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Volume 29 • Number 2

Marine News

FEBRUARY 2018

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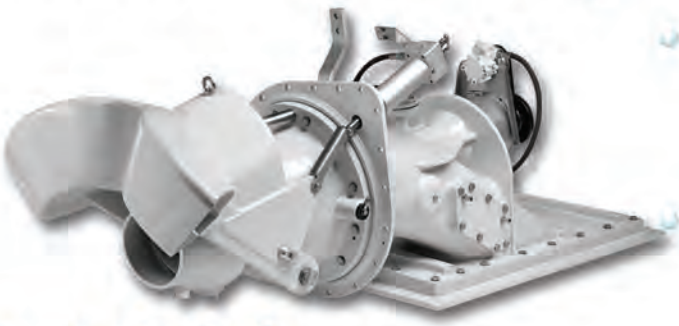

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In late December, Eastern Shipbuilding delivered the Trailing Suction Hopper Dredge, the M/V Magdalen to Weeks Marine; another Eastern repeat client. Magdalen arrived on January 2, 2018, to Southport, North Carolina, and is now working on the protection of Highway 12 in the Buxton area on North Carolina's Outer Banks.

Image credit: Eastern Shipbuilding

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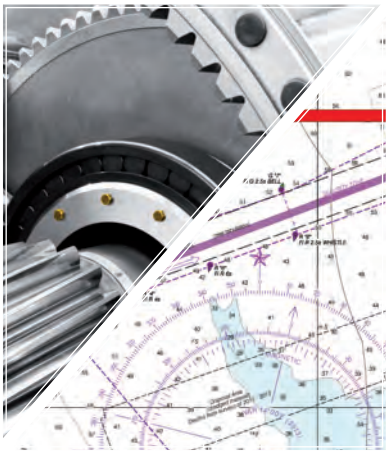

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When it comes to the collective North American waterfront, there are a thousand different voices advocating and clamoring for ten times as many objectives. The reality of the matter is that this cacophony of noise is rarely on the same wavelength and the competing voices drown out the real story that we need to tell – especially when it comes to Jones Act matters and the brown water industry as a whole. Indeed, as an industry, we often do a poor job in telling our story.

The one issue that everyone can and should promote – as one voice – involves the need to properly dredge our waterways and maintain the associated infrastructure. As a maritime nation, there may be no more important challenge facing us today. But, when federal lawmakers can't seem to even keep the government running (as I write, the government shutdown had entered its third disappointing day), the hunt for infrastructure funding sometimes takes a backseat to partisan politics.

It goes without saying that the news about funding for infrastructure and dredging isn't always good. On the other hand, and within this edition, we highlight the good work being done on the Great Lakes and inland waterways by two separate entities. On the Great Lakes, the need to keep a critical, 60-year old marine highway open for business recently got a little help from the federal government. A little further south, the unique statewide oversight of Indiana's three primary ports by just one authority has that Midwest state – also with some federal funding – preparing for increased freight movements and a modernized, multi-modal and connected supply chain. Both stories show us how careful planning and collaboration between unified stakeholders can produce success.

All the planning in the world can't get the job done, though, without the right equipment to make it happen. Fortunately, with companies like DSC Dredge, for example, there's always ways to quickly acquire the right dredge for the right job. As a domestic builder, DSC Dredge is unique in that as much as 50 percent of its output is sold to international buyers. With DSC dredges today deployed to as many as 40 different countries, the firm's ability to both customize its standard offerings for myriad buyers and at the same time compete on an international stage is the kind of story I like to write. It's also one you'll want to read. Turn to page 30 to get started.

How we approach the business of maintaining and upgrading our ports, rivers and harbors has never been more fraught with pitfalls, and at the same time, possibilities. As federal funding uncertainties abound, some (understandably impatient) stakeholders are turning to other resources to get the job done. More than one port, unwilling to wait for Washington to make up its mind, is vowing to move ahead without them. Still others are pondering the controversial, so-called P3 route; one which summons a mixture of public and private investment. Arguably, there's no perfect solution. That said; failure is not an option.

Joseph Keefe, Editor, keefe@marinelink.com

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1600	371	18.3	277	209.4	1800	410	20.2	306	210.0
1400	319	15.7	238	209.2	1500	366	17.2	273	200.3
1200	225	11.3	168	213.3	1200	233	11.6	174	211.8
900	94	5.1	70	230.3	900	115	6.2	85	230.3
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The Domestic Waterfront:
According to DOT's Bureau of Transportation Statistics

The BTS Pocket Guide to Transportation is a quick reference guide to significant transportation statistics. The 20th version of the Pocket Guide now features an innovative smart phone app. The BTS Transportation Statistics Annual Report 2017 is a full length version of these numbers. Together, the two documents shed light on the U.S. transportation situation, especially the marine side. As always, government numbers tend to lag at least two years. *There is good news, and bad news.* Despite the availability of 25,000 miles of navigable waterways, highway passenger travel is up dramatically, while transit ridership (seasonally adjusted) is slightly down. Likewise, U.S. waterways freight including tonnage carried on internal U.S. waterways shows a downward trend. ***By-the-Numbers***, a simplified ten-year trend for the domestic waterfront looks something like this:

Category / Year	2004	2014
Ports	191	183
Cargo Docks	(*)	8229
Lock Chambers	257	239
Non-self-propelled vessels	31,296	31,043
Self-propelled Vessels	8,994	9,039
Oceangoing Vessels	233	179
Recreational Vessels	12,7481,476	11,804,002

'Transportation' was responsible for 39,625 lives lost in 2016 and roughly 2.48 million nonfatal injuries in 2015. All modes of transportation consumed about 71 percent of total petroleum consumption in the United States, creating 27 percent of total U.S. greenhouse gas emissions. There are more than 8,200 U.S. water transportation facilities, including cargo handling docks. Of these, the vast majority (6,100) handled domestic cargo only – or in other words, Jones Act trades. About 69 percent of cargo-handling facilities are located on the coasts, with the remaining 31 percent situated along the Great Lakes or inland waterways. These are served by a fleet of 40,500 domestic vessels—31,500 barges and 9,000 self-propelled vessels, including more than 3,000 towboats used to move the barges.

Dams and navigation locks are the principal infrastructure features of U.S. domestic waterways. The principal exceptions are the Lower Mississippi and Missouri Rivers, which are free-flowing but still require hydrologic structures to manage the river flow and preserve navigation. The U.S. Army Corps of Engineers (USACE) owns and operates 239 lock chambers at 193 sites, which account for most of the U.S. inland navigation locks. The average age of all locks is over 64 years. Even adjusted for dates of major rehabilitation projects, their collective average age is still more than 50 years. The relationship between lock age and performance – tow delay and chamber downtime – is telling. For example, the Emsworth Lock on the Ohio River is one of the system's oldest structures and is considered functionally obsolete in that it handles tows longer than its 600-foot design limit. It has lock chambers designed for vessels of an earlier era and has lengthy out-of-service delays.

Newer locks on the Ohio River are 1,200-feet long and have low average tow delays and only short-duration service outages. Lock 52 on the Ohio River, located 23 miles upstream from the confluence of the Ohio and Mississippi Rivers, is the busiest and one of the oldest, with chambers that are 47 and 88 years old, respectively. It had one of the higher average tow delays in the inland waterway system in 2016 (3.7 hours).

On the Upper Mississippi River, the Melvin Price Lock, Locks 52 and 53 will be replaced by the new Olmsted Lock, which is under construction. St. Louis, MO, has the two newest lock chambers, seeing 60 million tons of freight annually with moderate delay and downtime. The Inner Harbor Navigation Lock in New Orleans is one of the principal bottlenecks in the Gulf Intracoastal Waterway. The small chambered, 94-year-old lock experiences average tow delays exceeding 16 hours.

Although outages have decreased, the hours of downtime increased in 2016. Maintenance and unexpected weather/operational issues resulted in almost 144,000 hours of lock shutdowns, 90 percent higher than the 2000 level. On older systems, the majority of tows must be split and locked through smaller lock chambers, which were not designed to handle today's longer 1,200-foot tows. Delays will likely increase in the absence of needed rehabilitation and reconstruction of key locks. In 2016 barge tows experienced an average lock delay of 2.4 hours, double the delay in 2000. The percent of vessels that experienced delays increased from 35 to 48 percent, impacting 360,000+ vessels. 9 of every 10 vessels on the Gulf Intracoastal Waterway experienced more than 1 hour of delay in 2016, and more than half of the vessels navigating a lock in the Tennessee River experienced close to 4 hours of delay.

Central to this edition of ***MarineNews***, the key characteristic of navigation channels that relates to condition is whether the authorized channel depth is available. Nearly all channels need periodic dredging to maintain

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authorized depth. Most channel dredging occurs under the auspices of the USACE. In 2015, USACE dredges removed 186 million cubic yards of material, matching 2014 totals, but down from 197 million cubic yards dredged in 2013. Maintenance dredging accounted for 89 percent of the removed material; the average cost per cubic yard increased 4.7 percent to $5.58, a 41 percent increase over the 2013 cost. 2015 marked the third consecutive year that the total material dredged fell below the 238 million cubic yards dredged in 2012; a drop of 22 percent over the 3-year period. *That's not good news.*

Table 1-9 provides age distributions of U.S. flag vessels for 2000 to 2015; a fleet that got younger over that period. That's not surprising given the Jones Act building boom that has slowed, but not yet ended. The percent of vessels younger than 16 years increased from 34 to 44 percent. Builders can take hope in the fact that inland towboats and barges represent 85 percent of U.S. vessels and that towboats are the oldest with 66 percent are older than 25 years. Nevertheless, barges are among the youngest vessels due to retirements and replacement of older dry cargo barges and acquisition of new tank barges, thanks largely to the Oil Pollution Act of 1990 that mandated double hulls for certain vessels.

Finally, highway traffic congestion levels have increased in all urban areas over the past 30 years. Urban highway congestion cost the economy $160 billion in 2014, of which 17.5 percent, or $28 billion, was largely due to congestion that affected trucks. **BTS didn't say it, but we will:** *the increased use of ferries and marine highways is the clear route to reducing this highway – and rail – congestion to manageable levels.*

TABLE 1-9 Water Transportation System: 2000, 2010, 2013, and 2014

	2000	2010	2013	2014
U.S.-Flag privately owned merchant fleet (1,000 GT or over)	282	221	187	179
Recreational boats, millions	12.8	12.4	12.0	11.8
Lock chambers	276	239	239	239
Lock sites	230	193	193	193
Waterway facilities (including cargo handling docks)	9,309	8,060	8,231	8,229
Ports (handling over 250,000 tons)	197	178	182	183
Miles of navigable waterways	25,000	25,000	25,000	25,000
Average age of locks, years	50.2	59.5	62.5	63.5
TOTAL, U.S.-flag Vessels	**41,354**	**40,512**	**39,999**	**40,082**
Barge/non-self-propelled vessels	33,152	31,412	31,081	31,043
Self-propelled vessels	8,202	9,078	8,918	9,039
Age of U.S.-flag vessels, percent				
< 6 years old	19.6	18.5	19.3	17.7
6 to 10 years old	9.2	11.5	12.1	14.1
11 to 15 years old	5.1	17.0	14.3	12.4
16 to 20 years old	19.6	8.7	13.6	15.1
21 to 25 years old	18.3	4.2	7.7	8.3
> 25 years old	27.7	39.3	32.6	31.9

KEY: GT = gross tons.

NOTE: *U.S.-Flag privately owned merchant fleet* includes only oceangoing self-propelled, cargo-carrying vessels of 1,000 GT and above. Total, Vessels includes unclassified vessels. CFR 33 Part 329 defines the mileage of navigable waterways of the U.S.

SOURCES: **Fleet**: U.S. Army Corps of Engineers. Waterborne Commerce Statistics Center. Navigation Data Center. *Waterborne Transportation Lines of the United States* (Annual issues). Available at http://www.navigationdatacenter.us/ as of May 2016. **Recreational boats**: U.S. Department of Homeland Security. Coast Guard. Recreational Boating Statistics as cited in USDOT. BTS. National Transportation Statistics. Table 1-11. Available at http://www.bts.gov/ as of May 2016. **Waterways and Vessels**: U.S. Army Corps of Engineers. Institute for Water Resources. Navigation Data Center. **The U.S. Waterway System**: Transportation Facts and Information (Annual issues). as cited in USDOT. BTS. *National Transportation Statistics*. Tables 1-1 and 1-11. Available at http://www.bts.gov/ as of May 2016. **Locks, Facilities, and Seaports**: U.S. Army Corps of Engineers. Institute for Water Resources. Navigation Data Center. General Characteristics of Locks, and The U.S. Waterway System: Transportation Facts and Information (Annual issues). Available at http://www.navigationdatacenter.us/ as of May 2016.

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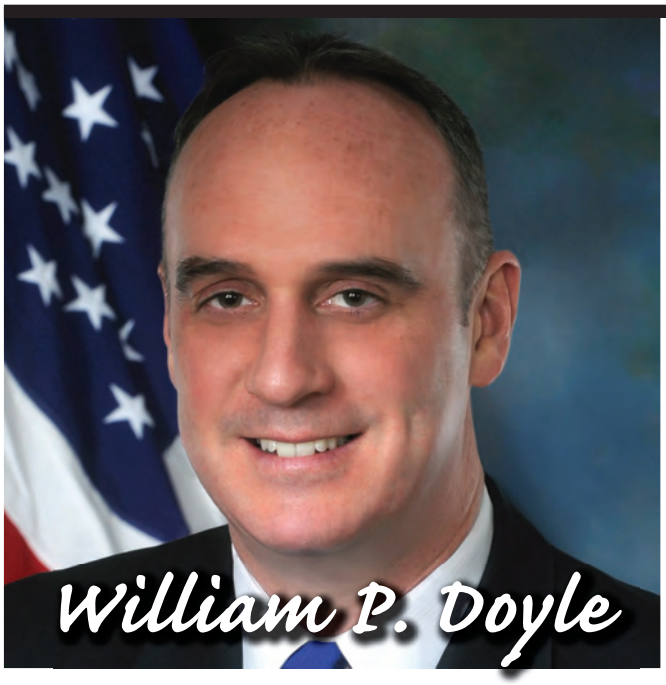


CEO & Executive Director, Dredging Contractors of America (DCA)

William P. Doyle is the new CEO & Executive Director of the Dredging Contractors of America (DCA). Twice a U.S. Senate confirmed Presidential appointee to the U.S. Federal Maritime Commission (FMC), Doyle has, over the course of a long and celebrated career, worn many prestigious hats. Prior to his FMC appointment, Mr. Doyle served on cabinet and executive level boards and committees under both the Obama and George W. Bush Administrations. Before that, he served as an officer in the U.S. Merchant Marine as a U.S. coast Guard licensed marine engineer aboard numerous classes of vessels.

During his tenure at FMC, he participates in discussions on certain bilateral shipping matters with other countries including Canada, Panama, Greece, Netherlands and other countries in the European Union. He represented the FMC and co-chaired the U.S.-China Bilateral Maritime Consultations where he met with officials from the People's Republic of China regarding maritime shipping matters such as tax policies affecting U.S. interests in the U.S.-China trade. Closer to home, Doyle has worked to address port congestion matters, ocean carrier alliances, industry consolidation and helping to find solutions that expedite the movement of cargo through the transportation system.

A graduate of the Massachusetts Maritime Academy with a BS in Marine Engineering, he is also an attorney and a graduate of the Widener University Commonwealth School of Law. Doyle has, at one or another worked from all sides – and at all levels – of the maritime equation, and understands what it takes to make things happen. Hence, his recent appointment as DCA's CEO and Executive Director isn't surprising. Nor will anyone be surprised by what he accomplishes in his new role. Listen in this month as he wades into the complicated, but critically important world of domestic dredging.

The Dredging Contactors of America's (DCA) recently named you as its new Executive Director and Chief Executive Officer (CEO) in December. Congratulations. Tell us about the new job and your responsibilities.

I started on January 3, 2018. The DCA is a non-profit trade association that represents the interests of the U.S. dredging and marine construction industry and its members for over 30 years. DCA members improve the quality and responsiveness of dredging service delivery to the United States of America, ensuring that America's ports, waterways, wetlands and beaches are efficiently constructed and maintained in an environmentally sustainable manner using innovative methods and American ingenuity. DCA serves as a vital resource to various other maritime industry groups for dredging expertise, both in Washington and across the country. It is a respected industry partner for its ability to bring together a broad base of industry stakeholders and decision-makers to engage in open forums and continue the discourse concerning policy issues important to the industry as a whole. As CEO & Executive Director, I am going to raise the profile of the dredging and marine construction industry and help tell their story. The member companies of the DCA are true American companies, who hire American workers, buy U.S. manufactured equipment and build their dredges, barges and tugs in U.S. shipyards.

You've had a variety of roles in the maritime industry – a mariner, an attorney, and as a federal regulator – arguably the perfect preparation for your current billet. But, your tenure as a Commissioner with the U.S. Federal Maritime Commission might be the most valuable. Tell us a little about the insight you gained at FMC and how you can leverage that in your new role.

The Federal Maritime Commission opened me up to the entire international world of shipping. It was definitely a

learning experience. I did not know as much as I thought I did about the maritime transportation and logistics system. It's a very complex global system. At FMC, we regulated the international side of shipping – foreign flag ocean carriers, ocean transportation intermediaries, ports and maritime terminal operators. That said, I was a Commissioner who made sure the U.S.-Flag operators and American-based service providers in the U.S.-domestic trades were not harmed by the ocean carrier alliances. I fought vigorously, and won, in defending the U.S.-flag tug and barge industry from being subject to the collective market power of foreign flag ocean carriers joining together to drive down the rates of towing and tug assist companies. I have built solid relationships with CEOs and Executive Directors of the ports around the country. I am going to work closely with Port Authorities and make sure the DCA is a value added team player with all ports. With the states providing more funding directly for dredging projects, it is important to keep and continue developing relationships with port CEOs and Executive Directors.

As you kick off your new role, you've been described by DCA directors as "the right person to guide our industry association on an exciting journey forward." Tell us about what direction you intend to take DCA, and why.

I have a powerful voice. I can tell a story. I have spent my entire adult life in the maritime, engineering and regulatory sectors. When putting together that experience, a powerful voice and a story that is true and one that I really believe in; the sky is the limit. I am going to ensure that policy and decision makers understand the economic, national security, and environmental importance of the work performed by the U.S. Flag dredging industry on our coasts and waterways at the federal, state and local levels. When our coastal and inland waterways and communities are decimated by hurricanes, super-storms and Nor'easters, it is U.S. dredging companies that answer the call – deepening and maintaining our channels and harbors, replenishing our beaches, rebuilding our wetlands and barrier islands, and allowing our ships to transit and our families to enjoy outdoor conservation and recreational activities. The U.S. dredging companies and their mariners are true patriots. When the 2017 hurricane season ravaged Puerto Rico, the Caribbean, Texas, and Florida, the U.S.-flag dredging and marine companies immediately made available their dredges to open our waterways and protect our shores and their tug boats and barges to deliver goods for humanitarian relief.

Give your sense of the state of the U.S. Flag dredging and maritime community and the dredging industries role. What will be Job 1 on your plate?

The U.S.-flag dredging industry is in the midst of recapitalizing its fleet. That said; there are foreign flag interests who desire to destroy the coastwise trade. The Merchant Marine Act has been around since 1920. The U.S. dredging companies comply with the Merchant Marine Act, and I intend to fight for their interests in the coastwise trade. Our dredging companies invest in America.

Let's take a look at just a few of the recent capital investments in the U.S.-flag dredging industry, happening in 2017 alone:

- *On December 22, 2017, Weeks Marine's new Hopper Dredge the MAGDALEN successfully completed sea trails. The ship was built in Florida's Eastern Shipbuilding Group.*
- *On November 27, 2017, Florida's Eastern Shipbuilding Group delivered Great Lakes Dredge and Dock Company's new Dual Mode Articulated Tug/Barge (ATB) Trailing Suction Hopper Dredge to Great Lakes Dredge & Dock Company, the DOUGLAS B MACKIE*
- *In October 2017, Conrad Shipyard of Louisiana announced on that it has been awarded a contract to build nine barges - four anchor barges, two deck barges, and three crane barges for Great Lakes Dredge & Dock Company.*
- *In July 2017, Weeks Marine announced that its new cutter suction dredge, the JS CHATRY construction is underway in Belle Chase, Louisiana at C&C Marine and Repair.*
- *In April 2017, Louisiana's Halimar Shipyard LLC in Morgan City, launched Manson Construction's new Cutter Suction Dredge ROBERT M WHITE.*
- *Weeks Marine built 12 scow sand barges this year in Corn Island Shipyard, Inc., Grandview, Indiana., and C&C Marine & Repair, Inc., Belle Chase, Louisiana.*

Does the USACE have the resources they need from Congress and the Executive branch to accomplish their missions?

I cannot answer for the Corps. There is still a dredging backlog around the country that additional funding could help resolve. We're very pleased to see that President Trump's FY18 was 10% higher than FY17. The House and Senate also proposed increases on top of the President's proposal, bringing the funding levels up to around $6 Billion. That said; everyone is working under a continuing resolution right now with respect to funding. The DCA works with Congress and the Administration providing useful information in anticipation of an important omnibus funding legislation.

Give us a few of the most pressing dredging priorities that need to get accomplished here in the United States; soon rather than later.

We need to continue with the port and channel deepening projects. The ocean carriers have tripled the size of new vessels rolling off the blocks over the past 10 years. With the expanded Suez and Panama Canals now fully operational, larger ships are visiting U.S. ports. We need dredging to allow these new and larger vessels the ability to safely berth at the nation's marine terminals. Separately, we have an ongoing and important focus on coastal restoration in Louisiana. Beyond that, DCA members will help repair (to pre-storm conditions) U.S. Army Corps projects impacted by Hurricanes Harvey, Irma and Maria – and now perhaps the Bomb Cyclone that hit Mid-Atlantic, New York and New England in January 2018.

We give harbor and blue water dredging a lot of attention. Let's shift gears and talk about inland waters. How are we doing as a nation in allocating the necessary resources to get inland dredging done?

The inland waterway system is a major focus for the Army Corps. It's important and the budgets have hovered under a billion dollars until 2018. The inland navigation budget includes allocations for investigations, construction, operations and maintenance (O&M), and the Mississippi River &Tributaries (MR&T). If we take a look at the allocations over the past few years, the Army Corps' agency budget for "inland navigation" looks something like this:

Fiscal Year	Allocation (Billions $)
FY 2018	1.01
FY 2017	0.917
FY 2016	0.974
FY 2015	0.834
FY 2014	0.904

One of your most important duties, according to DCA, will be to ensure that policy and decision makers understand the economic, national security, and environmental importance of the work performed by the U.S. Flag dredging industry. You know your way around the Hill: how much time will you be spending there going forward?

I am very comfortable working on Capitol Hill. I have a good reputation as a straight-shooter. With that, the Jones Act has come under heavy fire from outside interests this past year. I am going to counter balance that notion with facts and the DCA will be more involved as an association educating the House and Senate on the dredging industry's role.

What's the most significant challenge to the USACE in 2018 – is that aligned with your biggest priority?

I am not in a position to actually speak about what the Corps thinks is their biggest priority. However, the DCA can say that the Navigation Program is the Corps' largest program. Approximately 42% of the Civil Works budget is the Navigation Program. Nevertheless, and at current funding levels, the backlog continues to grow both in O&M and new work. The U.S. dredging companies have more than enough capacity to meet the needs of the Army Corps. If the budget were increased to allocate funding for even more projects, our dredging companies would certainly answer the call.

Digging out the Small Ports and Harbors that serve as the on-ramps to the maritime super highway is important work. For example, the 12,500 miles of the domestic inland system is not simply the largest in the world – it is bigger than the rest of the worlds' waterways combined. Do we need to be spending more on inland infrastructure to complement all of that post-Panamax work underway in deep draft harbors?

The DCA supports in investment in the inland waterway system. Our companies are there to do whatever needs to be done by way of dredging.

By the numbers, FY 2015 in the U.S. – according to the USACE – 34% of all dredging could be attributed to Channel Deepening. Has this number changed appreciably in 2016? If so, why?

Actually in 2015 it was only 17.6% and in 2016 it was 7%. The decrease is due to a lot of new work being funded directly by the ports at the state level rather than by the federal government. A good example of this is when Florida allocated state funding for the Port of Miami dredging and marine construction work.

In contrast, and in FY-2015, (again according to USACE) 86 PCT of domestic dredging was performed by private contractors and 89% of that was deemed 'maintenance' dredging. Has that metric changed much?

It was 78% in 2016, and Superstorm Sandy rebuilding efforts and needs accounted for the slight drop.

Dredging and infrastructure may therefore be the most important issue on the plate of ANY marine organization as calendar year 2018 kicks off into high gear. Would you agree?

Yes, I absolutely agree!

AIWA:
A National Asset Worth Funding

What does the future hold for infrastructure investment on the Atlantic Intracoastal Waterway in 2018?

By Brad Pickel

Pickel

The Atlantic Intracoastal Waterway Association (AIWA) is a non-profit, membership organization for one of the nation's longest water infrastructure projects stretching over 1,100 miles- the Atlantic Intracoastal Waterway (AIWW). We are grateful to serve as the one unified Voice of the Waterway and below is our outlook for 2018.

In the President's Budget for 2017, the AIWW began the appropriations process with only $6.911 million for the entire waterway. This amount was $7.02 million less than the final amount appropriated for the waterway in 2016. In response to the President's FY17 budget, the AIWA requested that Congress increase funding for the U.S. Army Corps of Engineers (USACE) to perform Operations & Maintenance (O&M) of Inland Waterways and Small, Remote and Subsistence Navigation, both of which could be used to fund maintenance dredging projects in the AIWW. We are pleased to report that Congress increased the amount of federal funding available to these two categories of projects by $46.5 million and $49 million, respectively. The allocation of these additional dollars was determined by USACE through development of their annual work plan.

In the USACE final work plan, the AIWW received a substantial increase in the amount of funding available for waterway maintenance as the original amount from the President's budget more than doubled from $6.911 million to over $15.6 million. In addition, the AIWW was eligible for an additional $32+ million for recovery efforts linked to hurricane impacts in 2016. All these funds are being used to conduct maintenance dredging projects in EVERY state along our marine highway.

Additionally, we worked with our partners at the U.S. Army Corps of Engineers to secure an updated assessment of O&M needs for the AIWW. This planning tool helps us determine the funding baseline for the AIWW and we request updated information on the following categories on an annual basis:

- *The anticipated cost to return the waterway to the authorized dimensions through dredging because of backlog maintenance.*
- *The annual cost of O&M of the AIWW assuming*

Credit: AIWA

the channel has been fully dredged in the past to the authorized length, width and depth.

- *The amount of O&M funding received in the current fiscal year.*
- *The amount of O&M funding in the President's Budget for the upcoming year.*

Based on current information for 2017, the estimated cost to return the AIWW to its authorized dimensions because of backlog maintenance needs would be about $106 million. Once the waterway is returned to its authorized dimensions, it was estimated to cost approximately $50.5 million in annual maintenance dredging. These estimates do not discriminate between federal and non-federal monies, but are an estimate of overall need for the entire 1,100 miles. We believe that the most critical shoaling areas can be addressed with a concerted federal and non-federal funding effort, and the backlog amount reduced to a number more in line with the annual maintenance needs.

Moving forward into 2018, we have increased opportunities to raise awareness and secure additional funding for the waterway. The AIWW is already included in the President's 2018 budget for over $14.4 million, which is an increase of more than 100% from the President's budget in 2017. This is more than has been budgeted for the waterway in more than ten years. To date, the final 2018 dollars have yet to be appropriated as Congress continues to pass Continuing Resolutions (CR) with the current CR expiring in January.

Once the final appropriation bills are passed, the AIWA will focus on supporting the expenditure of all appropriated monies for waterway maintenance. We must not be satisfied with only securing funding for the waterway, but must also support project execution through being an active stakeholder.

In our stakeholder role, we have been actively supporting USACE in trying innovative approaches to waterway maintenance. One such effort underway is a beneficial use dredging project near Jekyll Island, Georgia where a portion of the material removed from the waterway will be placed in an upland marsh site on Jekyll Island. This is an exciting opportunity as we have limited confined disposal areas in Georgia, and other states along the waterway. We are also continuing to partner with other water infrastructure organizations to ensure that the AIWW is considered as a viable piece of an interconnected marine transportation system. We look forward to continuing those efforts this year. We stand ready to participate in any additional challenges and opportunities that arise for the AIWW in 2018.

Brad Pickel *is the Executive Director of the Atlantic Intracoastal Waterway Association. In addition to the AIWA, Brad has experience in water resources management and advocacy from previous employment with a Washington, D.C.-based lobbying firm, and overseeing coastal management issues for a Florida community for over 15 years. Brad is also a board member and Executive Committee member for the National Waterways Conference, Inc.*

Editor's Note

As noted above, AIWA stretches some 1,100 miles up and down the U.S. East Coast, much of it paralleling in close proximity to the north-south, heavily congested Interstate 95 highway. The potential for a properly dredged and maintained AIWA to create a viable and robust marine highway – an excellent alternative to I-95 for many intermodal freight options – is virtually unlimited. We can only hope that Mr. Pickel and his colleagues find success in this worthy endeavor.

The Jones Act and U.S. Offshore Wind Power:

The Implications of the Jones Act on the Development, Operation and Maintenance of Offshore Wind Farms in the United States.

By John F. Imhof Jr.

Imhof

After years of planning and some unsuccessful attempts, offshore wind power developers finally have their first success in the United States. The Block Island Wind Farm, a thirty-megawatt wind farm located just off the coast of Rhode Island, began operations in December 2016, fulfilling the goal of the project's developer, Deepwater Wind LLC, to build America's first offshore wind farm. The Block Island Wind Farm consists of only five wind turbines and is tiny in comparison to the large offshore wind farms operating off the coasts of Europe, but Deepwater Wind is planning larger wind farms off the coasts of New York, Massachusetts, Rhode Island, Maryland and New Jersey. Other developers are doing the same with other projects up and down the East Coast of the United States.

The Jones Act and the Passenger Vessel Services Act

Affecting how these wind farms are being planned and built is a little-known but controversial law: The Jones Act, originally enacted as part of the Merchant Marine Act of 1920, regulates the carriage of merchandise between points in the United States, commonly called "coastwise trade," and generally requires that a vessel may not provide any part of the transportation of merchandise by water, or by land and water, between points in the United States to which the coastwise laws apply, either directly or via a foreign port, unless the vessel is wholly owned by citizens of the United States and has been issued a certificate of documentation with a coastwise endorsement by the United States Coast Guard (the "USCG") or is exempt but would otherwise qualify for such a certificate and endorsement. A coastwise endorsement may only be issued to a United States flagged vessel that, with limited exceptions, was built in the United States. The Passenger Vessel Services Act similarly restricts the transportation of passengers between points or places in the United States to vessels built in and owned by citizens of the United States.

The penalties for violating the Jones Act can be severe, including forfeiture of the merchandise transported or a monetary amount equal to the greater of the value of that merchandise or the cost of the transportation. The penalty for violating the Passenger Vessel Services Act is a fine of $300 per passenger transported and landed. The laws are otherwise similar enough that, for the purposes of the remainder of this article, they are collectively referred to as the Jones Act. United States Customs and Border Protection ("USCBP") enforces the Jones Act, but relies on the USCG to determine vessel eligibility for United States coastwise trade, including whether vessels are built in and owned by citizens of the United States.

For the lifetime of the Block Island project, Atlantic Wind Transfers, using the Jones Act compliant and Blount-built Atlantic Pioneer, will provide crew and equipment transfer services to meet these key logistical requirements.

Credit: Blount Boats

So how does the Jones Act affect the development of offshore wind farms in the United States? Offshore wind farms are just that, offshore, and nothing in the Jones Act appears to restrict the transportation of merchandise or passengers between United States ports and offshore wind farms.

The Territorial Sea and the Outer Continental Shelf Lands Act

USCBP has repeatedly ruled that points in United States territorial sea are points in the United States for the purposes of the Jones Act. The territorial sea is defined as a belt, three nautical miles wide, seaward of the territorial baseline (typically the coastline) and to points located in internal waters, landward of the territorial sea baseline. Documents filed with USCBP suggest that the Block Island Wind Farm is located in the territorial sea.

But developers are planning bigger projects even further offshore, on the outer Continental Shelf of the United States (the "OCS"), where the winds are stronger and more constant. The Outer Continental Shelf Lands Act provides that the laws of the United States, including the Jones Act, extend to the subsoil and seabed of the OCS, and all installations and other devices permanently or temporarily attached to the seabed, which may be erected thereon for the purpose of exploring for, developing or producing resources therefrom. As a result, the Jones Act extends to drilling rigs and platforms sitting on or attached to the seabed of the OCS for the purpose of exploring for, developing or producing oil or natural gas. It is less clear whether the Jones Act extends to a wind turbine on a tower attached to the seabed of the OCS because it is unclear whether the turbine is developing or producing natural resources from the seabed, but many developers are taking a cautious approach and assuming that it does.

The Effect of the Jones Act on Offshore Wind Farms in the United States

The Jones Act complicates the construction, operation and maintenance of offshore wind farms in the United States because it generally requires merchandise and passengers to be moved between a port in the United States and towers attached to the seabed of the territorial sea or possibly the OCS, or between these towers, using vessels built in and owned by citizens of the United States. The wind power industry in Europe has used purpose-built wind turbine installation vessels ("WTIVs") to build offshore wind farms for years, but few, and most likely none, of these vessels were built in the United States.

Offshore wind farms can also be built using Jones Act qualified vessels built for other purposes, but these vessels may not be as efficient or reliable as purpose-built WTIVs, especially in rougher or deeper waters. A study concluded in October 2017 found that offshore wind farm development in the United States could eventually support the construction of multiple WTIVs in the United States, and plans were announced earlier in 2017 for the construction of a WTIV in the United States, but it remains uncertain whether the number of offshore wind farms needed to support a Jones Act qualified WTIV will actually be built.

A Jones Act qualified WTIV could also be used in other applications, including the construction of wind farms in Europe and the decommissioning of oil and gas installations on the OCS, but the higher cost of building WTIVs in the United States may make it too expensive for use outside of the United States and it may not be as efficient in other applications as vessels built for those applications. Until a sufficient number of Jones Act qualified WTIVs are actually built and enter service, offshore wind farm developers may need to look to other possible solutions.

So how can developers work around these problems? Most proposed solutions employ a combination of Jones Act qualified and non-Jones Act qualified vessels. Turbines located at a United States port could be transported to a tower on a Jones Act qualified vessel and installed by a non-Jones Act qualified specialized WTIV. This process, or something like it, may have been used at the Block Island Wind Farm.

Alternatively, turbines could be shipped from outside the United States on foreign-flagged vessels scheduled to arrive directly at the wind farm just in time to be installed by a non-Jones Act qualified WTIV. In each case the process works as long as the operators of the WTIV and any foreign-flagged vessels are careful not to transport merchandise or passengers between towers, between a tower and a port or other point in the United States, or between any such ports or points. Other solutions may also be possible, but whether any solution, including any of those described above, complies with the Jones Act always depends on the facts of the situation.

Until a sufficient number of Jones Act qualifying WTIVs can be built in the United States, offshore wind farm developers and operators may need to be resourceful in how they comply with the Jones Act.

John F. Imhof Jr. *is a Partner in the New York office of Seward & Kissel LLP focusing on maritime, transportation and energy finance. John's experience includes advising lenders to and investors in the owners of Jones Act qualified vessels and offshore wind power projects. Kristy Choi, a Law Clerk in the New York office of Seward & Kissel LLP, contributed to this article.*

Managing the Big Risks of Marine Construction

A busy market, fraught with risk, needs specialized protection.

By Stephen Clark and Mike Perrotti


Clark


Perrotti

The marine construction business is booming in the United States for many reasons. Nationwide, ports are expanding, deepening their channels to accommodate the bigger, so-called post-Panamax vessels. And, that means more than just deepening the channel. Docks, piers, cranes and other shoreside infrastructure need to be bolstered in order to stand up to heavier vessel impacts. Other infrastructure and bridges also need updating to be brought into the 21st century.

Separately, a growing recreational boating population is prompting marinas to expand their footprint to accommodate bigger yachts and other pleasure craft. And an active 2017 hurricane season left in its messy wake the requirement to rebuild docks and other structures along impacted waterways.

But these are only part of the reason that marine contractors' workload is heavy these days. Marine contractors' expertise and skill are also continuously in demand for small construction and maintenance jobs to keep US traffic moving. When construction is in or near water, it very likely involves specialized marine contractors whose knowledge and experience are invaluable. Marine contractors are tasked with performing some very risky work; therefore, protecting their property and assets requires considerable attention to managing on-the-job exposures.

Water, Waves and Weather

Marine contracting is not for the faint of heart. It ranks up there as one of the most hazardous occupations in the workforce. Just consider a marine contractor's environment. Working on or near water poses more slip or fall risk. Contractors can be swept off their feet by wave action, tide action, strong currents or swell from passing water traffic. And these conditions can change quickly, especially when adverse weather kicks in, increasing dangers that maritime construction workers face daily.

According to the US Bureau of Labor Statistics, data collected from 2011-2015 revealed that the most injuries in the marine construction industry resulted from:

- *Overexertion*
- *Slips, Trips and Fall*
- *Contact with Objects or Equipment*
- *Transportation incidents*

Fortunately, OSHA offers guidance to help marine contractors address and minimize some of these workplace exposures. Operating heavy equipment on land can be challenging enough. Operating large heavy equipment, often on workboats and swaying with a waterway's current, has its own unique risks. These include mechanical damage from fatigue failure of machinery to wear and tear, sinking, improper ballasting, overstressing of motors and pumps, and more.

Another risk for marine contractors is third party liability. Their operations share the waterways with a growing volume of vessels. Marine contractors' vessels are restricted in their navigation because of the work they perform, often working at a fixed location, such as a bridge. The exposure to collision while working around the clock, especially at night, is significant. Proper lighting assures that they are seen.

Tight on Talent

Only a few years ago, the whole construction industry was in a slump. As a result, many left the construction industry to pursue other fields. This resulted in a shortage

of skilled workers, which has been exacerbated by recent rebuilding efforts after like Hurricanes Harvey, Irma and Maria. Given the specialized work performed by marine contractors, the strain of the talent shortage is even greater. This is a top risk management concern. A shrinking workforce translates to severe gaps in experience. Inexperience poses significant risk, especially in the challenging marine work environment.

Inclusive Insurance

Given the hazardous working conditions and the unique equipment, insurance protection is essential. It must directly address the diverse, day-to-day exposures marine contractors face. Contractors' insurance is often consists of such coverages as:

- *Marine General Liability includes coverage for products and operations liability for work performed from watercraft.*
- *Marine Contractors' Liability provides coverage for property damage to marine structures.*
- *Commercial Hull and Protection & Indemnity (P&I) protect vessel owners against physical damage to the ship and legal liability.*
- *Bumbershoot (umbrella) provides excess liability coverage for companies with major marine exposures. Such policies cover both non-marine and maritime liability exposures—that is, protection and indemnity, general average, collision, general liability hazards, among others.*
- *Builder's Risk and Installations includes materials, labor and reasonable overhead and profit*
- *Contractor's Equipment provides broad coverage*

"Another risk for marine contractors is third party liability. Their operations share the waterways with a growing volume of vessels. Marine contractors' vessels are restricted in their navigation because of the work they perform, often working at a fixed location, such as a bridge. The exposure to collision while working around the clock, especially at night, is significant."

including waterborne coverage

- ***Property includes insurance for buildings, contents, and business interruption***
- ***Auto can also be packaged with the marine contractors program***

In many instances, coverages are packaged together to streamline the insurance buying process, as well as to eliminate possible conflicts in coverage. Recently, XL Catlin introduced one of the most comprehensive insurance coverage packages available on the market, designed specifically for marine contractors. This program is designed to simplify the insurance buying process and minimize the potential for gaps in coverage should a loss occur.

No marine contracting business is exactly the same. That's why working with an insurer with a long track record in the marine industry can significantly impact the effectiveness of a contractor's coverage. Marine underwriters are a rare breed. Insurers with a long history in the marine market pride themselves on building teams of underwriters who understand the nuances of marine contracting operations.

Policies can be tailored to meet an operation's special needs. These include per project aggregate limits, coverage for waterborne equipment and contractual legal liability including action over, automatic additional insureds, and flexible sublimits for additional coverages. Marine insurance carriers also employ marine claims specialists who understand the specific maritime laws and liabilities that apply when working on or along the water.

Final Thoughts

Marine contractors are playing a vital role in the nation's need to improve and enlarge vital infrastructure, making way for bigger shipping demands and other commercial activity. Fortunately there is a marine insurance market that understands this diverse industry's challenges.

Based in Chicago, ***Stephen Clark*** *is Vice President, National Hull & Liabilities Practice Leader for XL Catlin's North America Marine team. Based in Ohio,* ***Mike Perrotti*** *is Senior Vice President, Inland Marine for XL Catlin's North America Marine team.*

Maintaining Mission-Critical Winches, Windlasses and Cranes

The 4 must-have lubrication steps that all operators need to keep gears going.

By Ben Bryant and Steven Brochu

Bryant

Brochu

In the marine industry, winches, windlasses and cranes are the work horses of deck and harbor operations. They can be used to set anchors, position floating drill rigs, raise and lower sensitive scientific equipment, tow a ship, load/unload heavy cargo or even land fish. They are as vital to the mission of a vessel or a port as the main engine is to a ship. And just like engines, implementing a proper lubrication plan can lead to improved performance, reduced downtime and extended equipment life.

A common component of winches, windlasses and cranes are the open gear sets where one or more pinion gears drive a large girth gear. Proper alignment of these gears while also maintaining a high contact ratio of the tooth flanks is critical to the successful operation of this equipment.

A-B-C-D System of Gear Maintenance & Repair

Functional reliability and damage-free operation of large gear drives depend on correct lubrication. That's because they are exposed to highly varied loads and different operating conditions during their service life, from their assembly to permanent operation under full load. To ensure optimum lubrication at all operational stages and to protect the drives from damage right from the start, a systematic lubrication method can achieve your operational objectives. Each phase of the operation uses a different type of lubricant with the letters A–B–C–D denominating the individual steps of the system:

A = priming & pre-start lubrication
B = running-in lubrication
C = operational lubrication
D = repair lubrication

Lubricants have been developed for every step; suitable not only for the respective operating phase, but also account

"Proper separation is almost impossible in large gear drives due to the low peripheral speed, the very high flank pressure, the relatively high flank roughness and the difficulty in setting the two axes in perfect alignment. As a consequence, large gear drives operate mostly under mixed friction conditions, which make boundary lubrication so important."

for the type of lubrication and the method of application.

A: Priming and Prestart

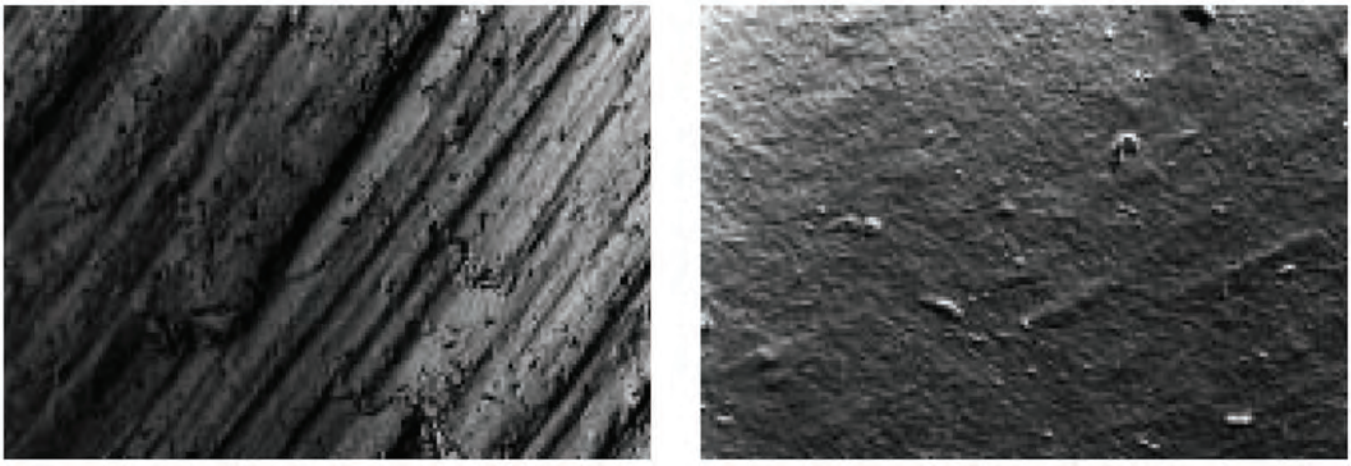
Priming lubricants (type A) are products containing a high percentage of additives and are applied prior to the initial operation of gear drives. They may be used in all spur or helical girth gear drives, irrespective of the lubrication method used. Main benefits include:

- ***Protecting the teeth against corrosion until the drive is operated for the first time.***
- ***During and after assembly of the drive, keeping the gears lubricated and preventing metallic contact between the tooth flanks.***
- ***Serving as a contrast substance for a first impression of the dynamic load-carrying pattern.***
- ***In drives with automatic spray lubrication, preventing initial scoring caused by deficient lubrication when the machine is started at its nominal speed.***

B: Running-in

The initial contact ratio of a gear – even when the pinion(s) and the driven gearwheel are properly aligned – is often no higher than 50 to 60%. This means that when new gear drives are put into operation, there is always a danger that partial overloading of the tooth flanks may cause damage. Running-in lubricants of type B are specifically used for the running-in of new or turned gear drives. They ensure that rough surfaces are smoothed quickly and that the contact ratio of the tooth flanks is improved.

During the running-in process, and due to high pressures and point spot welding occurring during initial operation, type B lubricants contain highly effective EP additives to counteract the risk of scoring and pitting damage. The chemical etching and the EP additives smooth the tooth flanks of asperities, which creates optimum conditions to prevent pitting or other damage. This process is controlled by the amount of lubricant used and the time it is allowed to act on the component.



(Figures 1B and 2B) Photographs of the surface of a new pinion flank taken with a scanning electron microscope (Module 25 mm, Rt = 44 µm RA = 4.3 µm / enlarged 50 times).

Beyond this, new or turned gear drives should not be operated under full load from the start, because the contact ratio often is initially too low. Instead, they should be run in according to a predetermined load/time schedule, with the transition to the next load stage only being carried out when a specific contact ratio has been reached.

C: Operational Lubrication

Type C lubricants are modern adhesive lubricants tailored to suit the operational conditions of girth gear drives and meet all extreme pressure requirements of gear drives. These lubricants are characterized by:

- ***excellent adhesion***
- ***good load-carrying capacity***
- ***maximum wear protection***
- ***protection against scoring***
- ***good corrosion protection***

These lubricants offer the prerequisites for thin-film lubrication (e.g. base oil viscosity). Consistency, EP additives and solid lubricant content are balanced to ensure that the tooth flanks receive maximum protection even under difficult operating conditions. The transition to operational lubrication is generally made when the running-in process has been completed, i.e., when the tooth flank surface has reached its maximum smoothness and when a contact ratio of at least 80% has been attained.

D: Repair

Not too long ago, tooth flank damage was repaired exclusively by highly abrasive mechanical methods – often quite ineffectively. The tooth flank quality obtained often did not meet expectations in terms of functional reliability and service life of the drive. The costs were very high and the repair periods quite long. Today, tooth damage is frequently repaired by means of repair lubricants. These lubricants can repair even heavily damaged tooth flanks to such an extent that the drives can operate under acceptable conditions. In addition, repair lubrication can avoid initial damage becoming more extensive and prevent new damage.

Repair lubricants have a grease-like nature and are adapted chemically and physically to metallic surfaces subject to mechanical, chemical and corrosive wear. Thus a small amount of lubricant is required to remove just the right amount of tooth flank material within a short period of time. The material is worn off evenly at the contact points. Surface wear and, hence, damage repair can be controlled with the amount and application duration of the active compound. The amount of material removal is limited by the thickness of the hardened tooth flank surface layer.

Before starting any repair lubrication, it is of utmost importance to address the primary cause of the existing damage in order to avoid repetition. Repair lubrications are an extremely complex matter. To avoid causing inadvertent damage, this method of repair should only be carried out by trained and experienced application engineers. Nevertheless, if implemented correctly, repair lubrication is a cost-effective alternative to mechanical treatment with considerably less down time.

As Easy as A, B, C (& D)

For open gear configurations in winches, windlasses and cranes, gear alignment is the most important technical procedure for optimum operation. Furthermore, excessive wear and flank damage can be avoided if the intermeshing tooth surfaces are completely separated by a lubricant film. Proper separation, however, is almost impossible in large gear drives due to the low peripheral speed, the very high flank pressure, the relatively high flank roughness and the difficulty in setting the two axes in perfect alignment. As a consequence, large gear drives operate mostly under mixed friction conditions, which make boundary lubrication so important.

To lubricate large gear drives reliably and protect them against damage, the four-step A–B–C–D lubrication process should be implemented during installation, operation and repair to enhance the reliability and operational life of your equipment. It's as easy as A, B, C, (& D).

Ben Bryant *is Marine Market Manager at Klüber Lubrication. A graduate of the Massachusetts Maritime Academy, he is a long-time contributor to our pages.* ***Steven Brochu*** *is a Senior Application & Service Engineer at Klüber Lubrication. He graduated from the University of New Hampshire with a degree in mechanical engineering. Before joining Klüber, Mr. Brochu worked for GE Aircraft in the Fuel Control F16 Fighter Jets Engines department.*

Safeguarding Our Marine Transportation System

The U.S. Coast Guard has the enduring responsibility to safeguard the MTS and enable the uninterrupted flow of maritime commerce.

By Rear Admiral John Nadeau, Assistant Commandant for Prevention Policy, USCG

Nadeau

Our great Nation's vast network of navigable waterways, deepwater ports, and protected harbors are natural economic assets and provide unfettered access to the world's two largest oceans. This powerful maritime capability sustains America's national security and fuels economic prosperity through the 25,000 mile Marine Transportation System (MTS). The MTS supports thousands of ships and 250,000 American jobs, and serves as a $4.5 trillion economic lifeblood of the global economy, connecting Americans to domestic and global markets. It is critical infrastructure, and even the slightest disruptions to the MTS can have devastating impacts to the livelihood of all Americans.

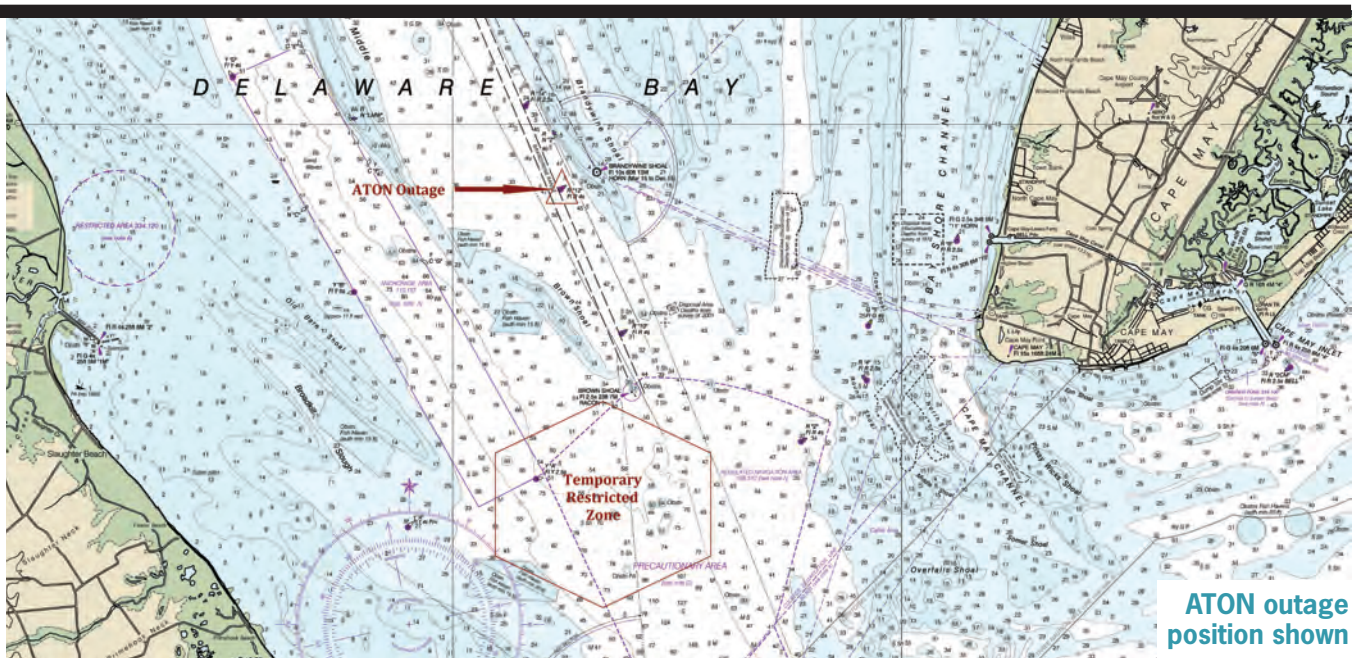
The U.S. Coast Guard has the enduring responsibility to safeguard the MTS and enable the uninterrupted flow of maritime commerce. This duty is becoming more challenging because the landscape of the marine environment is changing. Emerging technologies—the increased complexity in vessel designs, propulsion systems, and operations; automation, robotics, and networked systems; and new methods for offshore natural resource exploration, production, and transportation—all create operating efficiencies and improvements for our just-in-time global supply chain. Yet, these same advancements can create concerns as well, as increasingly complex regulatory, legal, and operational challenges must be addressed to prevent costly disruptions.

While rapid technological acceleration and digital integration pose challenges and can be risk aggravators, these factors also present opportunities for our Service to better enable commerce and safeguard the MTS. The Coast Guard must adapt and transform to leverage this technological wave to continue to keep pace with the technological advancements within the maritime industry and protect our economic lifeblood. The Coast Guard remains vigilant to manage unique risks and vulnerabilities to critical maritime infrastructure. The Coast Guard strives to build resiliency in the MTS and continues to work closely with our industry partners to develop and implement policy for rapid response and recovery operations when waterways and port closures occur.

For example, following the devastation of Hurricane Harvey, the Coast Guard employed electronic aids to navigation (e-ATON) to temporarily mark the location of buoys and other physical aids that were destroyed or damaged along the Gulf Coast. The location of the individual e-ATONs, which were transmitted over the Nationwide Automatic Identification System (NAIS), could be "seen" by any mariner with a radar or electronic charting system capable of displaying AIS information. Additionally, as a backup to the NAIS network, a portable AIS system was deployed to the effected regions in Texas. The system provided the ability to broadcast e-ATON in areas where NAIS did not cover. These efforts contributed to the reopening of affected ports several days earlier than originally anticipated. This is just one example of many that highlight how we leverage new technologies to ensure the MTS offers reliable and secure solutions to navigational challenges.

The Coast Guard will accelerate integration of modern navigation systems into a world-class network of buoys and beacons. American economic global competitiveness depends on a modern, state-of-the-art intermodal ports and waterways network. To achieve this, the Coast Guard must leverage technological advancements, artificial intelligence, and big data analytics to keep in step with emerging trends and better manage risk. Working with industry, the Coast Guard can smartly balance traditional navigation structures while creating the next generation waterways management systems, adapting regulatory frameworks, applications, and standards to emerging technologies and the changing maritime domain.

Moreover, the Coast Guard must recapitalize its antiquated aids to navigation vessels, which are vital infrastructure needed to support the proper functioning of the MTS. An alarming number of Coast Guard buoy and construction tenders remain in the active Coast Guard inventory well be-



ATON outage position shown

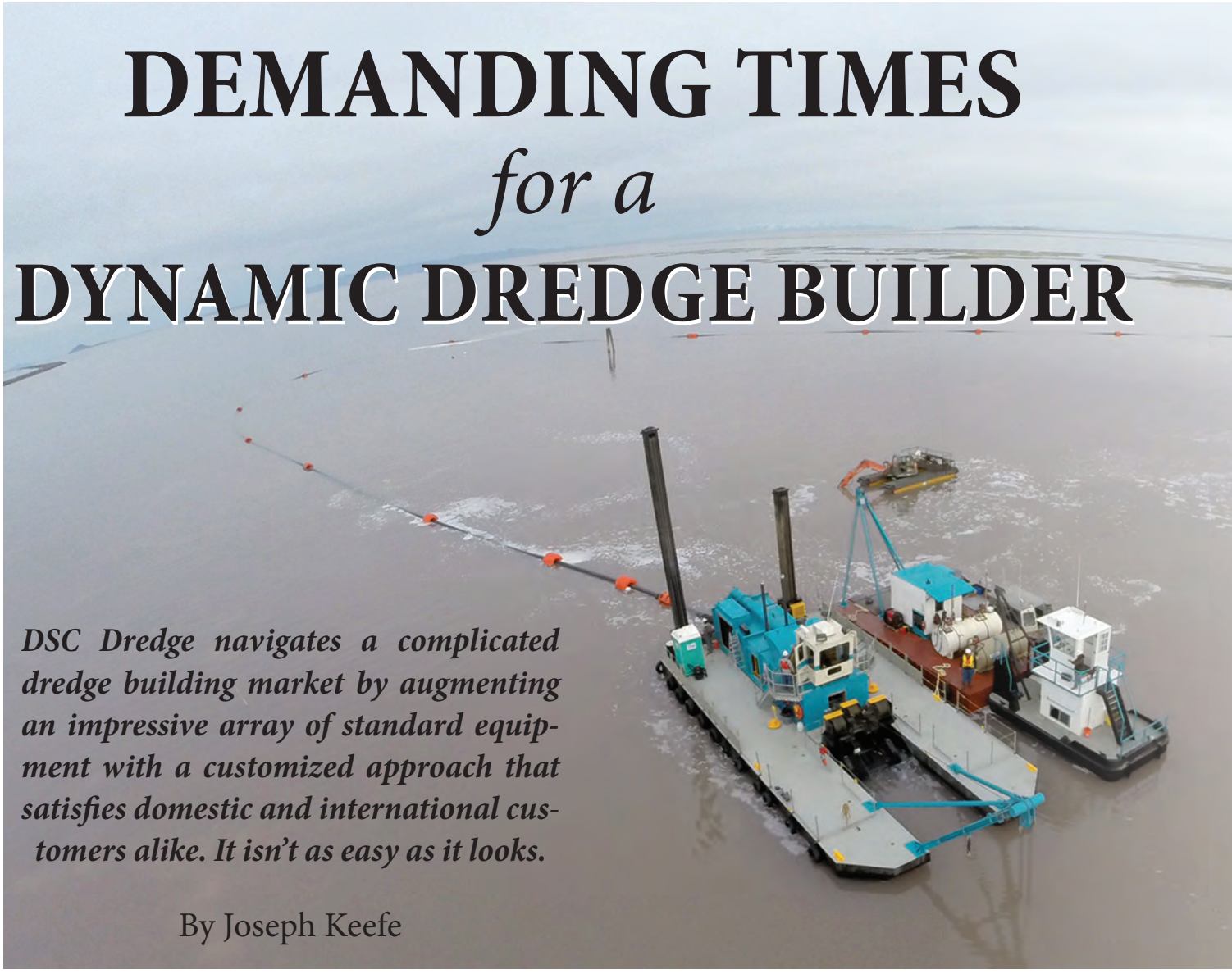
yond their service life, jeopardizing the Service's organic capability to establish, maintain, and repair beacons and buoys in America's waterways. Mariners depend on fixed and floating aids to navigation to safely navigate and prevent catastrophic accidents such as collisions, allisions, and groundings. These Coast Guard vessels maintain and repair the fixed and floating aids to ensure they are properly positioned to act like road signs on the waterways.

The Coast Guard must strengthen an adaptive workforce that is comfortable operating in volatility amid the rapid acceleration of technology, maintaining awareness over marine industry trends and innovations that have the potential to transform, or possibly disrupt, the maritime transportation sector. The Coast Guard will judiciously expand the use of Third Party Organizations (TPOs) to approve commercial vessel plans, conduct surveys, and issue certain required certificates on its behalf. At the same time, the Coast Guard will strengthen third-party oversight, auditing, and integrated risk management to ensure the highest standards of compliance.

As the Subchapter M compliance date grows closer, the Coast Guard is taking several steps to minimize negative impacts and ensure all parties are fully prepared, including multiple training opportunities and a variety of industry outreach efforts. The goal is a smooth transition for both Coast Guard and industry members that does not impede commerce. The overall intent is not only to bring this part of the maritime industry into compliance with Subchapter M regulations. Rather, it is a model of the increased level of commitment the Coast Guard is taking throughout the maritime industry to jointly create a safer and more resilient MTS for the future.

Any disruption to the MTS, whether man-made or natural, is a major event that can result in a cascading and potentially devastating impact on the domestic and global supply chain and, consequently, America's economy and national security. To best facilitate maritime commerce, ensure unrestricted and unimpeded trade and travel through America's waterways, the Coast Guard will continue to improve its capabilities and rely on its strong partnerships among all members of the maritime community. Working together, we can ensure the MTS will remain healthy and support America's economic prosperity.

DEMANDING TIMES *for a* DYNAMIC DREDGE BUILDER



DSC Dredge navigates a complicated dredge building market by augmenting an impressive array of standard equipment with a customized approach that satisfies domestic and international customers alike. It isn't as easy as it looks.

By Joseph Keefe

The New Year typically brings new challenges to all sectors of the waterfront and 2018 will be no different. As the newly expanded and improved Panama and Suez Canals bring larger, so-called post-Panamax vessels to U.S. shores, stakeholders tend to focus on domestic dredging needs. And, there's plenty of that to go around. At the same time, global infrastructure requirements are also growing. Developing and first world countries alike all need waterfront improvements to support industry, growing populations and the trade that these metrics always bring.

Closer to home, it was Chairman Garret Graves (R-LA) at a January 18th Subcommittee on Water Resources and Environment hearing who recently said it best. "Much of our nation's success, and future successes, are dependent on our ports and waterways system ... Our ports, through which 99 percent of overseas trade passes, struggle to maintain their navigation channels at their fully authorized depths, let alone a depth to allow for even bigger ships that are increasingly the global norm."

Graves furthermore insists that central to all of these issues is the Army Corps of Engineers. "Right now, there is a backlog of 1,000 projects totaling approximately $96 billion in need. With an annual Corps budget of about $6 billion, the simple reality is that we will likely never catch up." That said; if and when we do catch up, it will be because we had enough well designed dredges to do the job.

(*) all images courtesy DSC Dredge

Underpinning current events is the fundamental truth that the need for dredging will never go away, and the recapitalization of existing equipment in this demanding trade – here and across the big pond – is always an ongoing process. What's unusual about that reality is that a U.S.-based builder can compete, and compete well on the international side of the equation. Bob Wetta, President and CEO of DSC Dredge, says that the key to that success is to keep his firm at the forefront of current events, as well as the latest dredging and engineering trends for the business. That's easier said than done.

DSC DREDGE: BY THE NUMBERS

With deep roots stretching all the way back to the 1950's, DSC Dredge is at its heart, a family business that has evolved over time into one the nation's premier builders of dredging equipment. Over time, the firm's success – built by a laser focus on customization and quality – led to growth. In 2010 the corporation consolidated its subsidiaries, and DSC Dredge, LLC (DSC), was born. The reorganization brought together Dredging Supply Company and dredge manufacturers W&S and Best Equipment to gain maximum efficiencies in the day-to-day operations and administration of all of the facilities.

DSC has three manufacturing operations in the USA, and engineers customized dredging solutions to meet specific application needs. More importantly, the firm is active in both international and domestic markets. Bob Wetta explains the formula, saying, "The split over the past 5+ years has been approximately 50/50. The only time we saw a little downward slope in the international market was when oil prices started dropping in 2014. It started equalizing in 2016."

Today, DSC has equipment deployed to as many as 40 countries. Where U.S. boatbuilders are often considered to be too expensive for foreign buyers, roughly half of the DSC output is still exported. "I believe reputation has played a big part in our international efforts. DSC stands behind our products," says Wetta, adding, "We commission the equipment, train the end users and make return visits to make sure the equipment is functioning properly. Another thing DSC promotes that many other dredge manufactures do not is that we don't privatize the maintenance parts on our equipment. We install other OEM equipment with their original tags so our clients have the opportunity to source components in their local markets."

In a given year, DSC averages between 130-150 employees. From 2010 through 2017, its average output was 20 major equipment projects annually, with actual output dictated by the size of the projects and man-hours required. Wetta explains, "Year to year, it can look a little different. For example; if we had two (2) large custom dredges (say 24" dredges), then the output might only be 10 dredges that year. Conversely, if all of the dredges we smaller to mid-size we might deliver as many as 30."

TODAY'S DREDGE MARKETS

One might think that with all the focus on infrastructure here and the deepening operations underway to meet the post-Panamax tonnage, that the dredge market would be hot. According to DSC Dredge, it remains a mixed bag as we head into 2018. "From our manufacturing prospective, I would say the domestic market is picking up on the aggregate side of the market. Sand and gravel producers are investing in new operations and new equipment. I think the aggregate industry is showing confidence based on the current USA administration and their commitment to our infrastructure," said Wetta. Offshore, he adds, the foreign market still has certain geographical regions that are strong while others are very soft. The soft markets are typically countries that depend on oil for the primary economy. That said; Wetta remains optimistic for the near term. "I do believe the demand is there for DSC to continue a 50/50 split for domestic to international sales ratio."

Past success is no guarantee of future performance and that means that all stakeholders in this sector need to have a well planned and executed business plan. DSC, for example, has sales representation in several countries overseas. Focusing on the active markets while trying to establish formal and exclusive representation is how DSC stays ahead of the market. Wetta told ***MarineNews*** in January, "We need a partner in for the long haul and one that is committed to DSC. In other areas, we may have project specific representatives that help through some of the barriers faced with exporting. DSC's international sales office is based out of Baltimore. BWI offers good flight options for our Director of International Sales (Charles Sinunu) to make international trips as needed."

Another part of the DSC philosophy involves the production of both standard dredge designs, as well as custom projects. "Our niche market is definitely custom designed dredges. DSC averages about 3 to 4 custom design projects a year and the balance is made up of standard designed equipment. But the revenue split on these is fairly equal," said Wetta. In practice, the Greenbush, MI facility focuses on standard design dredges – the Badger and Wolverine

"We commission the equipment, train the end users and make return visits to make sure the equipment is functioning properly. Another thing DSC promotes that many other dredge manufactures do not is that we don't privatize the maintenance parts on our equipment. We install other OEM equipment with their original tags so our clients have the opportunity to source components in their local markets."

– Bob Wetta, President and CEO of DSC Dredge

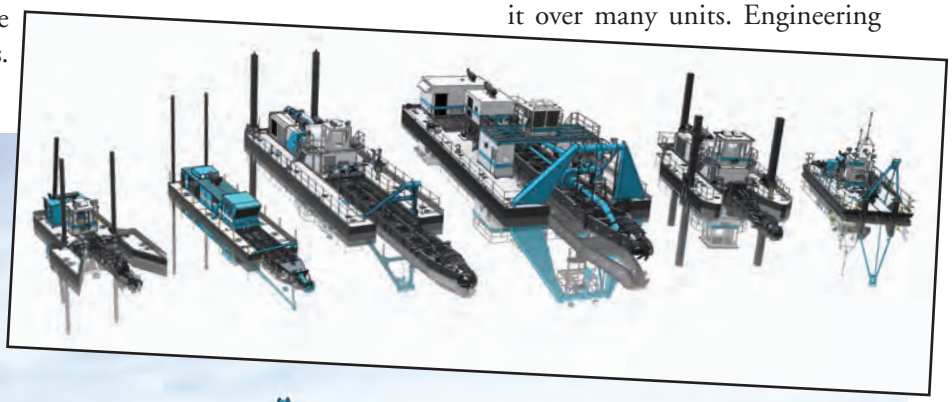
Class dredges. The firm's Poplarville, MS and Reserve, LA facilities both aim to have standard dredges in stock or at least at some point in the production queue. These southern DSC facilities focus on 8" through 18" dredges for speculative sale and include the well-known DSC Moray, Shark and Barracuda Class dredges.

BIG CHALLENGES, INNOVATIVE SOLUTIONS

It is one thing to talk about selling here and abroad, and quite another to execute the plan in practice. That's because while foreign buyers are still using EPA Tier 3 engines, the U.S. markets now demand Tier 4 to meet regulations. As manufacturers gear up for production, the difference impacts both costs and logistics. For example, where a yard or builder might want to stock several units so as to be able to quickly respond to demand, that's not always possible or practical when different markets demand different equipment.

Wetta acknowledges the issue, while laying out the DSC way of doing things. "This definitely does present some challenges but we have defined several products that have been repetitively sold in our export markets. I envision a mix on certain model dredges where we will stock both Tier 3 and tier 4 versions. Another thought is to have both engines sitting on our shop floor waiting for the buyer and have the ability to do a quick turnaround no matter where the final destination for the dredge will be. There is an added cost for the Tier 4 engines and that can vary from 130% to nearly 200% of the same engine in a Tier 3 configuration."

Because today's engines – at least on the domestic side – now need more after-treatment, dredge builders such as DSC have to redesign certain aspects of those hulls. "Obviously," says Wetta, "this cost needs to be passed on. The cost to redesign a standard product is generally absorbed by DSC because the plan is to sell the standard design many times – let's say we absorb the design cost by amortizing it over many units. Engineering



and automation designs are generally factored into custom dredge designs so I don't see a substantial change for our pricing metrics besides passing along the added material costs for the Tier 4 engines."

In the end, however, 'Tier' configuration is not really a deciding factor for the dredge, but Tier 4 dredges may not be very useful in parts of the world that do not have clean, low sulphur fuel. Moreover, says Wetta, dredge requirements include differences such as dredging depth capability, production rate, pumping distance and the type of material to be dredged. "These differences are what allows DSC to offer custom designs to offer the most efficient dredge for the projects. The problem is typically the time it takes to design/build a custom dredge versus the client's needs to have something immediately. Unfortunately, some companies can't wait for a custom dredge to be built and they end up getting something that is over or under the requirements; in either case the wrong dredge and an inefficient option."

Digging deeper into the Tier 4 quandary, dredges today are using SCR to achieve tier 4 compliance with aftermarket cooling. The Selective Catalytic Reduction system used to achieve Tier IV places a heavier cooling load on both the jacket water and after-cooler sections of the engine radiator. The jacket water heat rejection in these engines increased significantly, which dictated a larger radiator core and different fan selection. DSC, for example, had to shift from a stacked radiator core (auxiliary cooling cores on top of jacket water and after-cooler cores) to separate units in different locations. The end result actually allowed for better air flow though the dredge engine room, less radiator fan noise, and less pre-heat demand on the engine cooler.

INDUSTRY FIRSTS: TIER 4 ARRIVES

The U.S. Environmental Protection Agency (EPA) Tier 4 Final emissions standards went into effect for dredges last year. Engines ranging from 2,682 to 4,962 hp (2,000-3,700 kW) were first affected by the standards. But by October 2017, all new engines with a maximum power of 804 hp (600 kW) and greater must meet U.S. EPA Tier 4 Final emission standards. As all of that was happening, DSC and Caterpillar/Michigan CAT collaborated to install the first Tier 4 Final engine in a DSC Shark dredge – the C32 Tier 4 Final 1,125 hp.

This project was put together for a mineral producer working in the Great Salt Lake. The engine was installed in a custom 18" DSC Shark Class dredge. Wetta told *MarineNews*, "While the Tier 4 requirement was not in effect at the time we manufactured the dredge, the client opted for this option. We have dredges with Tier 4 engines in production but they are for speculative sale. We do have several quoted at this time, as well."

In this case, the C32 Tier 4 Final engine is a 32-liter 12-cylinder V-engine with horsepower ranges from 1,000 hp to 1,125 hp. The C32 has industry-leading torque of 4,056 foot-pounds at 1200 rpm. Caterpillar was able to achieve the Tier 4 Final regulations in the C32 with the use of the Caterpillar NOx Reduction System and dual maintenance-free diesel oxidation catalysts (DOC).

MORE THAN MANUFACTURING: OUTREACH

Bob Wetta knows that running a good business probably isn't enough in today's rapidly changing waterfront. Beyond the day-to-day grind of delivering quality at home and overseas, outreach is also very much on his mind. As a past Board Member and past President/Board Chairman of the Western Dredging Association (WEDA), a non-profit technical professional organization devoted to the exchange of knowledge in fields related to dredging, navigation, marine engineering and construction, Wetta keeps DSC abreast of industry trends, politics and technology.

Along the way, he and DSC have done a lot of good. As

the 2014 recipient of the WEDA's 'Dredger of the Year' award, Wetta was recognized as the individual who provided outstanding benefit to the WEDA organization and to the dredging industry. Indeed, one of WEDA's objectives is to recognize individuals and organizations for outstanding engineering and operational achievement. At the same time, Wetta remains dedicated to WEDA's core goal of facilitating "the exchange of knowledge" between all stakeholders, as well as ensuring that the talent to get the job done remains on the dredging side of the equation.

"I believe one of the biggest challenges is educating our industry," he explained, adding quickly, "I see too many companies purchasing equipment based on availability versus the best suited and efficient option. Another challenge is the competition in the skilled labor workforce. Our dredge builders (welders, fitters, hydraulic/mechanic technicians, electrical technicians, field service technicians) have the same crafts used by many other industries and we are all competing for the same resources."

More than 500 dredges after DSC's inception, the firm continues to balance a standard and proven array of dredges with the flexibility of custom design, when required. It's a formula that allows Wetta to successfully market his products to more than 40 countries. And, while the business climate may change from year to year, that's a business philosophy Bob Wetta is unlikely stray very far from. Hence, the next time you pass safely over shallow and restricted waters in North America and beyond, there's a good chance that DSC Dredge had a hand in making that possible. That's not likely to change, either.

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The Ports of Indiana:

The Ports of Indiana is a statewide port authority, established in 1963, which operates three ports: two on the Ohio River, one on Lake Michigan. Port officials refer to the three as "America's Premier Inland Port System." They cite location, location, location, providing access via two critical freight arteries – the Great Lakes and the Inland Waterway System and proximity to the world's most productive industrial and agricultural regions.

Three for the Money

The Ports is the only statewide port authority in the Midwest. It can develop projects anywhere in Indiana (a possible fourth port is under review, on the Ohio River in Lawrenceburg, about 30 miles west of Cincinnati). The Ports does not receive any local or state tax dollars; 100 percent of port revenue is reinvested in port facilities. Revenue is generated by facility leases and user fees based on

(*) all images courtesy Ports of Indiana

Building on Success

By Tom Ewing

"Our Jeffersonville port's location in the heart of the auto and appliance manufacturing region will be a tremendous strategic advantage for POSCO. The company will now have year-round access to the Gulf of Mexico and multimodal options including water, access to multiple Class I railroads and interstate highways."

– Rich Cooper, Ports of Indiana CEO

shipments through the ports. State economic officials estimate the three ports contribute over $6 billion annually to Indiana's economy, supporting 50,000 jobs.

Burns Harbor resides on Lake Michigan, 18 miles from Chicago, in the "Steel Capital of North America." This port supports Great Lakes bulk carriers up to 1,000 feet and ocean vessels capable of transiting Great Lakes/St. Lawrence Seaway locks. U.S. Army Corps of Engineers (USACE) Waterborne Commerce Statistics for 2015 showed the port handling an impressive 7,969,513 tons.

Jeffersonville is on the Ohio River, part of the Louisville, KY, metro area. Encompassing 1,057 acres, the riverfront spans 3,200 feet. Major cargoes include corn, fertilizer, salt, wire rod, soybeans, steel, liquid asphalt, pig iron and heavy lift. Infrastructure includes docks, rail, utilities, multimodal connections, specialized cargo handling services and expansive storage facilities. It is also home to the largest U.S. inland shipyard operation – Jeffboat. The USACE put Jeffersonville's 2015 cargo tonnage at 2,800,000.

Mt. Vernon is one of the country's largest inland ports, spread out over 1,200 acres with 8,000 feet of riverfront. Sitting just 153 miles from the Ohio/Mississippi confluence,

facilities include a 60-ton dual-lift overhead crane fully integrated to transload between barge, rail and truck, public piers equipped for transloading bulk products and heavy lift cargo and a coal terminal with 8 million tons of annual capacity. Importantly, the Port has eight miles of interior rail track provides links to five Class I railroads. It's no surprise, then, that 6,140,964 tons of cargo rolled through this inland hub 2015.

But, Indiana has other big ports, too. Indiana Harbor, in East Chicago, IN, for example, is the second ranking harbor in volume among the 55 Great Lakes Federal commercial harbors, according to World Port Source. Indiana Harbor handled 12,354,161 tons in 2015, according to ACE. Just eight nautical miles west of Burns Harbor sits the port of Gary. Gary handled 8,669,252 tons in 2015. All that said; Indiana Harbor and Gary are not part of the Ports of Indiana system.

(Planned) Growth

In 2017, the three Ports of Indiana handled 11.8 million tons of cargo shipments, the second highest total in the Port's history. Coal, steel, fertilizer, ethanol and project cargo were key items. The 2017 numbers are an increase of 5% over the previous year and 9% over the previous 5-year average. The current 5-year average is up 50% vs. the previous 5-year average:

- *Average tons/year 2013-2017: 10.8 million tons.*
- *Average tons/year 2008-2012: 7.3 million tons.*

Port officials are optimistic that they can keep these numbers trending in the right direction. Jody Peacock, Vice President, told ***MarineNews*** that his team projects continued growth as shipping volumes are closely tied to the Port's important regional market sectors – agriculture, domestic

"… customers are making us increasingly aware of the need for fiber not only for high-speed internet connections, but to allow microprocessors and machines to connect and communicate in their manufacturing processes."

– Rich Cooper, Ports of Indiana CEO

manufacturing in steel related industries and coal, shipped domestically and internationally for power generation.

Steel gets an especially important focus, particularly at Jeffersonville, with its "steel campus" – 15 steel-related companies serving Midwest auto and appliance industries. In 2015 and 2016, Jeffersonville handled its two highest annual volumes of steel. Last September, this mix of expertise, assets and hard work paid off big. The South Korean steel firm POSCO, the 5th largest steel maker in the world, opened a new $21 million plant, the first phase of a project announced in April 2016. This is POSCO's only US facility outside of California. The plant will process steel wire for the auto industry and it will serve as a company distribution center.

"Our Jeffersonville port's location in the heart of the auto and appliance manufacturing region will be a tremendous strategic advantage for POSCO," said Rich Cooper, Ports of Indiana CEO. "The company will now have year-round access to the Gulf of Mexico and multimodal options including water, access to multiple Class I railroads and interstate highways," Cooper said.

It's important to note that the Indiana Economic Development Corporation did offer POSCO up to $550,000 in conditional tax credits and up to $50,000 in training grants based on the company's job creation plans. These incentives are performance-based. The company can claim the incentives as Indiana residents are hired.

Rich Cooper and his team have an active development program for each Port. Major activities are overseen by the Ports of Indiana Commission, a seven-member, bipartisan board appointed by the Governor. Commissioners serve

staggered, four-year terms; they approve the Port's major projects, budgets and strategic objectives.

Indiana Governor Eric Holcomb appointed two new Commissioners last October. Monica Newhouse-Rodriguez is managing principal of a national airport consulting firm which provides airport planning, capital management and development services. Michael Browning is chairman of the board for Browning Investments, the largest developer of industrial distribution facilities in central Indiana. This team knows freight, transport and logistics.

Funding the Future

One of the most recent, and high profile, developments that will advance critical infrastructure occurred last October when Burns Harbor was awarded a $9.85 million DOT FASTLANE small projects grant, money to complete an extensive series of projects with a total cost of $19.7 million. Projects include a new shipping berth and truck marshalling yard and a new 2.3-acre multimodal cargo terminal for transfers between ships, barges, rail cars and trucks. Dock improvements will yield an additional 1,200 feet of dock space.

The rail improvements are noteworthy. Over four miles of lines will be added to the Port's 14-mile network. Switching capabilities will be added within the port. Two new rail yards will create storage for 165 railcars and accommodate a 90-car unit train. Currently, Burns Harbor mainline connections are "challenging," according to Indiana DOT. The Port wants better connectivity with Norfolk Southern's mainline, running from northern Ohio to Chicago.

These plans are timely. Consider that in 1995, 40 percent of grain tonnage was carried in trainload quantities (50+ carloads), compared to 68 percent in 2014.

In 2018, Burns Harbor expansion moves into the design phase. Construction is expected in 2019. Completion will be "over the next few years," officials say. This Burns Harbor project is additionally noteworthy because the Jeffersonville Port received a similar DOT grant in 2015. That grant was for $10 million and, again, for multimodal infrastructure – unit train delivery to and from the port, reconfiguring waterfront rail infrastructure to increase operational efficiency and a new intermodal facility. Jeffersonville port officials expect these developments to more than double the capacity of rail to barge transfers. Jeffersonville construction starts this year. Last summer, for example, the Port released a notice seeking qualified bidders for a $5 million bulk terminal project, which also includes 2280 linear feet of railroad track. Construction is to be finished this year.

Port officials did not say how they are financing the balance of these projects – $10 million for Burns Harbor and $7 million for Jeffersonville. Public documents don't say, for example, whether the railroads are partner investors. In 2017, the Ports added "nearly $6 million," according to CEO Rich Cooper, to the overall nine-year capital improvement program, which now totals "over $58 million," according to Cooper. 2018 capital improvement dollars were not disclosed. The Ports has added that same sum – about $6 million – each year for the past few years.

The big project in Mount Vernon in 2018 will be upgrading a 70-ton overhead crane that transloads between barges, trains and trucks, connecting shippers to five Class I railroads.

In addition to investments in new and upgraded heavy infrastructure, Port officials are active in correlated investments in new fiber and communications systems, making sure that steel tracks and wireless technologies are connected. Last November, in a joint project with AT&T, Jeffersonville and Mount Vernon were both certified as "AT&T Fiber Ready."

In noting this new development, Rich Cooper said that Port "customers are making us increasingly aware of the need for fiber not only for high-speed internet connections, but to allow microprocessors and machines to connect and communicate in their manufacturing processes." Similar work started in Burns Harbor in 2017. In November, the Port solicited bids for installation of approximately 3,500 feet of fiber optic cable and "underground conduit, six handholes, and multiple fiber optic laterals."

Active at home – and in Washington

Ports of Indiana officials are active on the national scene, too. Last spring the Ports served as host for a national infrastructure conference, in partnership with the American Association of Port Authorities. The two organizations teamed up for a forum called the "Influencer's Roundtable." The topic? discussion of major problems and potential solutions related to under-investments in America's freight transportation infrastructure.

Maybe sometime in 2018, sooner rather than later, this group of Influencers will get the push they need: a robust federal infrastructure plan to invest big-time in the projects that deliver the goods; literally and figuratively. In the meantime, the Ports of Indiana certainly aren't sitting on their hands.

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

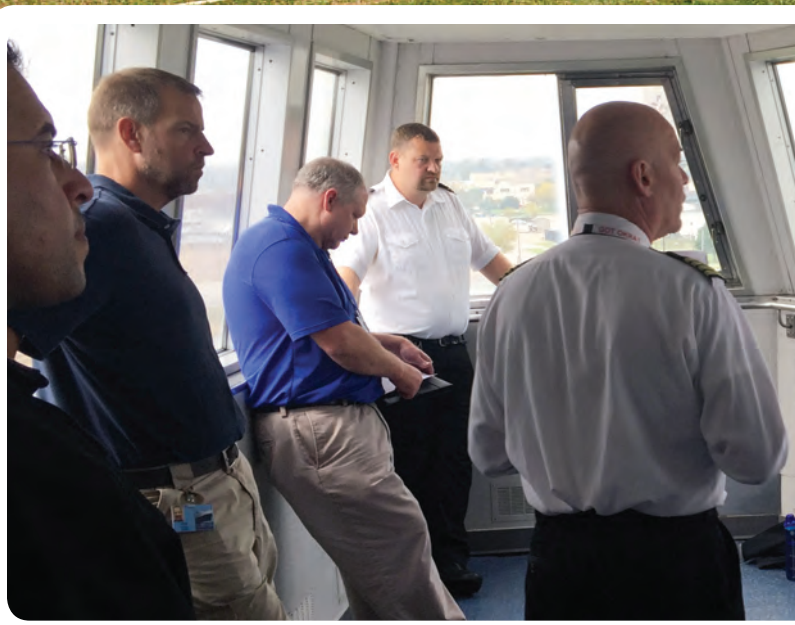
Enhancing Historic Lake Michigan Docking Facilities

A federal FASTLANE grant has been approved for S.S. Badger Ports & Harbor project impacting Manitowoc, WI and Ludington, MI. A primer on how things get done.

By Brian Hinrichs

(*) All images courtesy Foth

This is a story about two communities on the shores of Lake Michigan and the unique car ferry that connects them. The SS Badger provides a nautical "highway" across one of our nation's major waterways, carrying passengers, oversized loads and trucks of nearly every kind. Essentially, the ferry provides a vital lifeline of commerce, tourism, and economic growth between the cities of Manitowoc, WI and Ludington, MI.



Designated in 2016 by the U.S. Department of the Interior as a National Historic Landmark, the Badger has served these communities for over 60 years. But, like many other sectors of our inland port infrastructure, docking facilities in both port cities are showing their age and in dire need of repairs. Thanks to the recent approval of a USDOT FASTLANE grant along with State funding acquired through the Wisconsin Harbor Assistance Program (HAP), financial support for revitalization is now firmly in place. A new chapter in this decades old story is about to begin.

The FASTLANE Program

Originally called Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies, the federal FASTLANE grant program was developed to fund critical freight and highway projects across the country. In the first call for FASTLANE grants, USDOT received 212 applications requesting nearly $9.8 billion for grants, 13 times more funding than was available. Of the 212 applications, 136 represented projects in urban areas, while the remaining 76 supported rural projects.

In other words, the competition for funding was extremely tough. In fact, the grant award for the SS Badger was the only non-rail project approved – a testament to the unique nature of the two docking facilities and the multi-state efforts that define this collaborative and worthwhile project.

"… competition for funding was extremely tough. In fact the grant award for the SS Badger was the only non-rail project approved – a testament to the unique nature of the two docking facilities and the multi-state efforts that define this collaborative and worthwhile project."

The Origins of the SS Badger

The SS Badger was originally constructed as a rail car ferry in 1952 and entered service in 1953. The 410' ship was specifically designed to handle the rough conditions it would encounter during year round sailing on Lake Michigan. The Badger reigned as Queen of the Lakes during the car ferry's Golden Era in the late 1950's. As changing railroad economics were condemning other car ferries to mothballs or the scrap yard, and sidelined by economics, the Badger sailed from Wisconsin to Ludington, MI and tied up for the last time in November 1990.

The demise of the car ferries was of course devastating to the communities they served and the thousands of passengers who loved them. Things changed for the better just one year later as entrepreneur Charles Conrad committed his resources to reinvent the SS Badger to carry leisure passengers, vehicles and cargo. Today, the Badger makes the daily four-hour, 60 mile round-trip cruise across Lake Michigan from Manitowoc to Ludington from mid-May through mid-October.

Fast Forward to 2015

In 2015, Foth, a Green Bay, WI based engineering consulting and construction management firm, paid a visit to the harbor master in Manitowoc to get the ball rolling on needed improvements for their docking facilities and to investigate potential funding options. Additional meet-

ings with key stakeholders including the City of Ludington along with the owner, Lake Michigan Carferry Service (LMC), soon followed. Foth, with deep experience in design, engineering, and construction management of port and harbor infrastructure projects throughout the Great Lakes Region, was a natural choice. This project also required expertise in grant fund acquisition and management – one of Foth's core competencies. A strong working partnership between all players soon developed.

The Foth team got to work conducting a site evaluation and performing preliminary engineering work to identify a series of proposed improvements to the Manitowoc and Ludington docking facilities - both short and long term.

Improvements Identified

On the Ludington side, the existing timber fender system was installed in 1930 and then renovated in 1946. Not surprisingly, the current structure was found to be in advanced stage of failure with fender walls severely out of plumb and bulging landward. The proposed work will include an approximately 260' long timber fender wall system, renovation or replacement of existing mooring dolphins, and sheet pile encasement of existing apron counter-weight foundation.

Separately, the docking facility in Manitowoc experienced major failure [to a portion of its steel sheet pile bulkhead and timber-pile fender system] from age, compounded by recent heavy wind and sea conditions experienced over the 2015-2016 winter months. Proposed work will include an approximately 420' long anchored steel sheet pile dock wall incorporating a rubber "cone and panel fender" system to absorb the forces associated with docking the 6,000 ton vessel. Dock wall concepts were developed based on material availability, longevity, environmental/site restraints, cost, landside operations as well as Badger operations to include arrival and departure maneuvering.

Transforming Infrastructure Challenges into Community Assets

The economic benefits of the Badger project are substantial. Chief among these is the value of maintaining the highway 10 connection. U.S. 10 is an east-west United States highway connecting the states of Michigan with Wisconsin, Minnesota, and South Dakota by means of ferrying across 60 miles of Lake Michigan. As such, the ferry is critical to the economies of Manitowoc, WI and Ludington, MI, and the surrounding cities and counties with an estimated annual economic impact of $35 million.

Additional benefits include:

- ***Reduced travel time for passengers and shippers*** – *vehicles taking the ferry save as much as 3 hours round trip;*
- ***Community Impacts*** – *reduced traffic of oversized & overweight loads (including wind tower structures manufactured in Manitowoc) going through the congested Milwaukee/Chicago/Northern Indiana Corridor;*
- ***Environmental*** – *reduced vehicle emissions and over 1.5 million gallons of fuel savings;*
- ***Safety*** – *as a result of reduced traffic through already congested highway systems.*

The Path Forward

Foth has been engaged by the Cities of Manitowoc and Ludington, along with the Lake Michigan Carferry Service, to lead the entire project, which includes environmental due diligence, design, and construction management. Construction is scheduled to begin on both sides of the lake in October 2018 and be completed by May 2019, just in time for the ferry service to commence in May.

When the project is complete, the facilities will be updated, emergency maintenance activities will no longer be a regular occurrence, and the Badger will be better able to accommodate current and future multi-modal maritime freight and passenger movement across Lake Michigan.

A vital transportation connection that began in 1953 has new life thanks to the collective efforts of Foth, the cities of Ludington, MI and Manitowoc, WI; LMC; and the federal FASTLANE and state HAP funding programs. Transformation is possible. And, it never hurts to remind stakeholders that marine highways are critical to and the lifeblood of the nation's intermodal equation.

Brian L. Hinrichs, P.S.S., is a Senior Client Manager and leads the Ports and Harbors practice at Foth Infrastructure and Environment (Foth). He is a nationally recognized leader in developing, funding and executing sediment management and coastal infrastructure projects. He has secured over 100 million dollars in grants funds for water resource projects in the last 10 years. He is also a senior member of the American Association of Port Authorities (AAPA) Harbor and Navigation and Energy and Environment Technical Advisory Committees and a member of the Technical Advisory Committee for the Great Lakes Dredge Team.

Virtual ATON's: *here now, here to stay*

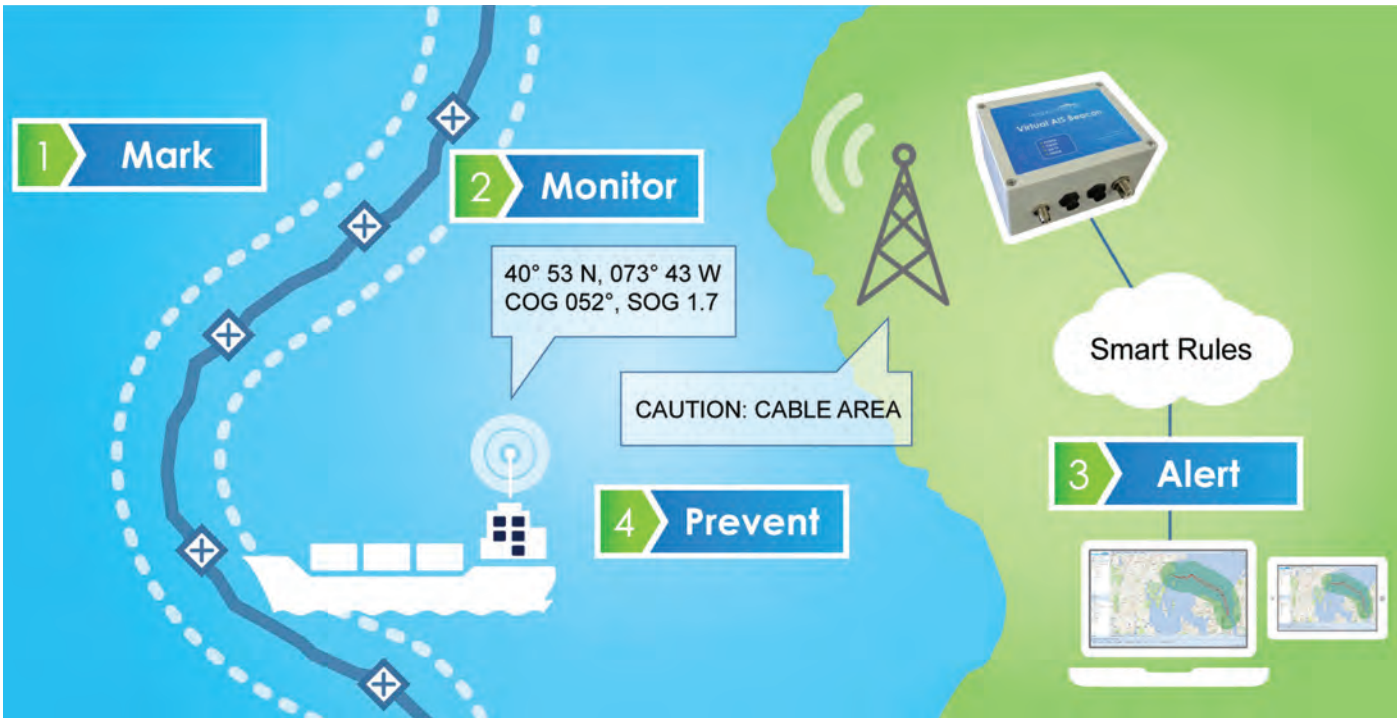
Vesper Marine designed its Virtual AIS Beacon in 2010 and installed the first solution in 2011. Developed to address the need to make hazards at sea visible when costly physical infrastructure is not appropriate or is impossible to deploy, the Virtual Aid to Navigation technology that Vesper Marine has created is based on the international standardized AIS, which all large ships must use and many yachts and smaller vessels are now choosing to install due to the safety and collision avoidance benefits it provides.

Virtual ATON's 101

A Virtual Aid to Navigation is created when a signal sent from a transmitter in an accessible location is used to mark a remote point. This mark is displayed as a navigational feature or hazard on a vessel's chart plotter, AIS display or other receiving equipment when within range. The ship's onboard equipment is then able to alert crews if they are on a collision course with the marked navigational hazard.

After Vesper Marine successfully used this technology to implement a course perimeter system for spectators at the last two America's Cup competitions in San Francisco (2013) and Bermuda (2017), Volvo Ocean Race organizers approached the company for the same technology to manage their In-Port Races. Establishing a virtual perimeter around the course, the Guardian Virtual AIS stations broadcast information to spectator and race official boats using AIS frequencies – painting the course on their navigation systems.

As a result, spectator and official vessels can quickly and easily see their own positions relative to the course boundaries on their navigation displays, to ensure they are safely outside the course at all times. In addition, Guardian cloud software will continuously monitor vessel positions and proactively send both the vessel and the Volvo Ocean Race organizers an alert if a hazardous situation develops. The virtual marks can be configured remotely to change with conditions and the Guardian system can be easily moved to each host city using the same hardware and cloud based software.



"Incidents like the New York Power Authority's previous anchor strikes caused a huge impact to the region in terms of financial costs, danger to work crews undertaking the arduous repair and interruption of power service, as well as the potential environmental impact of spilled cable oil. We are proud to help by providing a system to mark the cables, monitor local traffic, alert the NYPA of potential issues and notify vessels to prevent accidents before they occur."

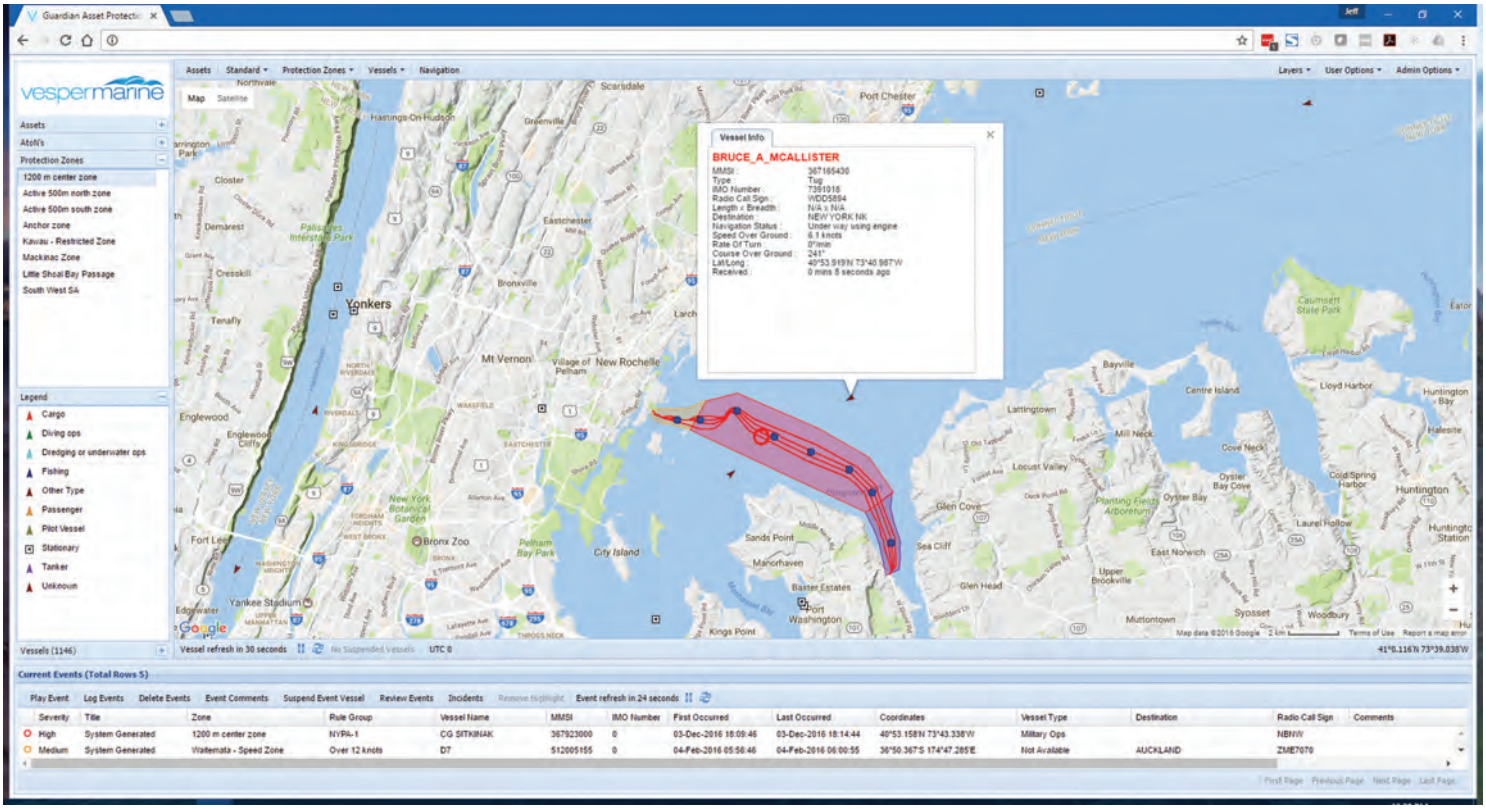
– Jeff Robbins, CEO Vesper Marine

Guardian:protect – a Commercial Application

Recently, Vesper Marine provided its Guardian:protect system to New York Power Authority (NYPA) to protect submerged power cables in the Long Island Sound which provide critical power to Long Island. The Vesper Marine Guardian:protect system is the first U.S. installation of a system combining virtual AIS technology with intelligent software to mark subsea cables and actively monitor traffic.

The NYPA, the largest state electric utility in the United States, experienced anchor strikes in 2004 and 2014 to the submerged portion of its Y-49 transmission circuit in the Long Island Sound. The underwater section of Y-49 is comprised of four independent self-contained fluid filled cables buried an average of 10 feet in the seabed crossing between New Rochelle to the north and Hempstead Bay at the south. In both incidents, the damage resulted in significant loss of cable oil, with repairs and clean-up spanning several months with crews working around the clock. The costly operations occurred during January and February, with all work in 40 feet of water under severe weather conditions.

The Vesper Marine Guardian:protect system was installed by NYPA to alert vessels to the presence of buried



cables and to warn NYPA operators when shipping movements indicate anchoring might occur. Live data transmitted by ships near Y-49 through AIS is collected by Vesper Marine's Virtual AIS Beacons located at two NYPA shore facilities. The information collected pertaining to the vessel's route, speed and direction is sent to web-based software, which determines if a vessel's action is breaking any rules in a cable protection zone.

With the volume of traffic in the area, the agency needed intelligent monitoring capabilities that provide advanced warning of vessels that may potentially cause an incident, while ignoring the vast majority of vessels transiting the channel. If a vessel is determined to be anchoring within the cable area, an alert is automatically raised to the NYPA and a special AIS textual warning message is transmitted directly to the vessel alerting them of the situation. The ability to pro-actively notify vessels via a message sent to their navigation system provides additional protection against accidental anchor damage. This unique feedback loop is the first of its kind and reduces the potential for serious damage.

Prevention: a core Vesper Mission

"Prevention is the driving force at Vesper Marine," said Jeff Robbins, CEO, Vesper Marine. "Incidents like the New York Power Authority's previous anchor strikes caused a huge impact to the region in terms of financial costs, danger to work crews undertaking the arduous repair and interruption of power service, as well as the potential environmental impact of spilled cable oil. We are proud to help by providing a system to mark the cables, monitor local traffic, alert the NYPA of potential issues and notify vessels to prevent accidents before they occur."

The Vesper Marine Guardian:protect system is feature-packed enabling customization and control of how assets are marked, how alert rules are configured and what pro-active messages are sent to vessels. Operators can create multiple protection zones around each asset by defining buffer areas or drawing specific coordinates. Route position lists and asset location coordinates can be uploaded in a variety of coordinate formats. Operators can also set up vessel groups and assign individual vessels to groups of trusted vessels such as work boats and tenders. They can also configure alerts based on smart rules including vessel type and vessel groups, speed over ground, change in speed (sudden slowing), change in direction (veering off course).

Changes to rules can even be tested using historical data, rather than waiting months for the next event to test their effectiveness. They system is able to integrate radar information to include non AIS vessels, icebergs, oil spills and other radar targets to determine risk. Alarm types can be set based upon severity, such as, raising an audible and/or visible alarms within the control room or network operations center, and send automatic SMS or emails to a defined group of users.

"Vesper Marine technology was selected due to its unique ability to achieve all four objectives of making the cables more visible though our fully redundant and reliable AIS hardware, ensuring the security of data collected for real-time analysis, unique software continuously looking for potential anchoring situations, and pro-active notification to both NYPA personnel and directly to the vessel," continued Robbins. "Our 'rules-based' software reacts to many more parameters than just a vessel moving slowly over a period of time. This system alleviates the requirement of 24/7 response teams, as well as any inherent notification delays to the vessel, for a more efficient and effective solution."

Virtual Aids to Navigation are here to stay. That's a good thing. Whether marking a fixed channel, a special event, or replacing a physical aid that's been displaced by a casualty or storm, virtual ATONs can be the answer to marine safety challenges. Today, the exception rather than the rule; tomorrow these high tech and versatile tools may just be the primary navigation tool for mariners and stakeholders everywhere.

ELLIS ISLAND, LARGEST HOPPER DREDGE IN UNITED STATES MARKET

Built and delivered by Eastern Shipbuilding

In late November 2017, Great Lakes Dredge & Dock Corporation (GLDD), the largest provider of dredging services in the United States and a major provider of environmental and infrastructure services, took delivery of the new build ATB hopper dredge Ellis Island and tug Douglas B. Mackie after successful completion of United States Coast Guard and ABS regulatory sea trials. Representing a substantial reinvestment in the GLDD (and U.S. flag dredging) fleet, Ellis Island significantly increases the United States commercial Jones Act hopper fleet capacity as the largest hopper dredge in the United States market, with a carrying capacity of 15,000 cubic yards.

David Simonelli, President of Great Lakes' Dredging Division commented, "We are excited to take delivery of this advanced vessel which improves the competitiveness of our hopper group and represents a substantial capital reinvestment in the Great Lakes dredging fleet."

The state-of-the-art vessel's first assignment is the Mississippi Coastal Improvement Program project. The Jones Act compliant, Dual Mode Articulated Tug/Barge (ATB) Trailing Suction Hopper Dredge was built by Eastern Shipbuilding. With the tug designed and engineered by Ship's Architect, Inc. and the Hopper Dredge Barge detail designed by Bay Engineering, both vessels are based on concept designs by Ocean Tug & Barge Engineering.

The construction of the new build ATB hopper dredge ELLIS ISLAND and tug DOUGLAS B. MACKIE took place in Panama City, Florida, and employed more than 400 shipyard workers over the three-year construction period. Brian D'Isernia, CEO of Eastern Shipbuilding Group, stated "We are particularly proud of constructing this ATB Dual Mode Trailing Suction Hopper Dredge for Great Lakes Dredge & Dock Company, LLC as it is the largest hopper dredge built in the United State to date."

Now located offshore of Gulfport, Mississippi, Ellis Island commenced dredging operations in early December 2017 on the MSCIP Comprehensive Barrier Island Restoration Plan which will reconnect Ship Island East and West.

The Ellis Island at a glance:	***The Douglas B Mackie ATB Tug at a glance:***
Dimensions (Overall): 433'x 92'x 36'	Dimensions (Overall): 158'-4"x 52'x 32'-9'
Hopper Capacity: 15,000 CYS	Total Horsepower: 17,378 BHP
Dredge Power: (2) EMD ME20G7C-T3, 5,000HP each	ATB Coupler System: (2) Taisei Systems
Bow Thrusters: (2) Schottel STT2 Electric, Fixed Pitch	Main Engines: (2) MAK 12M32C-T3, 7,831HP each
Harbor Genset: (1) Caterpillar C32-T3 910kW @ 1800RPM	Generators: (2) 2,500kW, 6600VAC
Class: ABS	Aux. Generator: (1) Caterpillar C32-T3 730kW
Dredge Pump: 5,000HP EMD Diesel Engine	Classification: ABS

ESG Delivers M/V Magdalen to Weeks Marine

In late December, Eastern Shipbuilding delivered the Trailing Suction Hopper Dredger, the M/V Magdalen to Weeks Marine; another Eastern repeat client. Magdalen arrived on January 2, 2018, to Southport, North Carolina, and is now working on the protection of Highway 12 in the Buxton area on North Carolina's Outer Banks. Founded in 1919 as a stevedoring company, privately owned Weeks Marine, Inc. is one of the largest marine and tunneling contractors in the United States and Canada. The vessel was designed by Royal IHC.

LOA: 356'	Auxiliary Generator: (1) GE 6L250 (1423kW)	Horsepower: (2) 5,682 BHP
Beam: 79'	Emergency Gen: (1) Caterpillar C18 (425kW)	Main Engines: (2) GE 16V250
Depth: 27'	Booster Pump Power: (2) @ 1600kW	Class: LR
Flag: USA	Dredge Pump Power: (1) @ 1600kW	Hopper Capacity: 8,550 yd^3

Damen Delivers Cutter Suction Dredger 450 in Finland

Damen has delivered a Cutter Suction Dredger 450 in Finland. This is the first time a Damen Cutter Suction Dredger has been deployed in the Scandinavian market. The new dredger was delivered in only a few weeks from stock and has been put to work straight away in the Port of Pori, where it is dredging at a depth of 4.5 meters. The Damen CSD450, which can dredge up to 14 meters deep, offers Vesirakennus Ojanen Oy the advantage that it has continuous production via the CSD's pipeline to the designated disposal areas. A Damen CSD is suited to ports and rivers that have a lot siltation and stones, and it is also a robust machine, well able to operate in harsher, icy conditions. These dredgers are also active in the Arctic, Canada and Russia. The company also chose Damen's navigation package for precision dredging and monitoring.

Metal Shark Patrol Boat Joins PRPD Fleet

Louisiana-based boatbuilder Metal Shark has delivered its latest law enforcement patrol boat to the Puerto Rico Police Department (PRPD). The 35-foot Defiant welded aluminum pilothouse patrol vessel, built at Metal Shark's Jeanerette, LA production facility, joins the fleet of 36-foot Metal Shark Fearless-class high performance center console patrol boats delivered to the PRPD a year ago. The PRPD's newest Metal Shark features a fully-enclosed, climate-controlled pilothouse, outfitted with Shockwave shock-mitigating seating for a crew of four. Triple Mercury 300HP Verado four-stroke outboards provide speeds in excess of 45 knots, offering nimble handling and a smooth dry ride. A Wing urethane-sheathed, closed-cell-foam collar affords impact protection during docking and boarding, while port and starboard dive reliefs facilitate water access.

Damen Wins Contract to Convert Dredge to Dual-Fuel LNG/MGO

Damen Shiprepair & Conversion has been awarded a contract to undertake the conversion of a dredger to dual-fuel capability combining LNG and MGO. This will be the first conversion of its kind to take place in Europe. The contract was awarded by Rouen-based GIE Dragages-Ports with regard to its 117meter, 8500m³ trailing suction hopper dredger Samuel de Champlain. The conversion is part of an EU-supported initiative to promote LNG propulsion in short-sea vessels operating along the European Atlantic coast. Under the contract, Damen is delivering a turnkey package that includes engineering, procurement and support. The vessel was originally built in 2002 and is the largest vessel in the GIE Dragages-Ports fleet.

Jensen's Proven Workboat Design Selected for NAVSEA New-Build

Jensen Maritime Consultants announced that one of its workboat designs will be used by a Pacific Northwest boat builder to fulfill a construction project for the Naval Sea Systems Command (NAVSEA). Jensen will supply a functional and regulatory design package. The U.S. Navy will use the 22,000-pound bollard-pull workboat around the world to assist barges, submarines, and other naval vessels; open and close security barriers; and tow or push floating port operations support equipment. The vessel has two Pullmaster hydraulic deck winches for use in multiple mooring configurations and heavy-duty fendering to offer optimal protection when performing such work. The push knees are also radiused toward the top for use when pushing against vessels with flare. Unique to the workboat is a removable cabin and push knees, which allow it to

be transported over-the-road by truck. The workboat also has kort nozzles and flanking rudders to improve steering when operating in reverse, and skegs for directional stability while underway and structural support to facilitate drydockings and transport.

Class: ABS	Lifting Davit: 500 pounds	Engines: Twin Cummins QSM11-455
LOA: 41'	Delivery Date: Fall 2018	HP: 450 BHP at 2,100 RPM each
Beam: 16' – 7"	Gears: ZF W325	Designer: Jensen Maritime

First of Ten Stan Tug 1907 ICE completed by Great Lakes Shipyard

The first of ten Stan Tug 1907 ICE vessels has been delivered by Great Lakes Shipyard to its sister company The Great Lakes Towing Company. Named Cleveland, she is a significant milestone in a licensing program between Damen Shipyards Group and Great Lakes Shipyard. While the initial agreement is for the series build of ten tugs, the vessels will also be available to third party buyers on a priority basis. The Stan Tug 1907 ICE is a compact design capable of 30.0-tons of bollard pull. Its relatively small size and high maneuverability make it ideal for the narrow waterways with their many low bridges that characterize the Great Lakes region. The ability to operate safely in icy waters is also essential given the very cold temperatures that occur there.

Modutech Marine's Work Boat Medium

The US Navy has dedicated ports and support facilities worldwide and they need efficient and handy boats to support the warhorses. To meet this requirement, the naval architect firm Hockema & Whalen and Associates have developed a suitable tug. Currently, the Navy has 24 of these tugs, designated Work Boat Medium, on order from Modutech Marine of Tacoma, Washington. The first was delivered in December of 2017 with the others to follow in sequence through December 2019. Triple shutter-type rudders are mounted behind each prop. A pair of Bloom deck winches are mounted forward, port and starboard, so as to function with a pair of cheek blocks mounted alongside the pilothouse for making up to a barge with the push knees. A towing bitt is mounted on the after deck. Heavy bollards are mounted on both sides for mooring and for working barges or other equipment on the hip. D-Rubber fendering surrounds the hull, including the chine, and is mounted on the push knees that extend below the waterline. The wheelhouse has overhead windows for working alongside ships.

LOA: 30'	Engines: (2) Cummins QSL 9 diesels	HP: each engine 285 HP
Beam: 15'	Total Bollard Pull: 17,500 pounds	Gears: ZF W325
Draft 5' – 5"	Davit: 400-pound Capacity	Maximum speed: 9 KT

Armstrong Marine Catamaran Completes Inaugural Hawaii Tour

Port Angeles, Washington based boat builder Armstrong Marine's most recent launch, the 40' catamaran Mirai, ran its first passenger tour in Oahu in January. Four Evinrude outboards totaling 1,000 horsepower give the vessel a running speed of 47 mph. The 49-passenger USCG Subchapter T tour boat features two heads, a sun canopy, and aft raised wheelhouse providing the captain with clear visibility. Armstrong Marine's design paired with the unique vinyl wrap make for an eye-catching vessel.

Crowley to Build 100mb Alaska Class ATB

Crowley Fuels LLC has signed a construction contract with Bollinger Shipyards to build a new Alaska Class 100,000-barrel-capacity articulated tug-barge (ATB) to transport multiple clean petroleum products in the Alaska market. The Alaska-class vessel has an expected delivery in the fourth quarter of 2019. The contract with Bollinger includes an option to build a second ATB. Crowley's marine solutions group has been contracted to provide vessel construction management services in the shipyard from final design phase through to delivery. Jensen Maritime designed the 483-foot ATB to meet Ice Class and Polar Code requirements. The tug's main GE engines, as well as the barge engines, meet U.S. EPA Tier IV standards. The barge features a ballast water treatment system. The ATB tug is fitted with a patent-pending closed-loop ballast system, whereby the tug's freshwater ballast is transferred to a retention tank on the barge. There is no ballast water treatment system on the tug, eliminating any overboard discharge of ballast from the tug.

AMP Names Woodruff as President


Allegretti


Paxton


Weakley


Woodruff

The American Maritime Partnership (AMP) announced the election of **Matt Woodruff** of Kirby Corporation as its new President. He succeeds **Thomas Allegretti**, President & CEO of The American Waterways Operators. Woodruff is Vice President of Public and Government Affairs for Kirby Corporation and serves as the Southern Region Chairman of the AWO and Vice Chairman of the Inland Waterways Users Board. Joining Woodruff in elected leadership positions on the AMP Board of Directors are **Michael Roberts** of Crowley Maritime Corp., **James (Jim) Weakley** of Lake Carriers' Association, and **Matthew Paxton** of Shipbuilders Council of America (SCA).


Moy


Duffield


Mason


Smith


Sumner

Beazley Appoints Moy as US Marine Underwriter

Beazley has appointed **John Moy** as US marine underwriter within its US marine platform. Moy will be responsible for underwriting and building the company's US hull, protection & indemnity (P&I) and liability business for the marine and marine construction sectors. Moy joins from Water Quality Syndicate in New York where he was Chief Underwriting Officer.

OSVDPA Elects 2018 TAC Representatives

The Offshore Service Vessel Dynamic Positioning Authority (OSVDPA) announced the election of Individual and Corporate Membership Representatives to its Technical Advisory Council (TAC). Captain **Steve Mason** (Individual Representative) and London Offshore Consultants (Corporate Representative), represented by **Stuart Duffield**, were elected to represent their members on the TAC for 2018. Capt. Mason is a Master of an OSV, in the offshore oil and gas industry for more than two decades. Duffield will be serving his second term on the TAC as a Membership Representative and is LOC's Vice President, Marine Assurance since 2013. OSVDPA Executive Director **Aaron Smith**, said, "I know both of these gentlemen will be outstanding representatives of our Members and ensure the fleet and industry have a voice within the OSVDPA."

Foss Announces New CFO

Bryceon Sumner joined Foss Maritime as Chief Financial Officer. Prior to joining Foss, Sumner served as COO and CFO for public and private companies and as a senior financial officer of a $60 billion government banking insurance fund. He began his career at Ernst & Young working on several IPOs, including a banking tech IPO that was later sold for $3.9 billion. He graduated from the University of Georgia with a BBA in accounting and the University of Texas with an MPA in accounting.

Crowley's Solutions Group Reorganizes, Names Leadership

Crowley Maritime Corp.'s solutions group announced that it is reorganizing and establishing new leadership to better serve customers. **Jay Edgar**, new to Crowley, has been appointed vice president of the company's newly formed engineering services team, including subsidiary Jensen Maritime. He joined Crowley from Glosten, and has a BS in naval architecture and marine engineering from Webb Institute. **Ray Martus**, vice president, now presides over the project management team. His scope of work includes completion of Crowley's LNG-fueled ConRo ships. Vice President **Mike Golonka** continues to lead the government services group. Crowley is also creating a unified government business development team that will include **Owen Clark**, **Andy Rabuse** and **Joe Martin**, directors; **Jason**


Cuprill-Comas


Daly


Burton


Peratt

Nuss, manager; **Sean Thomas**, vice president; and **Bleu Hilburn**, who has been promoted to a vice president, with a focus on the U.S. Transportation Command (TRANSCOM). **Rob Clapp** has been named vice president, finance and contract management, with responsibility for supporting the business activities of the solutions group, with a primary focus on government contracts. **Tim Burke**, director, proposal management, has been tapped to lead the team responsible for preparing and submitting proposals and bids. Supporting the solutions team's commercial business development activities is **Bryan Nichols**, who joined Crowley in 2015 from Vigor Fab in Seattle.

Governor Brown Appoints Cuprill-Comas Port Commission President

Oregon Governor Kate Brown has appointed **Alice Cuprill-Comas** as Port of Portland Commission President. Cuprill-Comas is SVP and general counsel for Oregon Health & Science University. She replaces Jim Carter who completed an eight-year term as Commission President. Before joining OHSU in November 2012, Cuprill-Comas was in private practice for more than 15 years, most recently as a partner at Ater Wynne, LLC in Portland. Cuprill-Comas earned a BA Degree with honors from the University of Texas, and a JD from Lewis & Clark in Portland.


Truschinger


Strecker


Hamdy


DeOrchis


O'Connor


Lasse

Holland & Knight Elevates K. Blythe Daly to Senior Counsel

Holland & Knight has promoted **K. Blythe Daly** to Senior Counsel. Daly's practice encompasses a broad range of domestic and international commercial shipping, commodities and yacht matters on behalf of owners, charterers, commodities traders, freight forwarders, insurers, logistics providers and cargo interests. While at Holland & Knight, Ms. Daly has been seconded to an international P&I club based in Norway and a bulk carrier owner/operator with offices in Newport, RI.

Burton to Lead Albin Pump's U.S. Office

Albin Pump Marine has established a North American office and warehouse in Miami, Florida. **Brad Burton** has been named general manager to lead the venture. Burton has over 30 years of sales management experience. Most recently, he was Thetford Marine's OEM sales manager. Prior, he held similar roles at Aqua Signal, Faria Marine Instruments and Guest Corp.

Peratt Appointed President of Damco Distribution Services

Damco Distribution Services announced that **Bill P. Peratt** has been named president. Bill has a long history with the Maersk Group, having started with the company in 1998, worked in various leadership positions at APM Terminals, Bridge Terminal Transport and most recently in Damco as Senior Director, West Coast Division.

Speedcast adds Truschinger as CIO

Speedcast announced the appointment of **John Truschinger** as Chief Information Officer. Truschinger is a veteran of the U.S. Marine Corps and has 35 years' experience working in IT and supply chain, and most recently held the position of SVP and CIO for Transocean until 2015.

New Chief Financial Officer at DEUTZ AG

Dr. Andreas Strecker has been appointed to the Board of Management of DEUTZ AG, and will assume responsibility for Finance, Purchasing, Human Resources and Information Services. Strecker previously worked in managerial positions in the Bus and Controlling units of the Daimler Group, most notably for many years as the President and CEO of Daimler Buses North America.

Greensea Hires New VP, Business Development and Partnerships

Greensea, creator of OPENSEA, a marine industry operating platform, announced the creation of a new position and appointment of **Galal Hamdy** as Vice President, Business Development and Partnerships. Galal has spent the past 8 years working for Cox Automotive leading business development for their digital marketing business unit.

DeOrchis, O'Connor Appointed to ACMF Board

Montgomery McCracken has announced that **Vincent DeOrchis** and **Robert O'Connor** were recently appointed as board members of the American Caribbean Maritime Foundation (ACMF). ACMF was founded in 2015 to bring support to the Caribbean Maritime University, an institution in Jamaica for maritime education, training, research and consultancy. DeOrchis is a partner in the Litigation Department of Montgomery McCracken and co-chair of the firm's Maritime and Transportation practice group. He handles cases involving cargo, charter party, limitation of liability and hull claims. O'Connor is a member of Montgomery McCracken's Maritime and Transportation practice group, specializing in environmental matters relating to OPA 90, emissions regulations under MARPOL, and criminal investigations.

GLDD Wins Largest USACE Dredging Contract Ever Awarded

Great Lakes Dredge & Dock Corporation (GLDD) announced the receipt of a $213.3 million award for the Post 45 Charleston Entrance Channel Maintenance and New Work Dredging – Contract 2 Project base contract. The scope of work includes excavation of approximately 8 million cubic yards of material to deepen a portion of the Charleston, South Carolina harbor entrance channel. Work is expected to be completed by the


Mercury Marine


Middlebrook


Paxton


Gillette, Alfultis & Johnston

end of 2020. Lasse Petterson, GLDD CEO said, "This historic award adds to Great Lakes' already strong position in the market for deepening projects, having completed the PortMiami Deepening project in 2015 and with work currently taking place on the Savannah Harbor Deepening."

Mercury Marine Canada Celebrates Safety Milestone

Mercury Marine Canada celebrated a major milestone at its Milton, Ontario plant, reporting one million hours of no lost time injury. Milton, Mercury's Canada headquarters, has been injury-free since 2010. The plant has 58 employees and houses corporate functions such as finance, sales, marketing, service and is home to Mercury finished goods.

St. Lawrence Seaway System Finishes Strong in 2017

The St. Lawrence Seaway System, North America's binational marine highway stretching 2,300 miles from the Atlantic Ocean to the Great Lakes, reported strong gains during the 2017 navigation season including a standout year in iron ore, dry bulk and general cargo shipments. The final tonnage results – 38.1 million tons – reflect solid increases over the previous year, including a 9 percent jump in total cargo traffic "We are pleased to see the strong finish for the year, particularly with respect to iron ore shipments," said **Craig Middlebrook**, Deputy Administrator of the U.S. Saint Lawrence Seaway Development Corporation. "These numbers validate the importance of the System as an essential trade artery and reflect the continued growth in manufacturing, construction and other industries throughout the region."

Great Lakes Iron Ore Trade Up 11 Percent in 2017

Shipments of iron ore on the Great Lakes totaled 60.3 million tons in 2017, an increase of 10.9 percent over 2016 and the highest total recorded since 2012. The 2017 ore float also bettered the trade's 5-year average by 4.6 percent. Loadings at U.S. ports totaled 55.75 million tons, an increase of 13.4 percent, this despite the fact that Escanaba, Michigan shipped its final cargo on April 18. Following that, all domestically mined iron ore had to transit the locks at Sault Ste. Marie, Michigan, in order to feed blast furnaces in Indiana, Ohio, Michigan, and Pennsylvania. The Lake Superior ore ports that ship through the Soo Locks saw their loadings increase by 9.9 million tons, or 23.6 percent.

GLDD Named Winner of WEDA's 2017 Safety Award

Great Lakes Dredge & Dock Corporation has been named winner of the Western Dredging Association's (WEDA) 2017 Annual Safety Excellence Award for a Dredging Project. Thirteen organizations have received the award since its inception in 2008. The John Redmond Dredging Project was a design/construct dredging contract that included the hydraulic dredging of 3,000,000 cubic yards of material from the John Redmond Reservoir near Burlington, Kansas.

SCA President Paxton Testifies on State of Shipyard Industry

In testimony before the House Subcommittee on Coast Guard and Maritime Transportation, **Matthew Paxton**, President of the Shipbuilders Council of America (SCA) described the capability and capacity of the industry to build and maintain a 355-ship Navy as well as the future of the U.S. flagged maritime industry. Paxton cited a 2015 Marad Economic Benefit study, highlighting the nearly "110,000 skilled men and women directly employed in the Nation's private shipyards building, repairing and maintaining America's military and commercial fleets."

SUNY, FSMAA Ink Pact, SUNY Maritime Foundation Launched

Rear Admiral **Michael Alfultis**, president of SUNY Maritime, has signed two agreements setting SUNY Maritime College on a new course for success. The College and the Fort Schuyler Maritime Alumni Association (FSMAA) are now partners for the benefit of the College, its students and alumni. On the same day, the SUNY Maritime Foundation was launched


Gulfport ROD


Naatz


Newsome


Starck

publicly to support the College's strategic initiatives, to expand its reach and development of additional resources. **Dan Gillette** '97, FSMAA president and RADM Alfultis signed an historic memorandum of agreement that promotes student and alumni successes and connection. Captain **Robert Johnston** '69 is president of the newly established Maritime Foundation.

Gulfport Receives USACE RoD for Expansion Project

The Army Corps of Engineers recently released the Record of Decision (ROD) for the Port of Gulfport Expansion Project. The ROD details the Corps of Engineers' decision on all of the issues discussed in the Final Environmental Impact Statement (EIS), including the environmental impacts associated with the Port of Gulfport Expansion Project. This ROD paves the way for the next expansion at the port. "As we near completion of our Restoration Project, the Port is limited on how we can acquire waterfront land, making this a good time to receive the approved EIS permit," said Port CEO and Executive Director **Jonathan Daniels**. The project involves a 282-acre dredge and fill program for further expansion of the west pier, north harbor, east pier, and construction of a 4,000-linear foot breakwater system.

Updated Subchapter M FAQs now available

The Towing Vessel National Center of Expertise recently published the latest additions and updates to the Frequently Asked Questions regarding Subchapter M, inspected towing vessels. To access the full library of FAQs regarding Subchapter M, visit TVNCOE's website at: ***http://www.dco.uscg.mil/tvncoe/***

IPAA: Expanding U.S. Offshore Potential Advances America First Energy Policy

IPAA Senior Vice President of Government Relations and Political Affairs **Dan Naatz** issued a statement welcoming the Department of the Interior's Five-Year Outer Continental Shelf (OCS) Oil and Gas Leasing Draft Proposed Program, which is a broad plan that includes nearly all offshore areas available for leasing: "Today's announcement advances a true America First energy policy, while further encouraging a robust public discussion about our nation's energy potential. IPAA has long-advocated for placing all of America's offshore energy potential on the table for consideration, including the Eastern Gulf of Mexico, the mid-Atlantic, and Alaska's waters, at this early stage in the decision-making process."

SC Ports 2017 Container Volume Up 13 Percent

South Carolina Ports Authority announced a calendar year-to-date container volume increases of 13 percent and the strongest July on record. Since the calendar year began, SCPA has handled 1.3 million twenty-foot equivalent units (TEU), compared to 1.14 million TEUs during the same period last year. **Jim Newsome**, SCPA president and CEO said, "We look forward to continuing this momentum as fiscal year 2018 progresses and expect to see fairly strong volumes this fall." Having been named one of six "new start" projects and receiving $17.5 million in construction funding in the U.S. Army Corps of Engineers (USACE) Fiscal 2017 Work Plan, the harbor deepening to 52 feet continues to move forward toward construction this fall.

The Great Lakes Towing Company & Great Lakes Shipyard will Hire 100

The Great Lakes Towing Company and Great Lakes Shipyard announced plans to hire 100 employees. The Towing Company is the owner/operator of the largest fleet of ship-docking tugboats on the U.S. Great Lakes-Saint Lawrence River Seaway. Great Lakes Shipyard is a full-service ship repair and construction operation on the Great Lakes. "At The Towing Company, we're looking for great people to join our team," said **Joe Starck**, the Company's President. "We are committed to hiring a diverse team of people – providing employees with a unique opportunity to learn and develop through training to preserve our position as a leader in the Great Lakes community and throughout the industry."

South American Pushboats Convert to Vesconite

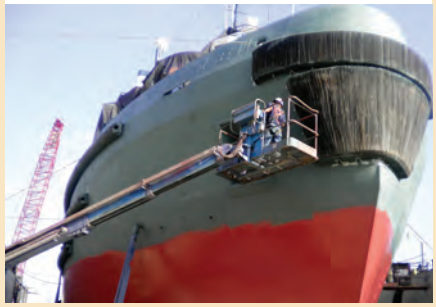
Muddy and silty rivers and estuaries wreak havoc on rudder bearings. That's why Vesconite, the high-performance marine polymer, is such a popular alternative to bronze, nitrile and other composites for pushboats on the Paraguay and Paraná Rivers. Low-friction Vesconite excels in dirty water. Its exceptional wear properties are essential when moving barges in tight confines with high traffic.

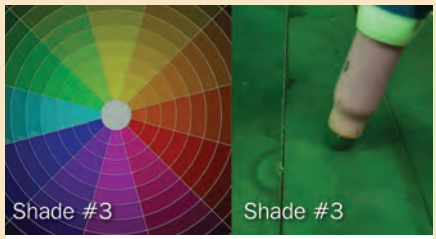
www.vesconite.com

Carboline Introduces Carbozinc 608 HB

Carboline's Carbozinc 608 HB is the first 5-10 mil zinc primer on the market. More primer means more protection. It is highly surface tolerant, quick to cure and has excellent film build properties yielding a high zinc loading per square foot. When coupled with a micaceous iron oxide, MIO, flake-reinforced epoxy phenalkamine binder, the resultant film is an extremely durable and effective corrosion resistant coating.

www.carboline.com





Miller's ClearLight Lens Technology for Digital Welding

Miller Electric Mfg. Co. is expanding ClearLight Lens Technology to all digital welding helmets. ClearLight optimizes clarity for welding operators so they can produce better welds with less rework. Operators see natural color tones and get a crisp, high-definition view. The helmet technology reduces eye fatigue, increases productivity and improves performance. The 1/1/1/2 optical clarity rating of ClearLight lenses allows a true 3.0 light state.

www.MillerWelds.com/ClearLight

2017 JMP Marine Sales Jump 30%

2017 was a notable year for JMP Marine. The company saw a record 30% increase in sales over the previous year and marked its 40th anniversary of manufacturing premium OEM and aftermarket sea water pumps, strainers and impellers. The results are due in part to growth in replacement pump sales. JMP offers products for Caterpillar, Cummins, Detroit Diesel, John Deere, Kohler, Mitsubishi, Volvo Penta, Yanmar and others.

www.jmpusa.com

Cortec MCI-2005 Admixture Raises Seawall Service

Reinforced concrete seawalls can last more than 150 years, thanks to a high density concrete mix enhanced with Migrating Corrosion Inhibitor admixture MCI-2005. MCI Technology consists of two functional components: contact inhibitors and volatile corrosion inhibitors, some of which are amino carboxylates. They are nitrite-free and effective at very low doses. MCI Technology works by forming a protective molecular layer on steel surfaces embedded in the concrete.

www.cortecmci.com

Yanmar America's Yanmar Academy and Power Train

YANMAR America's YANMAR//ACADEMY and POWER//TRAIN at its GA-based EVO//CENTER provide an enhanced training experience focused on YANMAR's dealerships, employees, and customers. The YANMAR//ACADEMY consists of eight schools; six focused on dealer training, one on employee training and one dedicated to customer training. POWER//TRAIN is the registration, curricula control and e-learning system for dealers and employees focused on sales, marketing, service, parts, finance and other business topics.

www.YanmarEvoCenter.com

DNV GL in JDP to Test Lubricants

DNV GL has launched a new joint development project (JDP) in cooperation with marine insurers The Swedish Club, Norwegian Hull Club, Gard and Skuld to test the potential influence of Environmentally Acceptable Lubricants (EALs) on failures in stern tube bearings. DNV GL will oversee detailed laboratory testing of EALs by Leonardo Testing Services Ltd. at the University of Sheffield (UoS), UK.

www.dnvgl.com

STADT's Patented Lean Propulsion

STADT AS of Norway has signed an agreement with W.A. Technical Sales to represent them in the Gulf of Mexico area. STADT Lean Drive technology is reliable patented technology used for many kinds of electric ship propulsion solutions, where the power sources can be arranged in many ways and combinations, such as LNG, MDO, HFO, batteries and fuel cells.

www.stadt.no / www.watechsales.com

Staying in Touch on the Water Never Easier

Glomex Marine Antennas' weBBoat 4G Plus coastal Internet antenna system receives Wi-Fi and 3G/4G cellular signals up to 20 miles from shore, amplifies and redistributes them as a hotspot within the boat, providing simultaneous access for 32 devices. Dual SIM card slots minimize data roaming charges while maximizing cellular coverage. In LTE mode, speeds can reach 100 Mbps on download; 50 Mbps on upload.

www.glomex.us

Hydrotab 3DHC Controller Now IP67 Waterproof

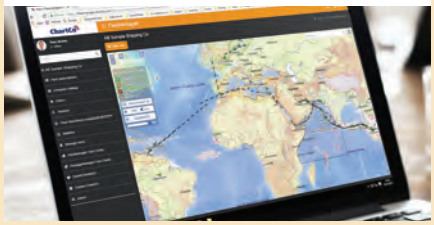
State-of-the-art Hydrotab Interceptor Trim Tabs are available for a wide range of boat sizes and styles. The 3DHC Controller is rated IP67 waterproof, perfect trim solution for center consoles, flybridges or any application where rain and spray are expected. Available in North America exclusively from GlobalTec Solutions, the ergonomic controller delivers instant three-axis control of the boat through an intuitive, user-friendly interface with day/night functionality.

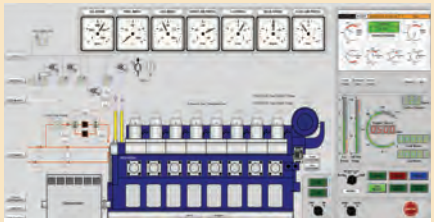
www.globaltec-solutions.com

ChartCo's FleetManager Portal

ChartCo's FleetManager enables shore-based customers to access live ship management and tracking data. The new, easy-to-use web-based FleetManager software works on any browser, as well as via smartphones and tablets. FleetManager offers a range of highly effective environmental, piracy and regulatory overlays that can highlight potential sources of delay or hazard. It also provides the unique ability to link with ChartCo's e-navigation platform – PassageManager.

www.chartco.com





Kongsberg Digital: DNV GL Approval for Engine Room Simulator

Kongsberg Digital has received DNV-GL statements of compliance for two of its Engine Room Simulator models designed to provide in-depth training on the K-Sim Engine simulator platform. The DNV GL-ST-033 Maritime Simulator Systems certification, which is based on the requirements of STCW Convention, Regulation I/12, was awarded to the DEDF Cruise Ferry and L11 MAN 6S70 ME SCC K-Sim Engine models in December 2017.

www.kongsberg.com

Fuji's Extended Range of FA-20 Grinders

Fuji Air Tools has extended its FA-20 series of compact 2" angle grinders and die grinders in order to offer customers the features that will meet local requirements. The FA-20 series now comprises seven distinct models and offers users the choice of a locking lever version, collet version and rear exhaust version. Applications include shipbuilding and oil & gas platforms.

www.fujitools.com

Hub Extension Adds 2.5" to Schmitt & Ongaro Wheels

Whether to increase legroom, optimize a standing position or provide added clearance for improved dash access and visibility, Schmitt & Ongaro Marine's Aluminum Hub Extension is the solution OEMs and boat owners need. It works with any of the company's polyurethane marine steering wheels, doubling the depth of the hub mounting space with an added 2.5".

www.schmittongaromarine.com

Fortress Anchors: Smart Choice for Commercial Applications

Ground tackle aboard traditional workboat and commercial fishing vessels typically relies on sheer dead mass for much of its effectiveness. Fortress Marine Anchors are the surprisingly lightweight, modern-day alternative. Recent renewals of ABS and DNV-GL certifications prove they're made for real-world anchoring conditions. High-performance, US-made Fortress anchors have been ABS certified since the early 1990s. Highly durable, they have no welds to fail.

www.fortressanchors.com

Water Needs Exceeded with FCI Watermakers

FCI Watermakers' high-output Poseidon+ exceeds the average water needs of a commercial vessel. Designed to run 24/7 with low maintenance overhead and costs, it reliably produces tens of thousands of gallons of pure, fresh water daily. The Poseidon+ is engineered to meet rigorous demands of commercial marine applications. Built in the USA, it boasts type approvals from ABS, GL, LR, and DNV.

www.fciwatermakers.com

Kent Immersion Suits: Serious Lifesaving Equipment

Abandoning a capsized or sinking vessel is something professional mariners never want to face. Designed for commercial fishing, shipping, and offshore oil crew, Kent Safety Products' USCG and USCG/SOLAS/MED Immersion Suits deliver superior protection from the elements for dramatically increasing the odds of survival. Built from 5mm flame-retardant, safety orange neoprene with SOLAS-grade reflective patches, the suits are made with high-visibility yellow.

www.kentsafetyproducts.com

Maersk Uses Vessel Technology's DP Network Product

Maersk Supply Service recently selected to use Vessel Technology's DPSS Net dynamic positioning (DP) network storm test unit on their vessel, the Maersk Nexus, prior to starting a contract with Suncor in Canada. The DPSS Net allowed Maersk to ensure that they complied with industry best practice of conducting network storm testing as defined by the Marine Technology Society (MTS) and DNV-GL.

www.vessel.technology

MARINE SUPERINTENDENT

BW Pacific Pte Ltd
Full Time, Technical Manager
Category: Superintendent / Foreman
Job Location: 2925 Briarpark, Suite 1295, Houston, Texas Houston, Texas, 77042 United States

Contact
Department
Email: bwsgp.jobs@bwmaritime.com
2925 Briarpark, Suite 1295, Houston, Texas Houston, Texas, 77042 US

Skills:

- Sailed on an oil / chemical tanker
- Minimum 3 year's shore experience in maritime industry
- Strong written and verbal communication skill
- Self-driven and capable of working independently
- US citizen or US green card holder

Description:

- Manage assigned ships on day to day matters with teams in Houston, Copenhagen, Singapore and affiliated manning offices
- Responsible for delivering on safety, security and environmental performance
- Fulfill responsibilities of CSO
- Ensure ships are acceptable for business and ready for SIRE and customer inspections as per VIQ & TMSA requirements
- Ensure ships comply with relevant industry and statutory requirements
- Ensure effective close out of all non-conformances, observations and deficiencies resulting from internal or external audits and sire inspections
- Audit and inspect ships as required
- Assess the risk and approve STS vessels proposed for business
- Investigate incidents, analyze root causes, close out deficiencies make recommendations and place preventive measures in place
- Assess the operational risks from a marine / navigational perspective
- Responsible for briefing and debriefing officers on marine matters
- Assist with and complete pre-fixture / post-fixture questionnaires, Q88, HVPQ from oil majors and terminals
- Respond to security questionnaires from oil majors
- Respond to queries from Copenhagen and Houston office
- Guide vessels / commercial teams on Cargo loading, discharging, stowage and tank cleaning as required
- Develop relations with USCG, terminals and customers in the region
- Actively participate in the development of the quality management system and engage in the process for the continuous improvement of departmental procedures

MARINE ENGINEER - NEW VESSEL

Sealord Group New Zealand
Full Time, Engineer
Category: Engineer / Naval Architect

Skills:

You will have a minimum MEC 4 ticket or equivalent with good machining and general engineering skills with a strong commitment to Health and Safety.

Description:

Sealord is a global seafood enterprise with a world-wide fishing, processing and marketing network. Sealord retains its home base in New Zealand and has led the seafood industry in the careful and sustainable management of fish and seafood resources.

The New Vessel

This will be the first new vessel for New Zealand's deep water fishery in 20 years and will be our most advanced, efficient, versatile and sustainable vessel yet. The purpose-built vessel will be furnished with all the latest electronics and technologies; including Precision Seafood Harvesting systems, and she will have an extremely efficient main engine and componentry, including the ability to produce her own electricity via the winch systems.

About the role

As an engineer working on the new vessel you will have a minimum MEC 4 ticket or equivalent and will assist the Chief engineer with the mechanical and electrical performance of the vessel's propulsion, fishing, processing and ancillary systems, and will lead and manage the engineering crew. The role will also ensure all engineering functions are undertaken in compliance with OSH, MNZ, DNV, MPI requirements.

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Committed to the Coast

On the Outer Banks, NC—*Weeks Marine's (Weeks)* new hopper dredge, the *Magdalen*, arrived in North Carolina after her maiden voyage from Eastern Shipbuilding in Panama City, Florida. She will finish up the Highway 12 shore protection project before moving on later this winter to the New Jersey Shore.

The Owners, Board, and Management of Weeks congratulate the Dredging Equipment Group and the many suppliers who made her construction a success. In a company with considerable capital assets, the Magdalen is largest single investment in Weeks' 99-year history. The entire team at Weeks looks forward to years of productive service ahead.

Weeks Marine is a fully integrated dredging and marine construction company headquartered in Cranford, NJ. Weeks has successfully completed marine construction and dredging projects throughout North and South America. Established in 1919, the company is a leader in the maritime construction industry, and operates a network of regional offices in New Jersey, Louisiana, Texas, Hawaii, Ontario and Nova Scotia.

WEEKS

www.weeksmarine.com

EOE/AA M/F/Vet/Disability

YOU DON'T WORRY ABOUT KEEPING YOUR COOL —

UNTIL YOU LOSE IT.

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Expect peak cooling efficiency.
Expect trusted dependability.
Expect expert support.

R.W. Fernstrum Cooling Solutions.

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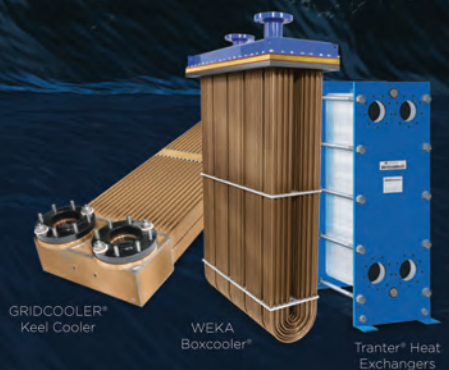

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