dredges, boosters, barges and work boats—which have been the direct result of our combined expertise in dredging applications, engineering and customized solutions." Today, dredging up the past and looking to the future at the very same time, DSC and J.F. Brennan continue to innovate and solve complex problems as the nation's dredging needs increase.

Charles Johnson *is the Director of Sales for DSC Dredge, LLC, which is based in Reserve, Louisiana.*

For the McMillan Island Unloading Project, the Victor Buhr and the Michael B., both customized DSC Barracuda Class dredges, were used to excavate sand. With the help of DSC boosters, the dredges pumped the sand two miles from the island to a sand wheel dewatering system that the company had located at the USACE's Buck Creek Upland Placement Site, which is a permanent placement site for the stockpiled sand.



Propelling Modern Vessel Design with 3D Modeling

Glosten's marine engineers and naval architects increasingly employ 3D modeling to enhance projects and communicate with stakeholders.

By Joseph Keefe

The use of 3D modeling in many industries isn't necessarily new, but its advent on the waterfront and subsequent impact on vessel designs and naval architecture is just starting to take off. For that reason, Glosten, a U.S. West Coast-based naval architecture firm, regularly uses 3D modeling to enhance projects and communicate with stakeholders. In the past, shipyards would fabricate physical mockups of critical areas and compartments prior to fabrication. Computer 3D modeling greatly reduces or eliminates altogether the need for physical mockups.

But, shipyards have actually been using 3D computer lofting and pipe spooling software for years. Similarly, naval architects have been using 3D computer models for performing CFD and FEA. 3D software tools have been around a long time, but those early tools required development of time-consuming 3D models. Because of this, 3D modeling was typically only undertaken once the design was mature.

Fast forward to today: software tools have significantly advanced, and 3D models are much easier to develop and revise – and therefore more cost effective to use – earlier in the design process. This allows for more iterations where stakeholders can visualize the design earlier in the design cycle, and contribute to advancing the design earlier in the process. As an early adopter of the practice, Glosten's success with 3D modeling extends well beyond the design desk, all the way to the bottom line of its many clients. A look at some recent projects shows how, and why.

3D Modeling

Regardless of how you interface with the marine industry, chances are, 3D modeling will be an exciting, rapidly changing part of your very near future. Already, naval architecture firms regularly use 3D modeling to enhance projects and communicate with stakeholders. David W. Larsen, PE, Director of Engineering of Engineering at Glosten, explains, "3D scanning refers to laser scanning and we are excited to say that 3D laser scanners are changing the way Glosten approaches refit projects. Our 3D laser scanner develops color images that are as detailed as high-resolution digital pictures. The individual scanned images are 'stitched' together to form a full color 3D model of the compartment that can be used to obtain measurements. The scanned images are typi-

**All photos courtesy Glosten*

Tustumena – Pilot house

cally accurate to within a fraction of an inch."

3D computer modeling has been employed during production design, allowing shipyards to loft structure, generate pipe spools and perform other pre-outfitting tasks for many years. However, 3D production design is a huge effort that does not readily lend itself to iterative processes such as concept design. Now, however, computer tools have advanced to the point where it is now economically feasible to utilize 3D computer modeling at the concept design and preliminary design phases.

As it turns out, the practice produces some powerful economies in the design-and-build process. Larsen explains further, "We have developed some proprietary ways of incorporating the scanned images directly into our 3D modeling software packages. This is effective for refit projects such as repowerings, installing ballast water treatment systems, installing exhaust gas scrubber systems, and similar major modifications in congested compartments. We have also used 3D laser scanning to develop Lines Plans of existing ships." In practice, the more congested and complicated the compartment, the more valuable the 3D laser scanning becomes.

Beyond all of that, Larsen also says that coupling the scanning technology with Glosten's modeling process has significantly reduced the dependency on accurate as-built drawing information. It has also changed the way they approach 'shipchecking' vessels for modifications. He adds, "We do not need to take every detailed measurement or capture every digital image. Once we have scanned an area of a vessel, we have everything we need to develop modification drawings."

3D in Action

When the Alaska Marine Highway System (AMHS) needed to repower its M/V Matanuska and begin design of another addition to their fleet, a total of four naval architecture firms submitted proposals. AMHS Vessel Construction Manager Tom Atwood simply told ***MarineNews*** in January, "Glosten was selected due to submitting the best proposal." But, another reason, said Atwood, was that 3D modeling is valuable for both newbuild and repowers projects alike. "It allows the designer and owner to visually see any interference and correct the design before construction starts," he explained, adding, "Excellent communications between the Naval Architect and Customer are the key to an ideal relationship." The use of 3D modeling, according to Glosten, facilitates that communication.

In terms of the AMHS M/V Tustumena Replacement Vessel project, Glosten was tasked with designing a newbuild ferry to meet Alaska Marine Highway System's operational and performance requirements. Eventually, the vessel will service Southcentral and Southwest Alaska Ports. For the repower project on the M/V Matanuska, AMHS plans to upgrade electrical generation, replace the main engines and engine and reduction foundation, as well as the reduction gears, main engine propulsion control and monitoring system. Other changes include shaft bearings, shafting and propeller upgrades; steering system modifications; bow thruster improvement; and other auxiliary equipment upgrades.

Jay Edgar, President,
Glosten

Ken Lane, PE,
Director of Production Services

"3D scanning refers to laser scanning and we are excited to say that 3D laser scanners are changing the way Glosten approaches refit projects. Our 3D laser scanner develops color images that are as detailed as high-resolution digital pictures. The individual scanned images are 'stitched' together to form a full color 3D model of the compartment that can be used to obtain measurements. The scanned images are typically accurate to within a fraction of an inch."

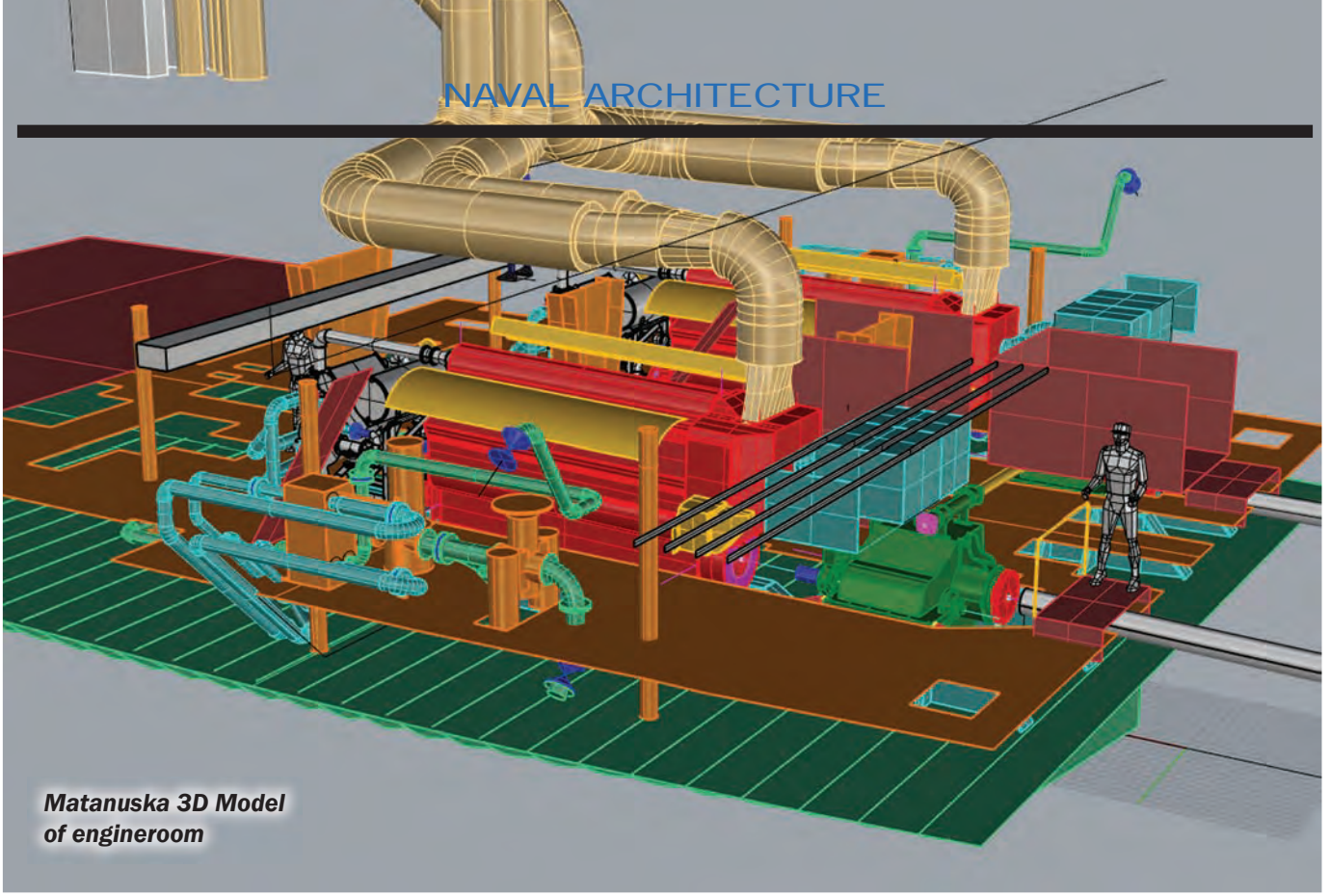
– David W. Larsen, PE, Director of Engineering of Engineering at Glosten

Because designing passenger ferries necessarily involves attention to a lot of detail, regulatory issues and new requirements, especially when talking about ADA issues, lifesaving rules and safety, Glosten looked for the most efficient way to make sure all requirements were satisfied. Atwood explains, "3D Modeling allows us to see the actual final layout, and provides valuable information on making final adjustments to the design. These adjustments may include verifying clearance for mobility of wheelchairs, overhead clearance in machinery spaces, and access for loading of litters into lifeboats."

While the use of 3D modeling is said to provide economy in way of reduced change orders, faster and more streamlined plans, AMHS couldn't yet quantify those savings for these projects. In reality, the two projects are Alaska Marine Highways' first experience with 3D Modeling. Atwood did say, "We hope that the use of 3D Modeling will have a major impact on the number of contract change orders." And, while the use of the 3D modeling added some time to the design phase of contract development, AMHS believes that it will have a positive impact on the construction phase.

Separately, and when Kitsap Transit needed a design package for a new passenger-only ferry, they began by searching for a firm that exemplified the way their organization works: like a family. Jeff Davidson, Grants & Compliance Coordinator at Kitsap Transit explains, "We're a public agency whose purpose is to serve a much larger community. With literally thousands of stakeholders, we know that the only way we can reach our goals is with thoughtful communication and mutual respect – just like with our families at home. Glosten exhibited those values during the RFQ and interview process, and they've carried on through the early stages of our project. When paired with their excellent design and analysis skills, we know we've made the right choice, and we're eager to see what our teams will build together."

Glosten is developing a design level package for Kitsap Transit to use during the construction bidding, bidding assistance, and construction phase services for a new passenger-only ferry vessel. This vessel will support Kitsap Transit's foot ferry service between three Puget Sound communities. Davidson admits that he is relatively new to vessel acquisition, but at the same time says that some things are important regardless of which industry you're operating in. "For me, a key aspect of project success has always been communication, whether that's with words, gestures, pictures, or models. That's why I'm really looking forward to the 3D model that Glosten will generate. I know that it'll help me to solidify my understanding of Glosten's design, to ask better questions, and to get that much closer to the right vessel



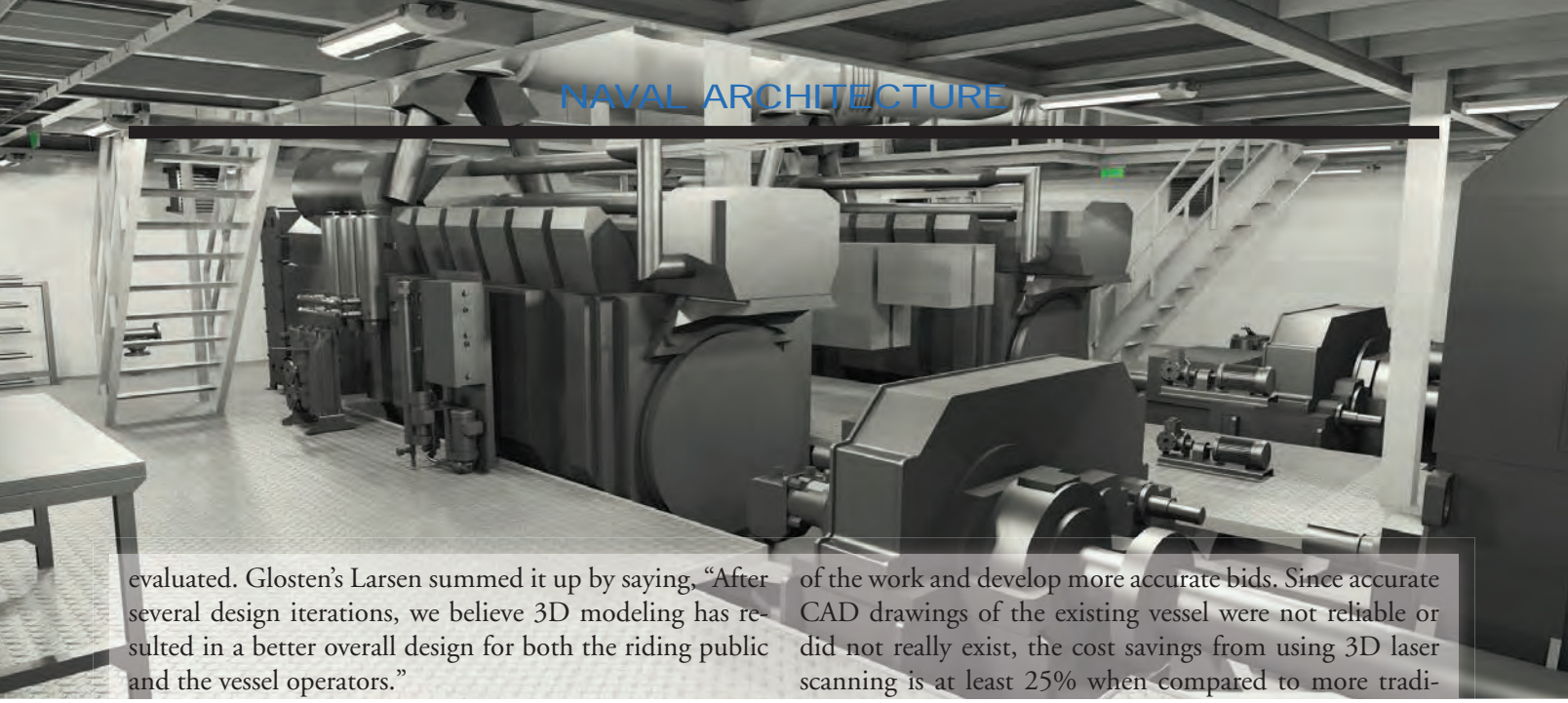
Matanuska 3D Model of engineroom

for Kitsap County," he said.

Glosten utilizes a variety of different 3D software tools. For concept design and preliminary 3D design efforts, they primarily work in Rhinoceros (Rhino). This, says Larsen, has proven to be a great tool for both design development and presentation. He continues, "As the design develops, we use other 3D software for vessel stability, noise and vibration studies, structural analysis (FEA), computational fluid dynamics (CFD), and vessel motion studies. Finally for production design we use the 3D software packages from ShipConstructor and Nupas/Cadmatic."

Glosten continually looks at ways to incorporate new technology and software to advance the design process and to be more efficient. Today, those efforts are yielding fruit. Larsen adds, "We believe we are moving another step forward in ship design and production engineering with the advances in usability of the 3D laser scanner and 3D software tools such as Rhino. As 2D computer aided design (CAD) software eventually made significant improvements in productivity over hand developed drawings, we see 3D computer modeling tools becoming faster, easier to use and more effective at communicating the vessel design details to both ship owners and shipyards than traditional 2D CAD drawings."

As *MarineNews* was going to press, Glosten was wrapping up the new ro-ro passenger vessel design for AMHS. The design team at Glosten worked with a steering committee of AMHS vessel operators, shoreside personnel, and managers in developing the design. 3D modeling was used in developing the arrangements of all the passenger spaces, dining areas, galley, vehicle space, pilothouse, and other key compartments. The 3D modeling gave the compartments a more 'real feel. The steering committee members could visualize themselves accomplishing their job on the new ship. Accessibility, sightlines, passenger egress, and relative locations of various components were more easily



evaluated. Glosten's Larsen summed it up by saying, "After several design iterations, we believe 3D modeling has resulted in a better overall design for both the riding public and the vessel operators."

Measurable Economy

According to Glosten, a recently finished repower design for an existing AMHS ro-ro passenger ferry entailed the extensive use of 3D laser scanning early in the project for all compartments impacted by the modifications. 3D models of key machinery and equipment items were developed and then located in the 3D models of the existing machinery compartments. Modifications impacting arrangements, such as large pipe routing, ventilation duct routing, gratings, and ladder modifications could therefore be developed to greater level of detail using the scan data in the 3D model. Glosten's Larsen explained, "This will allow the shipyards to have a more complete understanding of the work and develop more accurate bids. Since accurate CAD drawings of the existing vessel were not reliable or did not really exist, the cost savings from using 3D laser scanning is at least 25% when compared to more traditional shipchecking and design development methods."

For refit work, Larsen insists that time savings are being realized immediately. And, for vessels without a complete set of 'as-built' plans, the savings are even more significant. On the other hand, says Larsen, when developing new vessel designs, Glosten is not seeing significant time savings from using 3D tools at the concept design level. Instead, he says, "We see more benefit at concept design from having early client engagement. This client engagement and interaction leads to fewer surprises for both the client and the naval architect as the design matures. The end result is a more satisfied client whose expectations of the design are more clearly understood." It also promises a better bottom line – for everyone involved.

Premium Option for HydroComp PropCad Adds New Capabilities

HydroComp PropCad, a source for the geometric modeling of marine propellers, is now offering PropCad Premium, a collection of major new capabilities for PropCad. PropCad is software for the geometric modeling of marine propellers. It provides tools for the automatic preparation of 2D design drawings, 3D views, construction data, calculation of geometric properties, and CAD/CAM file export. In its 30th year of operation in 2015, HydroComp provides software and services for resistance and propulsion prediction, propeller sizing and design, and forensic performance analysis. The firm's clients include more than 700 industry, research, academic, and governments from more than 60 countries.

The new features supplement existing capabilities of PropCad with additional capabilities, specifically for the manufacture and inspection of marine propellers. A new Premium licensing option has been created for access to these new features. Nevertheless, PropCad will still be available in Standard and Premium editions. And, users with the separate Scan Converter add-on license will receive full credit upgrading to the Premium Edition.

The Premium license will include these new capabilities and upgrades:

Floating network license: All Premium licenses will include (or be upgraded to) a one concurrent user floating license (i.e., a one-seat Workgroup License).

Scan Converter: This utility allows for the entry of scanned blade surface data (in XYZ or polar format) and conversion into a PropCad design file. This information typically comes from a "scanning" measurement device, but it can be obtained by interrogation of a 3D CAD file. PropCad model Scan Converter can take 3D measurement data from an actual propeller and recreate the 2D profiles and blade parameters. This allows the propeller to be rebuilt as a parametric PropCad model.

Geometry Transforms: These allow for repositioning of the blade about the shaft axis, along the reference helix, or even about a spindle axis. Some of these are useful in conjunction with Scan Converter for smoothing and positioning. The spindle axis transformation can be used to check off-design geometry of CPP blades.

Pattern Corrections: This utility helps to build pattern geometry from a PropCad design. It provides the means to create new pattern geometry with additional offset stock for machining and finishing, as well as user-defined scaling factors to account for distortion and shape changes during the casting process.

Pattern Corrections is used to expand and thicken propeller designs to create machining models and casting patterns. Individual control is provided for separate blade parameters.

CPP Interference Check: This calculates the maximum extents of the propeller blade through a range of spindle axis rotation. It is useful for calculating clearance between CPP blades, as well as tip extent changes (when in nozzles, for example). Interference Check is used to for CPP propellers to calculate the maximum extents of the blade as it rotates through different angles, allowing designers to quickly calculate nozzle diameters.

www.hydrocompinc.com/propcad-premium

PropCad Applications:

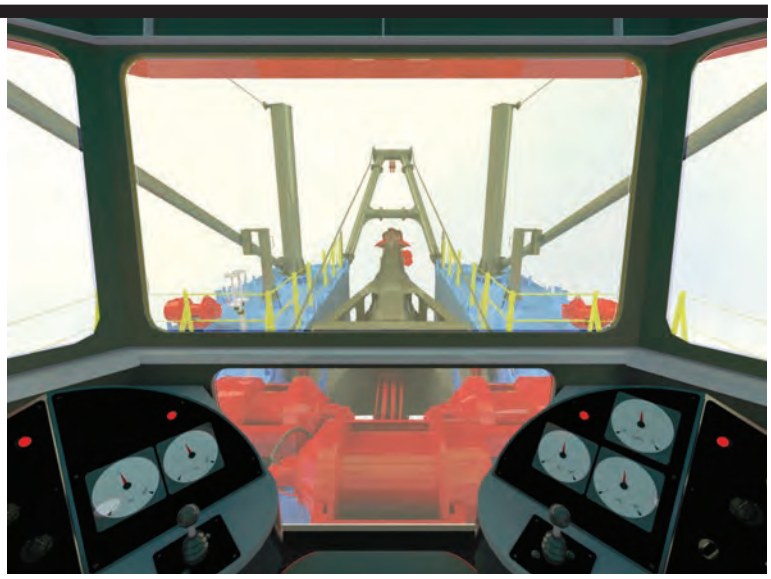
New product development	Modeler for FEA or CFD	Ocean-going marine propellers
Creation of derivative designs	Analysis of existing geometry	High-skew performance propellers
Production or custom	Open or ducted styles	Jet impellers and fans

PropCad™

Who Uses PropCad?

Propeller manufacturers	Propeller designers	Propeller builders
Hydrodynamic researchers	Propeller shops and vendors	Naval architects

ELLICOTT'S COMPLETELY NEW SERIES 2070 DRAGON DREDGE

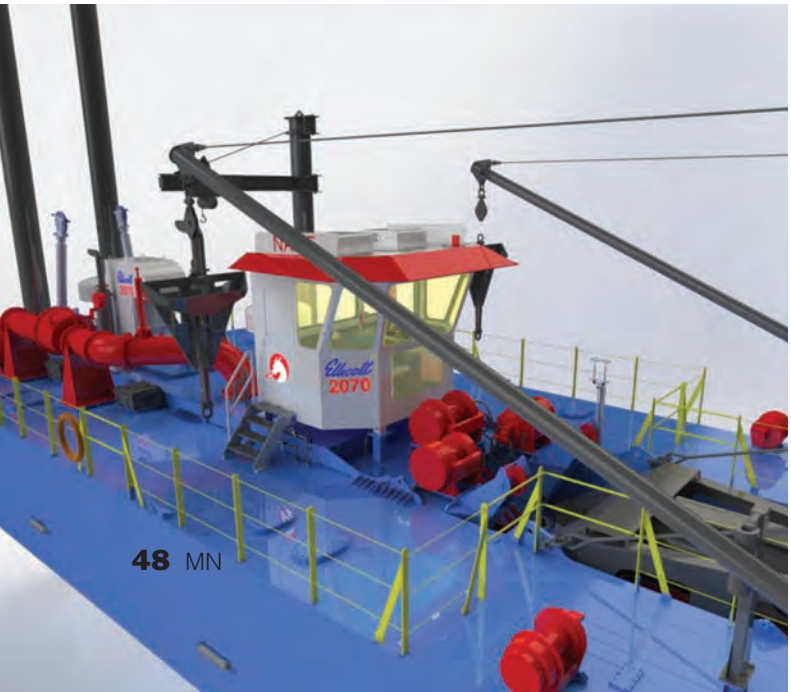


Ellicott has introduced a completely new design 20 inch (500 mm) cutter suction dredge, the Series 2070 Dragon dredge. The new dredger takes advantage of modern, up-to-date technology and advanced design techniques. This unit will replace the renowned Series 1870 Dragon as Ellicott's standard and in-stock 20 inch dredge. Like the 1870, the 2070 Dragon supplies ample power to the pump using a dedicated engine rated at 1300 HP (970 kW) and has a separate 440 HP (328 kW) engine dedicated to the hydraulic system. This dual-engine system allows for full hydraulic power to the cutter and winches, even when reduced RPMs on the pump are called for – something single-engine dredges cannot do. All engines are from Caterpillar and meet all current air quality standards. The entirely new hull was designed to meet BV Rules for Sheltered Waters.

The new design criteria allows for increased portability and easier construction in the field. Ellicott accomplished these goals by reducing the number of side pontoons from four to two. In addition, the dredge uses a new, simplified bow gantry design. Another major improvement is the hydraulic system, which is now based on highly efficient variable displacement pumps. This approach allows for lower HP input and thus less fuel usage to get the same hydraulic power to the devices. The 2070 is also equipped with a modern electric over hydraulic control system using Parker IQAN controllers for increased reliability. Options such as anchor booms, or spud carriage, or swivel elbow discharge can be easily added. The Series 2070 Dragon is suitable for a variety of projects; including harbor, river and waterway dredging, land reclamation projects, sand mining, and mining and tailing pond assignments.

The 2070 Dragon Dredger at a glance …

Power: 1740 HP (1297 kW)	Pump Power: 1200 SHP	Cutter Power: 250 HP (186 kW)
Engine: CAT C32 Diesel Engine	Overall length: 111 feet	Suction Pipe Diameter: 20 inch
Aux. Engine: CAT C15 Diesel Engine	Digging Depth: 50 feet	Discharge Diameter: 20 inch



Vigor Delivers for Tidewater Transportation

In December, Tidewater Transportation and Terminals marked delivery of the second of a series of three towboats, the Granite Point. The vessel, built by Portland's Vigor, follows towboat Crown Point, which began operations along the Columbia Snake River (CSR) in May 2015. Like the Crown Point, the Granite Point is a custom-built, environmentally-friendly towboat that was specifically designed by CT Marine, Naval Architects and Marine Engineers of Edgecomb, Maine, to serve Tidewater's customers. The towboat was built to the same specifications as the Crown Point and a forthcoming sister vessel, the Ryan Point. Measuring 102 by 38 feet, with a depth at full load of 11 feet, the Granite Point stands out among other towboats along the river. The vessel offers a hexagonal wheelhouse with floor-to-ceiling windows on all six sides. The hexagonal design continues to the main deck, which consists of a galley with all the comforts of home, a media room, and a health and fitness facility. CT Marine's innovative towboat design on the Granite Point goes beyond the distinctive wheelhouse and mindful accommodations. Due to the unique challenges of maneuvering barges through swift-moving currents, high winds, and eight navigation locks along the CSR System, CT Marine designed an enhanced steering system utilizing four main steering and four flanking rudders. Coupling the steering system with two Caterpillar 3516C Tier 3 engines, the design team was able to increase the margins of safety and efficiency. The christening of Granite Point will be in conjunction with its sister vessel, Ryan Point, in mid-spring.

Granite Point at a Glance …

HP: 2240 BHP @ 1600 RPM	Propellers: (2) fixed pitch	Engines: Caterpillar 3516C EPA Tier 3 (2)
Nozzles: CT28 Kort Nozzles	Generators: (2) C7.1	Deck Machinery: (7) Patterson 65t electric
Service Speed: 8 knots	Fire Suppression: Kidde NOVEC	Winch Lines: Samson 1-3/8" Turbo 75 Synthetic

Rohr-Idreco Built Mobile Dredge for North American Frac Sand Mining

Rohr-Idreco has designed, built, and installed an RISD400-M (16") electric dredge for application in the frac sand mining industry. The new dredge, delivered last year, has a digging depth of 82 feet and production capacity in excess of 800 tph. The dredge is equipped with a state-of-the-art GPS and sonar system that provides the operator virtually real time mapping, showing where material has been dredged and where virgin material still lies through an intricate software system developed by Rohr-Idreco. The dredge is equipped with an RIDP 400

Rohr-Idreco dredge pump, plus five on shore RIBS 400 Rohr-Idreco booster pump stations. They are designed for reduced wear and lower energy consumption.

Nation's Largest All-Electric Paddlewheeler

Winding its way through downtown Austin, Texas, is scenic Lady Bird Lake, a gas-restricted reservoir of the Colorado River. Lone Star Riverboat Cruises guides visitors through the picturesque surroundings in Lone Star, a 75' double-decked paddlewheel, powered by twin Torqeedo 40 hp Deep Blue outboards.

Capt. Mike Pearce began Lone Star Riverboat Cruises with a diesel-powered paddleboat and an exemption to operate a fueled vessel on the lake. When the boat became too old to use, Pearce went all-electric. As his business grew, so did his fleet. With a 5 hp restriction in place, even his small 32' and 35' pontoons were often under-powered on windy days, not to mention the two-level Lone Star. Needing more power, Pearce, who has a city contract, was approved for an exemption to the horsepower limit for the paddlewheel. Replacing the small outboards with reliable 40 hp Torqeedo Deep Blue motors was a wise investment for Pearce. Torqeedo's ground-breaking Deep Blue is a fully integrated propulsion system. It brings together the innovative high-voltage 33 Kwh motor and single 13 Kwh battery, charger and connection box, and electronic remote throttle and on-board computer with touchscreen. It has a 23 to 37 mile range at 4 kts, and 10 to 13.5 miles at full throttle.

Gladding-Hearn Delivers New Pilot Boat to Delaware Pilots

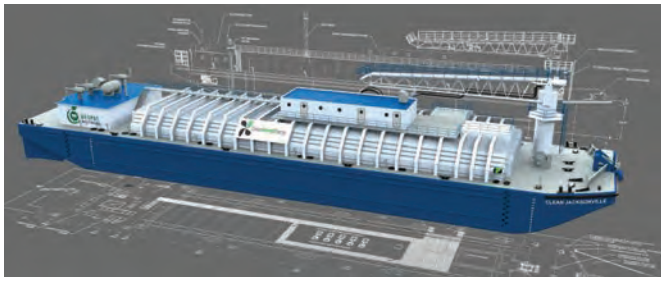
The Delaware pilots association has taken delivery of its third pilot boat of the Chesapeake Class from Gladding-Hearn Shipbuilding, Duclos Corporation. The delivery marks the 15th pilot boat of this class built by the Somerset, Mass., shipyard, since its introduction in 2002. Designed by C. Raymond Hunt & Associates, the all-aluminum pilot boat is powered by twin Volvo Penta D16 diesel engines, each delivering 651 Bhp at 1800 rpm, with ZF 500-1-A gear boxes. Each engine has a two-circuit Fernstrum keel-cooling system recessed into extra heavy bottom plating for operation in ice. The engines turn 5-blade NiBrAl propellers. Volvo Penta's EVC system is mounted at the control stations in the wheelhouse and at the transom. The vessel is fitted with a Humphree Interceptor automatic trim optimization system. The wheelhouse is outfitted with five Stidd seats and a three-zone, diesel-fired Espar Hydronic 35 heater for the cabin, main deck, and handrails. The forward wheelhouse windows feature ¾-inch electrically-heated laminated glass for de-icing. Interior sound levels are approximately 78 dba. At the transom is a winch-operated rotating davit over a recessed platform for pilot rescue operation. The Delaware pilots chose an unpainted launch to reduce maintenance costs.

The J.P. Virden at a Glance …

Vessel length: 52.6 feet	Vessel draft: 4.8 feet	Propellers: (2) NiBrAl
Vessel beam: 17 feet	Speed: 25 KT	Keel coolers: Fernstrum
Vessel depth: 8.5 feet	Gears: (2) ZF500-1-A	Hull Type: Deep-V monohull

North America's First LNG Bunker Barge Set for Launch

North America's first LNG bunker barge will be launched this month, Clean Marine Energy LLC (CME) announced in December. The 2,200 m3 barge hull construction is near complete and abrasive blasting and painting is scheduled to begin in the coming weeks. The LNG Mark III Flex cargo containment system, designed by Gaztransport & Technigaz (GTT), is scheduled to be installed immediately following the February launch. The Bristol Harbor Group designed and ABS classed vessel will be outfitted with the Conrad's custom fabricated 20m bunker mast under GTT license which will enable the barge to service a wide variety of vessels. The barge will also be equipped with six DH Industries StirLNG-4 cryocoolers capable of handling 125% of the B.O.G. in addition to the many other systems specifically designed for this vessel's LNG bunkering application to deliver the coldest LNG to the end user. The barge will be delivered to Jacksonville, FL in the 3rd Quarter of 2016 to service TOTE's newbuild "Marlin class" container vessels and other LNG-powered vessels in and around the Port of Jacksonville and the Southeast.



Crosby Expands with Modern Dredging Equipment

Crosby Dredging LLC is a fairly new company, looking to expand further into the dredging markets. The firm owns four bucket dredges and four hydraulic dredges. Notably, two of the hydraulic dredges – 18 and 20 foot respectively – were recently built by Ellicott Dredges LLC. The dredges are supported by Crosby Tugs LLC vessels. Beyond this, Crosby intends to build new dredges with Ellicott Dredges LLC, as well as looking to purchase existing equipment in the industry.

Two Ellicott Dredges Working in Latin America

Two Ellicott cutter suction dredges are currently being used in the expansion of a major port in Latin America. This is part of a project to increase the port's container handling capacity and accommodate Post-Panamax vessels. The first Ellicott dredge, a Series 370 with a 300 x 250 mm pump and 440 HP (328 kW) of total installed power, has been working at this port for over six months. This Series 370 dredge was recently joined by a Series 670 dredge, with 350 x 350 mm pump and 800 HP (597 kW) of total power. Both dredges are currently at work deepening the berthing area for the new terminal. The 370 and 670 are portable dredges, yet they are also rugged and reliable – ideal for all types of dredging applications including port dredging. They are the most powerful dredges in this size range. Traditionally, port expansion projects such as this one utilize larger trailing suction hopper dredgers (TSHD) or other self-propelled dredging vessels. In certain cases, smaller, portable cutter suction dredges are a better solution due to their portability, availability, high production and relatively low cost. These advantages of a portable cutter suction dredge also apply to port maintenance dredging, especially when dredging has to be performed on a regular basis.

Eastern Shipbuilding Delivers TRITON to Suderman & Young

Eastern Shipbuilding Group has delivered the Escort Tug TRITON for Suderman & Young Towing Company on December 4, 2015. The series of tugs are currently under construction at Eastern's Nelson Street facility. The TRITON is the first of a series four (4) Z-Tech Class Terminal & Escort Tugs being constructed for Suderman & Young Towing Company. Notably, Eastern is also constructing another identical series of four (4) tugs for Bay-Houston Towing Company. G&H Towing Company is the Owners' onsite Representative and Agent during the engineering, construction and delivery for both Suderman & Young and Bay Houston. G&H Towing Company will operate the vessels after delivery.

Robert Allan, LTD (RAL) of Vancouver, B.C. provided the Z-Tech 2400 Class Terminal & Escort Tugs design and engineering. G&H Towing's fleet currently consists of

eight "Z-Tech" tugs in operation. This "Z-Tech" incorporates the latest technology for escort service and ship assist. Eastern Shipbuilding Group, Inc. has over the years constructed and delivered twenty-one (21) Z-drive tugs of similar size and complexity for several customers in the United States. With these Z-Tech series tugs, Eastern maintains its reputation as one of the largest Z-drive tug new construction shipyards in North America.

Bisso Marine Acquires Derrick/Pipelay Barge

Bisso Marine has acquired an offshore pipelay derrick/pipelay barge, the Global Iroquois. The 400 foot x 100 foot x 30 foot laybarge has performed pipelay operations worldwide and will be renamed Bisso Iroquois. The barge's main tub mounted dynamic revolving crane has a 250 ton capacity and the deck crane is a Manitowoc 4100W Series 2. The pipe handing system is designed to handle for 40 foot pipe joints but can accommodate 60 foot joints with some modifications. The pipe handling system can handle pipe joints weighing up to 38 tons each. The barge is configured with two 220 kip SAS tension machines with a total capacity of 440 kips of tension. The tensioners can pass an 84 inch maximum diameter. The barge is also outfitted with six 75 ton davits. The BISSO IROQUOIS can accommodate 256 persons and features a large galley and dining area, a large theater, several conference rooms, ample client office space, a gym and a three bed hospital. The below deck machinery space houses all ten mooring winches, three main generators providing 7,875 kW of electrical power, 1,200 gallons per hour water making, substantial capacity for fuel, warehousing and dry stores. The barge boasts significant on-board machining and milling capabilities.


Carpenter


Allegretti


McClellan


Elder


Alfultis


Bouchard

Carpenter Named AWO's COO

The American Waterways Operators, the national trade association for the tugboat, towboat and barge industry, has announced that **Jennifer Carpenter**, AWO's Executive VP, has been promoted to the position of Chief Operating Officer. AWO President & CEO **Tom Allegretti** said, "Jennifer's promotion to Chief Operating Officer is richly deserved and fully earned during a quarter century of exemplary service. The journey of advocacy excellence and safety leadership on which AWO has been embarked is one that Jennifer has effectively led."

Crowley Promotes McClellan to VP, Deputy General Counsel

Crowley Maritime Corporation announced that **Kerri McClellan** has been promoted to vice president and deputy general counsel. McClellan joined Crowley two years ago as senior corporate counsel. Previously, McClellan served as a transactional attorney, strategic advisor and compliance counsel at a large law firm. She has a Bachelor of Arts degree from the University of Florida, a Juris Doctor degree from Suffolk University Law School, and a Master of Laws in Taxation degree from Boston University School of Law.

Elder Named XL Catlin Chief Underwriting Officer

XL Catlin has named **Anne Marie Elder** to the role of Chief Underwriting Officer Marine for the Americas region. Elder, who previously held the position of SVP and Chief Underwriting Officer, Inland Marine in North America, assumes the role formerly held by Richard DeSimone. Mr. DeSimone, who joined XL Catlin in 2011 to help build its North America Marine capabilities, retired from the company on December 31, 2015. She is a graduate of the United States Merchant Marine Academy.

Bouchard Receives Honorary Degree at SUNY Maritime

The State University of New York Maritime College conferred the honorary degree of doctor of science degree on **Morton S. Bouchard III**, the president and CEO of Bouchard Transportation Company, Inc., during winter 2016 commencement exercises on January 29. Mort Bouchard is his family's fourth generation to manage Bouchard Transportation Company, Inc., the largest privately owned ocean-going petroleum barge company in the United States. Bouchard Transportation operates on the East and Gulf coasts of the United States and in the Caribbean. "As the highest recognition SUNY can bestow upon an individual, we are so pleased to confer the honorary degree of Doctor of Science upon Mr. Bouchard," said Rear Adm. **Michael Alfultis**, president of SUNY Maritime College. Following the passage of the Oil Pollution Act of 1990, he instituted the country's first double-hull barge construction program. Under his leadership, Bouchard Transportation owns and operates the largest flat-deck double-hull petroleum barge company in the United States.

ABB Appoints Sullivan to Lead U.S. Electrification Business

ABB today announced that **Franklin Sullivan** has assumed the role of executive vice president for its Electrification Products division in the United States. In addition, he assumes commercial leadership for the division across North America (Canada and Mexico). The division runs the low- and medium-voltage products businesses of ABB, for both ABB and Thomas & Betts branded portfolios. Franklin Sullivan joined Thomas & Betts in 2010, after a long career in the electrical products industry, in general management, operations, product management and marketing roles. He has led Thomas & Betts' global sales and marketing activities as a senior vice president, based in Switzerland, for the last two years.

Canaveral Commission Taps Murray as Port CEO

Canaveral Port Authority Commissioners have unanimously selected shipping line executive **Capt. John W. Murray** as the next chief executive officer of Port Canaveral. Murray, currently is the President and CEO of Hapag-Lloyd USA, LLC, a global lin-


Sullivan


Murray


Brennan


Kline


Formas

er shipping company in Tampa that operates about 150 modern container ships and transports more than five million containers per year.

Seaspan's Vancouver Shipyards Appoints Brennan as VP

Seaspan has named **Ian Brennan** as Seaspan's Vancouver Shipyards (VSY) as Vice President, Supply Chain Management & Contracts. Ian has more than 27 years of experience in the shipbuilding and heavy project construction industries, and has worked on a number of major military procurement programs with Aircraft Carrier Alliance, BAE Systems Surface Fleet Solutions Inc. as well as Saint John Shipbuilding Limited. Prior to this, he practiced law for five years in Toronto, Ontario. A graduate of the University of Windsor's Faculty of Law, Ian also holds a Bachelor of Arts from York University.

Kohler Power Systems Promotes Cline, Formas

Patrick Kline has been appointed Regional Manager – Global Marine, Americas, KPS. Patrick has overall responsibility for all Global Marine sales efforts in the Americas. Separately, **Frank Formas** has been appointed MGR-Field Service, Global Marine, KPS. Frank has overall responsibility for product support, channel development, E-Learning, product training development and Application Engineering.


Ayers


Tornga


Raukar


Bauer


Jaenichen

Ayers Joins EBDG as Chief Electrical Engineer

Will Ayers has accepted a position as Chief Electrical Engineer with Elliott Bay Design Group (EBDG) of Seattle. He brings to his role over a decade's worth of experience in marine electrical engineering, which includes extensive use of USCG and class society rules, and all aspects of electrical drawing development with a focus on large, passenger vessels. A graduate of the University of Washington, Will Ayers holds a BS in Electrical Engineering and is a registered Professional Engineer in the state of Washington.

Tornga Named VP, Crowley Stakeholder Relations in Alaska

Crowley Maritime Corporation announced that **Craig Tornga** has assumed the role of vice president of stakeholder relations for Alaska, and will coordinate with all of Crowley's Alaska business units to leverage relevant company relationships. Tornga will relocate from Houston to Anchorage, and continue to report to Rocky Smith, senior vice president and general manager, petroleum distribution and marine services. Tornga began his career with Crowley in July 1977 as an ordinary seaman. In 2011, Tornga was tapped to lead Crowley's new marine solutions group in Houston. Tornga is a past recipient of the Thomas Crowley Award, the company's highest honor.

Raukar Reappointed to Duluth Port Board

The St. Louis County Board reappointed its longest serving Commissioner, **Steve Raukar**, to the Duluth Seaway Port Authority Board for a third term. Raukar also serves as Port Authority president. Raukar has represented the Seventh District on the St. Louis County Board since first being elected in 1988. The Hibbing native was recently elected chair for a fifth and final time during what will be his last year on that board. In 2008, he was elected chair of the Minneapolis-Duluth/Superior Passenger Rail Alliance (NLX).

Jet Edge Promotes Bauer

Jet Edge has announced the promotion of **Josh Bauer** to service manager. Bauer is responsible for managing all aspects of Jet Edge's waterjet service department, supporting customers worldwide. A longtime Jet Edge employee, Bauer began his career with the Minnesota waterjet systems manufacturer in 2005 after graduating from Hennepin Technical College with a degree as a fluid power engineering technician.

Marad Announces Federal Funding Grants for Small U.S. Shipyards

The U.S. Department of Transportation's Maritime Administration (MARAD) announced the availability of $4.9 million in Federal funding to support capital improvements and employee training at small U.S. shipyards. The grants, provided through the Small Shipyard Grant Program, will support efficiency improvements and modernizations that allow U.S. shipyards to compete more effectively in the global marketplace. "American shipyards are currently producing some of the most modern and innovative vessels in the world," said Maritime Administrator **Paul "Chip" Jaenichen**. "They're also creating quality jobs and supporting economic growth in local communities that complement the immense economic impact of our Nation's ports and waterways." The Small Shipyard Grants, which are limited to no more than 75 percent of the estimated improvement costs, are available to U.S. shipyards with less than 1200 production employees. MARAD intends to award grants no later than April 18, 2016.

Duluth-Superior Shipping Season Closes

The Port of Duluth-Superior is welcoming seven ships for winter layup this year. The Indiana Harbor laid up early (on Nov. 3) and a major repowering project is already underway at Fraser Shipyards on the Herbert C. Jackson, in dry dock since early December. The Soo Locks (at Sault Ste. Marie) closed at midnight on Friday, Jan. 15. Four more wintering vessels were expected to have arrived in the Twin Ports before then. In all, seven Great Lakes freighters will be wintering

Herbert Jackson

Photo: Cal Maritime

T.S. Golden Bear

in the Twin Ports this year, where hundreds of workers will spend eight weeks doing maintenance in preparation for the Soo Locks reopening on March 25. The Jackson's conversion is part of $110 million that U.S. vessel operators will spend on maintaining/modernizing ships during this offseason, according to Lake Carriers' Association.

ISM-certified Training Ship Benefits CMA Cadets

Two years after Cal Maritime became the first U.S. maritime academy and training ship to be certified for the International Maritime Safety Management Code, cadets at the academy are seeing the benefits. Prior to any work being done aboard the ship, the cadets – with direction from the faculty supervisor – fill out a Job Safety Analysis (JSA) form, going over every safety detail of the job they are about to start. This brings the element of safety awareness and ownership to the cadets. The cadets also have a voice in the SMS. If they see what they think is an unsafe practice or situation, they can fill out a Safety Observation (SO) form. If needed, the forms can lead to corrective action that takes place immediately. Monthly safety meetings attended by administration, campus facilities, shipboard personnel, waterfront management, faculty and cadets include reviews of all the submitted SO forms.

"We're very proud to have become the first U.S. maritime academy to achieve this milestone," said Cal Maritime President **Tom Cropper**. "It requires

TOTE LNG


Ellicott Dredges LLC

Merchant Marine

constant vigilance and commitment by everyone on campus to maintain a strong safety standard."

TOTE Performs First LNG Bunkering at Jacksonville

On Saturday, January 9, 2016, TOTE Maritime Puerto Rico successfully loaded LNG bunkers aboard the world's first LNG powered containership, MV Isla Bella. Approximately 100,000 LNG gallons transported by 12 TOTE-owned LNG ISO containers were loaded on schedule. The bunkering was conducted under strict US Coast Guard oversight while Isla Bella was also undergoing cargo operations. The LNG was transferred from the ISO tank containers using a specially developed transfer skid developed by TOTE's partner Applied Cryogenics Technologies (ACT) of Houston, Texas. The transfer skid is designed to allow four ISO tanks to be transferred to Isla Bella at once, dramatically reducing transfer time.

Ellicott Dredge: 1000 Day Safety Record, 130 Years of Business

The employees of Ellicott Dredges LLC in Baltimore, Maryland had two big reasons for celebration this past year. First Ellicott's Baltimore plant has achieved an enviable safety record of one thousand (1,000) consecutive working days without a lost time accident. Secondly Ellicott is now celebrating its 130th year of business. Founded in 1885, Ellicott first gained global recognition in the dredge business by building all the dredges used in the original construction of the Panama Canal. Ellicott is now not only the oldest player among dredge builders, but the largest builder of portable cutter dredges.

Bollinger Shipyards Agrees to $8.5 Million DOJ Settlement

Bollinger Shipyards will pay the United States $8.5 million and release contract claims to settle a False Claims Act action filed against it in the Eastern District of Louisiana, the Department of Justice announced in December. The False Claims Act suit alleges that Bollinger misrepresented the longitudinal strength of patrol boats it delivered to the Coast Guard that resulted in the boats buckling and failing once they were put into service. The claims resolved by the settlement are allegations only, and there has been no determination of liability.

Port of Wilmington Approved for $16 Million Dredging Project

The N.C. Coastal Resources Commission unanimously approved a variance Tuesday enabling the N.C. Ports Authority to go ahead with a $16 million dredging project to enlarge existing ships' turning basin to accommodate larger container vessels, according to CRC Chair Frank Gorham. According to the variance materials, the present 1,200-foot turning basin at the Port of Wilmington will be expanded to 1,400 feet so the port can service vessels in the New Panamax class that will be calling on the port in 2016. The project is estimated to take five months. New Panamax vessels are expected to begin transiting the Panama Canal in 2016, and it is the objective of N.C. Ports to be prepared for these vessels by May 2016.

Merchant Marines honored at National WWII Museum

In December, the Ralph E. Crump, LTJG, USNR, US Merchant Marine Gallery opened at The National WWII Museum in New Orleans. This stand-alone 940-square-foot gallery honors the civilian merchant mariners who risked their lives transporting weapons, men, and matériel to US troops overseas. Members of the Merchant Marine were an essential force for the Allied cause, often working together with US Navy or Coast Guard vessels to protect their precious cargo. Through video, artifacts, a model of a Liberty ship, and an engaging array of personal narratives, this exhibit tells their story – including impressive logistical feats, tales of constant danger (and higher casualty rate than any US branch of service), and the role of this hardworking group in transporting 7.3 million American soldiers to support the epic battle fought across the oceans and continents of the world.

Sea-Fire Welcomes New Service Dealers

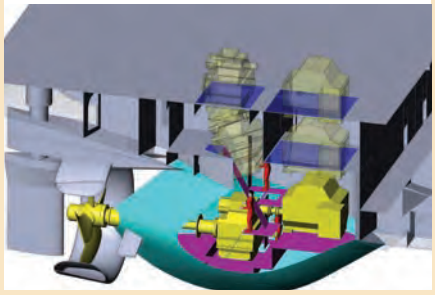
Increasing the availability of its state-of-the-art products, Sea-Fire has signed two new service distributors. KSS Fire Suppression and My Marine Ltd will join the global network of fire detection and suppression providers. For over 45 years, Sea-Fire has been committed to protecting people and property at sea. It designs and manufactures a wide range of innovative marine fire suppression systems for commercial vessels.

www.sea-fire.com

Caterpillar's Twin Fin Propulsion System

Cat Propulsion's twin fin system offers efficiency gains a range of vessel. The short-shaft diesel electric set-up provides fuel and emissions-savings of 30% on board two seismic survey vessels. Well-suited to vessels operating in harsh conditions, notably ice the system's performance is optimized by the two tailor-made fins. If dynamic positioning is required, tunnel thrusters can be attached to the fins or central skeg.

www.MARINE.CAT.COM/pr



ThrowRaft's innovative TD2401

ThrowRaft's TD2401 inflatable throwable PFD is lightweight, and can be stored for easy access. Manually activated to inflate, it auto-inflates when submerged. The ThrowRaft TD2401 is U.S. Coast Guard approved and has created a new standard for inflatable throwable devices in the personal flotation device (PFD) industry. It's a new Type IV throwable device, alongside the square cushion, ring buoy, and horseshoe buoy.

www.throwraft.com

MTG Technology for Cutter, Hopper Dredges

MTG Systems' DMet system is designed to maximize lifecycle of all elements, maintaining the cutter-head operating longer and reducing maintenance. DMET is a hammerless system which ensures maximum productivity in demanding applications and environments. The system includes an easy to use hammerless locking technology, MTG Twist, which comes with a range of self-sharpening designed teeth with optional use of inserts and extra protection.

www.mtg.es

USCG Approval for Hose Reel

The Hiller Companies have achieved USCG approval of their Hose Reels to include SOLBERG ARCTIC 3x3% ATC foam. Adding this Foam Fire Fighting Station approval offers customers a third manufacturer to supply the devices in addition to ANSUL and National Foam. This self-contained unit requires only water pressure and is designed for installation in fixed locations such as processing, storage or handling areas.

www.hillercompanies.com

ESAB Cutting Software with Optimized User Interface

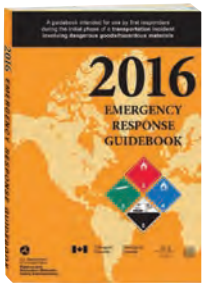
ESAB Welding & Cutting Products' Columbus CAD/CAM Nesting Software version 1.3 is a CAD/CAM programming and nesting software optimized for plasma, oxy-fuel, laser and waterjet cutting. The most powerful function is the Job Wizard, which creates NC programs from customer orders. Job Wizard can quickly, automatically nest all parts on correct plates, as well as assign the best machine to cut based on settings.

www.esab.com

New 2016 Emergency Response Guidebook

It's one of those things you need to have – and hope you never use. The Emergency Response Guidebook, commonly known as "the ERG," is published every four years by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) as an essential reference for first responders during the initial phase of a Dangerous Goods/Hazardous Materials transportation incident.

www.labelmaster.com/2016-erg/lifesaver



THIEVES BEWARE: New System to Protect & Track Outboard Engines

BoatWarden's Outboard Warden protects outboard engines. The patent pending device has two units that must remain within a given proximity of each other. The instant they are parted, an alert is triggered and alarm raised over mobile network. GPS tracking data is used to recover the equipment. Designed to be a 'set-and-forget' system, Outboard Warden's proximity alert is more responsive than a geo-fence.

www.OutboardWarden.com

Statoil's Tank Cleaning Technology

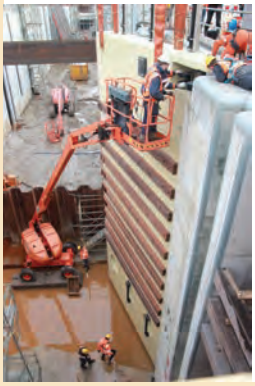
Statoil and M-I SWACO have developed an automatic tank cleaning system for OSV's which means that personnel can avoid entering tanks for cleaning operations. Wash water and soap are recycled so that it is only the actual waste washed out of the tank that needs further processing. OSV's transport chemicals in tanks below deck and those tanks must be cleaned before being used for other assignments.

www.statoil.com

Fiber Reinforced Polymers for Lock Gates

The largest fiber reinforced polymer (FRP) lock gates in the world were recently installed in a new Lock in the Netherlands. Royal HaskoningDHV's FRP mitered gates are strong, light and require very little maintenance. An important sustainable benefit is that the gates have a longer lifetime than conventional gates because FRP's do not corrode and pivot points of gates show little wear.

www.royalhaskoningdhv.com



credit: Glosten / Vigor

Cadmatic for Alaska Class Ferry Design

The Alaska Marine Highway System (AMHS) Alaska Class Ferry project is being designed using Cadmatic software. Cadmatic is a 3D CAD/CAM engineering software system for the marine and offshore industry. The first US customer came in 2013. Since then, other companies from North America have joined the Cadmatic family, including Glosten, Vigor Fab, Genoa Design International, and VT Halter Marine, among others.

www.cadmatic.com

MarineCFO's Document Management System

MarineCFO's Marine Document Management System (MDMS) assists in organizing recordkeeping, assessment, & training verification requirements. MDMS provides an easy to use platform for the creation, organization, dissemination, and editing of various file types for both shoreside and fleetwide reference. Risk Assessments, ISPS Documents, MARPOL Documents, Training Modules, and Operations Manuals can be managed by the Operations Department with appropriate access privileges granted as needed.

www.marineCFO.com

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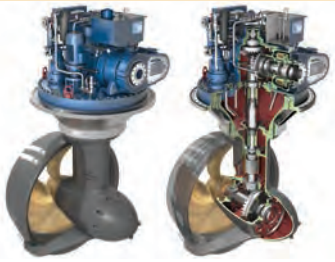


Wärtsilä's Thruster for River, Inland Applications

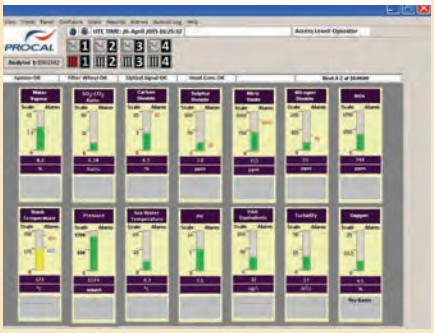
Wärtsilä's WST-14 steerable thruster represents state-of-the-art, ice-classed azimuthing propeller technology for inland waterway vessels. The thruster provides increased reliability and efficiency, while lowering costs. The WST-14 has a compact design, an integrated slipping clutch that provides superior maneuvering when combined with a fixed pitch (FP) propeller, and the ability to service the shaft and steering seals without a complete overhaul of the thruster.

www.wartsila.com

Parker Kittiwake's Procal CEMS for ECA Compliance

Parker Kittiwake Procal's Procal 1200M data gathering system and control unit is designed to collect and process data from marine emissions analyzers Capable of sending and receiving data from devices which monitor exhaust gas scrubbing systems it has three levels of password protection and the unit is also compliant with the security requirements of MARPOL Annex VI.

www.parker.com



Genset Muffler in Tightest of Spaces

Marine Exhaust Systems solves space problem with its new whisper-quiet Series 4 Thinline Wall Pack Generator Muffler. Designed for up to 35 kW gensets, the muffler measures 12x17x4" and its low-profile size makes it ideal for any marine application, and can mounted anywhere on the boat there's room. Its small stature doesn't diminish sound-reducing capabilities and with rubber isolation mounts, it's also vibration-free.

www.marine-exhaust.com

Digital Thruster Takes Worry Out of Docking

Twin Disc's Digital Thruster Panel complements the EC300 Power Commander electronic propulsion control and Express Joystick System (EJS). Engineered for a marine environment, it is ideal for helms, flybridges and docking stations. With fingertip control, owners can effortlessly guide a boat into or away from a crowded dock, providing proportional hydraulic speed control of bow and/or stern thrusters.

www.twindisc.com

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www.fciwatermakers.com

Synchronized Controller Ends Mistimed Wiper Sweep

Windshield wipers that sweep asynchronous can be annoying. Schmitt & Ongaro Marine provides mariners a distraction-free view with its Synchronized Wiper Controller. The unit simultaneously controls one to three motors for synchronized sweep at three speeds. Users can select to wipe all windscreens together or just the helm station. The controller draws a maximum of 5A and is available in 12V or 24V.

www.schmittongaromarine.com

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Position Overview:
Curtin Maritime is seeking a highly motivated, detail oriented professional to fulfill the Project Engineer role. The Project Engineer will report to the Chief Operating Officer (COO) and work closely with the Project Manager in supporting the new project proposal and bid process, as well as post award submittal and plan preparation throughout the projects life cycle.

Job Responsibilities and Duties include, but are not limited to the following:
• Provide support in reviewing, researching, writing and submitting project bids and proposals
• Review plans and other technical documents
• Assist in the development of cost estimates or tentative schedules
• Conduct new project research
• Assist with materials research, purchasing and project support needs
• Review, check and compile information and verify data for accuracy, completeness and compliance according to project specifications
• Assist with project mobilization
• Conduct client communications and updates on an as requested and needed basis

Skills Required:
• Able to read, speak, write, and understand English in person and over the telephone
• Excellent interpersonal, verbal and written communication skills are essential in this collaborative work environment
• Ability to work independently, as well as follow directions and perform tasks
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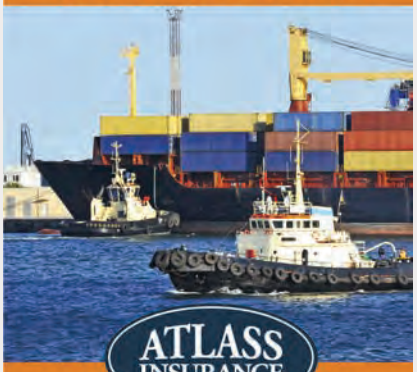

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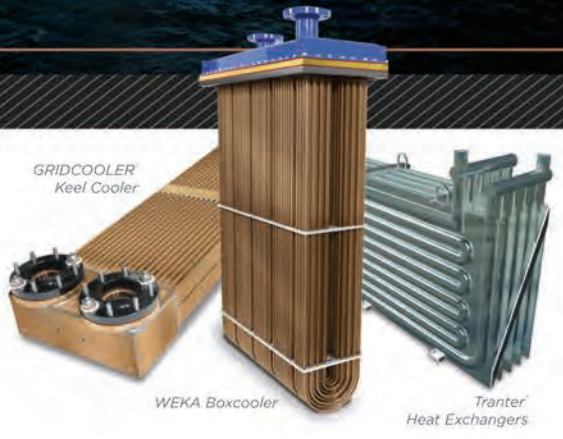

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