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

Marine News

Volume 32 • Number 3

MARCH 2021

www.marinelink.com

Pushboats, Tugs & Barges

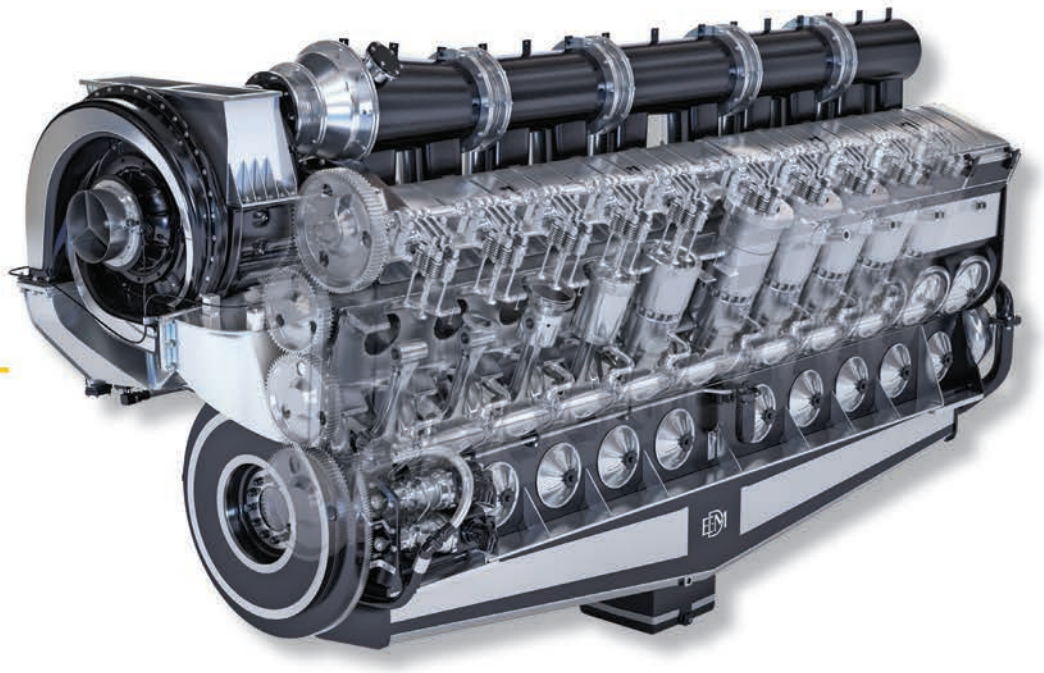
Motoring along...

Inland Waterways
Regulators come through on vital issues

Education & Training
The U.S.' new training ships usher in a new era

Decarbonization
It's all hands on deck

Marine Systems, Inc.



The E 23 (IMO II-EPA T3) and E 23B (IMO III-EPA T4F) are available in 8, 12, 16 and 20 cylinder configurations with power ratings from (1675 hp) to (5500 hp).
*"Please consult MSI for specific application ratings"

ABS · BUREAU VERITAS · RINA · CCS · DNV·GL

TWO CYCLE ADVANTAGE

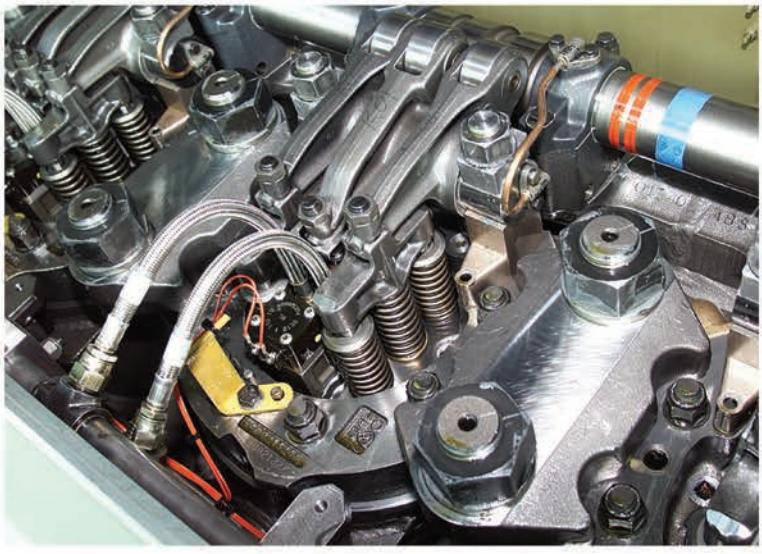
ENDURING DESIGN. LEGENDARY HERITAGE.

BEST IN-CLASS TRANSIENT RESPONSE

- E 23 offers the performance of a high speed engine with the durability advantage of a medium speed engine.
- Ample power margin throughout the entire operating speed range allows for optimized engine sizing and a single speed reduction gear.
- Avoids engine lugging under demanding vessel maneuvers.
- Accepts 100% block load in constant speed applications.

TOTAL COST OF OWNERSHIP ADVANTAGE

MAXIMUM UPTIME.



PARTS – LABOR – FLUIDS

Downtime is expensive. EMD engines are designed to minimize the amount of time needed for maintenance and repairs in order to maximize your productivity, keeping operational costs to a minimum.

- **Reduced fuel consumption over previous models due to EPA T4F / IMO III technologies and low idle speed.**
- **Easy non-invasive inspection of cylinder components for simple predictive condition-based maintenance.**
- **Simple overhauls to minimize downtime – Power Assembly (head, liner, piston, rod) can be removed and replaced as one unit.**
- **Closed loop dosing control system optimizes (Diesel Exhaust Fluid) DEF usage.**
- **No oil change required between overhauls unless indicated by oil sample analysis.**
- **Lowest life cycle cost per horse power / hours of operation.**

Ph: (985) 223-7100 • www.marinesystemsinc.com

ESI MARINE SYSTEMS, INC. MSI

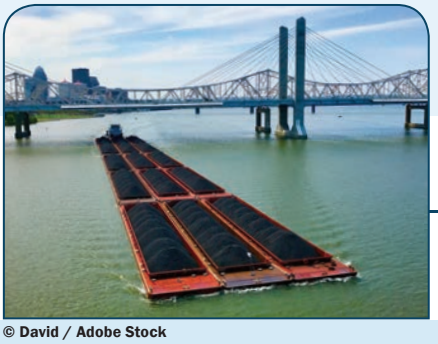
Contents

Marine News March 2021 • Volume 32 Number 3

Features

James Lowe / U.S. Army Corps of Engineers

MARAD


© David / Adobe Stock

On the Cover

Innumerable market and operational challenges have done little to prevent the tug, towing and barge industry from doing what it does best: pressing on.

Versatile Tugs

EASTERN SHIPBUILDING GROUP, INC.

Nelson Street Facility
2200 Nelson Street
Panama City, FL 32401

Allanton Facility
13300 Allanton Road
Panama City, FL 32404

sales@easternshipbuilding.com
850-763-1900

www.easternshipbuilding.com

Editor's Note

Eric Haun, Editor,
haun@marinelink.com

It's hard to believe it's been almost a year since COVID-19 totally upended daily life here in the U.S. Obviously, so much has changed over these surreal and unforgettable months, and the virus' mounting toll is immeasurable. But with so much focus on what's changed, it's easy to take for granted the things that haven't. The tug, towing and barge industry has been one of those constants, maintaining the vital flow of maritime commerce despite very difficult circumstances. Personally, I find the industry's resolve to be incredibly encouraging. "I'm proud and humbled to work for an industry that gets the job done 24-7," AWO president & CEO Jennifer Carpenter said in this month's Insights interview (page 10). Hear, hear!

And while much talk on America's political landscape has turned negative, this industry can still glean optimism from several key pieces of recent legislation. From recent Jones Act wins to WRDA 2020, there's certainly much to be happy about. Read more on WRDA starting on page 22.

Another good news story for the U.S. maritime industry comes in the form of the five National Security Multi-Mission Vessels (NSMV) slated to be built at Philly Shipyard. With the arrival of these new ships, cadets at the state maritime academies will finally be able to train on modern, purpose-built vessels. The technological leap beyond the decades old vessels currently in use is huge, and the new ships' impacts will be even larger. A feature article on the NSMVs begins on page 28.

Marine News (ISSN# 1087-3864) is published monthly except for February, August and December by Maritime Activity Reports Inc. 118 E 25th St. New York, NY 10010-1062. Periodicals Postage Paid at New York, NY and additional mailing offices. POSTMASTER: Send all UAA to CFS. NON-POSTAL AND MILITARY FACILITIES send address corrections to Marine News 850 Montauk Hwy, #867 Bayport, NY 11705.

The publisher assumes no responsibility for any misprints or claims or actions taken by advertisers. The publisher reserves the right to refuse any advertising. Contents of the publication either in whole or part may not be produced without the express permission of the publisher.

Marine News

(ISSN#1087-3864) (USPS#013-952)
Florida: 215 NW 3rd St., Boynton Beach, FL 33435
tel: (561) 732-4368; fax: (561) 732-6984
New York: 118 E. 25th St., New York, NY 10010
tel: (212) 477-6700; fax: (212) 254-6271
www.marinelink.com

PUBLISHER
John C. O'Malley • *jomalley@marinelink.com*

Associate Publisher & Editorial Director
Greg Trauthwein • *trauthwein@marinelink.com*

Editor
Eric Haun • *haun@marinelink.com*
Tel: 212-477-6700

Contributing Writers
Tom Ewing • Barry Parker • Jeff Vogel

PRODUCTION
Production & Graphics Manager
Nicole Ventimiglia • *nicole@marinelink.com*

SALES
Vice President, Sales & Marketing
Rob Howard • *howard@marinelink.com*

Advertising Sales Managers
National Sales Manager
Terry Breese • ***breese@marinelink.com***
Tel: 561-732-1185 Fax: 561-732-8414

Lucia Annunziata • ***annunziata@marinelink.com***
Tel: 212-477-6700 **ext 6240** Fax: 212-254-6271

John Cagni • ***cagni@marinelink.com***
Tel: 631-472-2715 Fax: 561-732-8063

Frank Covella • ***covella@marinelink.com***
Tel: 561-732-1659 Fax: 561-732-8063

Mike Kozlowski • ***kozlowski@marinelink.com***
Tel: 561-733-2477 Fax: 561-732-9670

Managing Director, Intl. Sales
Paul Barrett • *ieaco@aol.com*
Tel: +44 1268 711560 Fax: +44 1268 711567

CORPORATE STAFF
Manager, Marketing
Mark O'Malley • *momalley@marinelink.com*

Accounting
Esther Rothenberger • *rothenberger@marinelink.com*
Tel: 212-477-6700 **ext 6810**

Manager, Info Tech Services
Vladimir Bibik

CIRCULATION
Kathleen Hickey • *k.hickey@marinelink.com*
Tel: 212-477-6700 **ext 6320**

TO SUBSCRIBE:
Subscriptions to ***Marine News*** (9 printed issues) for one year are available for $50.00; Two years (18 printed issues) for $80.00.
Send your check payable to:
Marine News, 118 E. 25th St., New York, NY 10010

Member
BPA WORLDWIDE BRAND REPORT
Business Publications Audit of Circulation, Inc.

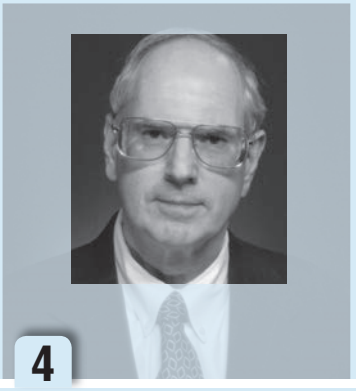

At Hyde Marine, the soul of our company is in every ballast water treatment system we make.
Learn more about what Hyde Marine puts into manufacturing the highest quality ballast water treatment systems in the world.
WITH US, IT'S WHAT'S
INSIDE THAT COUNTS.
+1.724.218.7001 | www.hydemarine.com
Hyde Marine
Ballast Water Management Technology
A CALGON CARBON COMPANY

Contributors


1


2


3


4


5

1 Tom Ewing
is a freelance writer specializing in energy and environmental issues. He contributes regularly to this magazine.

2 Tahir Faruqui
is General Manager for Shell Global Downstream LNG where he is responsible for developing the global LNG small scale and transport business, including Road and Marine.

3 David Hume
is the founder of the The Liquid Grid. He is a graduate from the U.S. Merchant Marine Academy and holds both an MS and an MBA from the Massachusetts Institute of Technology. He is a U.S. Coast Guard licensed marine engineering officer in the Merchant Marines and a Lieutenant Commander in the U.S. Navy Reserves.

4 James A. Kearns
Special Counsel at Jones Walker LLP, has represented owners, operators, financial institutions and end users for more than 30 years in the purchase, construction and financing of vessels engaged in both foreign and coastwise trades of the U.S. Kearns has earned an LL.M. (in Taxation) from New York University, J.D. cum laude from the University of Notre Dame, and a B.S.E.E., summa cum laude from the University of Notre Dame.

5 Karrie Trauth
is the General Manager of Shipping and Maritime for the Americas at Shell Trading (US) Company where she leads maritime and commercial professionals in providing operational and technical maritime solutions across Shell's Americas businesses.

PURPOSE-BUILT
FROM THE GROUND UP

What if YOUR material handler's purpose is a little different from the OTHER material handler's purpose?

When you want purpose-built, only SENNEBOGEN purpose-builds one machine at a time to meet your goals.

Think of the possibilities!

- Diesel and/or electric-drive
- 44,000 to 900,000 lbs.
- Rubber tired, tracked or stationary
- Custom boom & stick configurations

See how SENNEBOGEN can purpose-build the right machine for you

www.sennebogen-na.com | +1-704-347-4910

SENNEBOGEN®

By the Numbers

Maritime Guaranteed Loan Program ("Title XI" Loans)

The Maritime Guaranteed Loan Program provides federal loan guarantees to vessel operators to construct vessels in U.S. shipyards, and to modernize those shipyards. It was created by the Merchant Marine Act of 1936, and is more commonly referred to by the specific section of the law creating it—Title XI. However, the program as currently configured dates to 1993, when it was reformed to comply with requirements of the Federal Credit Reform Act of 1990.

The comparatively high cost of building ships in the United States relative to other countries discourages commercial operators from ordering vessels from U.S. shipyards, except when they are required to use U.S.-built vessels to engage in domestic trade. U.S. shipyards enjoy few economies of scale in building containerships and tankers due to the low volume of construction. Also, oceangoing vessels built in U.S. shipyards tend to be significantly smaller than similar vessels built abroad, as only a modest amount of domestic cargo is shipped by sea. Together, China, South Korea, and Japan account for over 90% of all ship production in terms of cargo carrying capacity. In general, shipbuilding is highly

© chirnoagarazvan / Adobe Stock

subsidized, as governments consider it an important source of employment not only in shipyards, but also in supplier industries such as steelmaking.

Under Title XI, the U.S. Maritime Administration (MARAD) offers loan guarantees intended to make domestic shipbuilding more attractive to vessel buyers. These guarantees permit both vessel buyers and shipyards to obtain financing on more favorable terms than would otherwise be made available by a commercial lender, offsetting the comparatively high costs of shipbuilding in the United States. A single guarantee may support the construction of more than one vessel. In return, MARAD collects a one-time fee equal to between 0.5% and 1.0% of the principal outstanding balance. Given the costs associated with shipbuilding, these fees can reach into the millions of dollars, and can be financed alongside the loan itself.

A wave of loan defaults during the 1980s prompted a reorganization of the program with a greater emphasis on creditworthiness. Congress appropriated new funds to underwrite guarantee subsidy costs during the 1990s. MARAD approved $1.4 billion in loan guarantees in 1998, the peak year. In 2001, a company that received $1.2 billion in loan guarantees to build two U.S.-flagged cruise ships went bankrupt, sending the loans into default. The economic downturn that followed the September 11, 2001, terrorist attacks was accompanied by additional loan defaults, and MARAD struggled to recover assets to offset payouts to creditors.

Since then, MARAD's credit assistance has been far more limited. Over the past decade, MARAD has approved seven Title XI loan guarantees for a total amount of $1.9 billion, supporting the construction of 19 vessels. MARAD has received few applications to build certain types of vessels most needed by the military, such as ships with truck ramps or onboard cranes able to unload cargo at underdeveloped or damaged ports. Of the vessels financed in the past decade, eight have been barges or combination tug-barges and five have been supply ships for offshore oil drilling platforms. In the past, several large loans have gone to building such platforms themselves.

As of June 2020, MARAD had $35.4 million available for subsidy costs associated with Title XI, enough to guarantee approximately $432 million in loans.8 Congress does not appropriate new funding for subsidies every year, though these funds do remain available for multiple years if unused. Its most recent appropriation was $27 million for FY2018. Absent congressional appropriations, the fees collected by MARAD from borrowers can be enough to allow the agency to guarantee additional loans.

As of December 2020, MARAD's portfolio contained 18 guaranteed loans worth a total of $2.5 billion, the newest approved in FY2020 and the oldest approved in FY2000. Six more applications for a total of $487 million in loan guarantees remained pending. A $331 million loan guarantee that was approved in March 2020 was the first to be issued since FY2016, and was the first to be issued under new rules that specify that the Federal Financing Bank replace commercial banks as the sole buyer of debt guaranteed under Title XI.

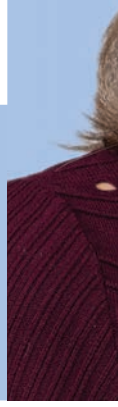
Reform proposals

Congress commissioned an audit of the program in 2003 after a series of defaults. MARAD is not a private-sector lender and is therefore not expected to turn a profit in pursuing its policy goal of strengthening the U.S. shipbuilding and merchant shipping industries, but it does have a secondary policy goal of responsible stewardship of taxpayer dollars. Auditors found that between 1993 and 2002, MARAD had underestimated the number of defaults and overestimated its ability to recover value from loans in default, and that it had not fully complied with regulations governing the program. A follow-up audit conducted in 2009-2010 by the Department of Transportation (DOT) Office of the Inspector General (OIG) found that MARAD had not yet fully implemented procedures for improving oversight of borrowers pursuant to recommendations of previous audits.11 OIG initiated a new audit of the Title XI program in December 2018, as required by the John S. McCain National Defense Authorization Act (NDAA) for FY2019 (P.L. 115-232). The results of the 2018 audit have not yet been published.

In its FY2021 budget request, the Trump Administration proposed the elimination of the Title XI program, and the transfer of the existing loan portfolio to the National Surface Transportation and Innovative Finance Bureau (also called the Build America Bureau) in DOT. Congress did not take these actions in the Consolidated Appropriations Act, 2021 (P.L. 116-260).

Jennifer Carpenter

President & CEO, The American Waterways Operators



Jennifer Carpenter joined The American Waterways Operators (AWO), the national trade association representing the inland and coastal tugboat, towboat and barge industry, in August 1990 and became its president and CEO in January 2020. This month, she weighs in on the unprecedented challenges encountered over the past year and addresses top priorities along the uncertain path ahead.

The world has changed drastically in the year since you took the helm at AWO. How have priorities shifted, both for AWO as an organization and for you as its leader?

JC: COVID-19 has impacted our agenda and our lives in ways that we just couldn't have predicted at the beginning of 2020. And it has become a top priority to help our members navigate all of the dimensions of this challenge, the health and safety aspects, the operational aspects, the economic implications. And helping them do that has become a big part of our advocacy agenda with Congress and with the federal agencies. It has impacted our safety agenda because we've worked very hard to provide forums and develop resources that they can use to meet the health and safety and operational challenges. And it has challenged us to find new ways of staying connected and in constant communication with our members. It's more important than ever that we know what is on their minds, what their concerns are, but we've had to do that differently, largely virtually.

Bigger picture, this whole experience reinforces the importance of deep listening to members, which was something that I talked about at the beginning of 2020 as a real focus. I have seen again and again throughout the last year how important it is to be listening to what members are experiencing. Nimbleness, the ability to quickly pivot to address changing and emerging circumstances. I said when I

came into this job that I wanted to work with members to really make AWO into their indispensable organization that is crucial to helping them survive, adapt and thrive in a constantly changing business and public policy environment.

We sure saw constant and big change last year. But I think fast, big change on both the business front and on the public policy front are in some ways going to be the new normal. We're not going to be dealing with a global pandemic every year, but fast, big change. So AWO has to be nimble, flexible and adaptable and in close touch with members so that we can retool, reconfigure and evolve to meet those challenges.

AWO has been advocating for prioritizing COVID-19 vaccinations for mariners. Why is this important?

JC: I would highlight three things. First, mariners, as we have seen over the last year and historically, are a key part of the essential critical infrastructure workforce, as the Department of Homeland Security recognized early last year. They have played and continue to play a key role in keeping our supply chain moving and really in supporting the economic and homeland security of the country. This is an important workforce that has an outsized impact.

Their living and working environment, second point. You're living and working in close quarters when you're on board a vessel. Once you're out there, if you have six, eight healthy people on a boat, you're kind of your own self-contained bubble, and that's a pretty good place to be. Companies are working very hard to make sure that folks are reporting to work healthy and that they're keeping them healthy, but there's a lot of COVID infection in communities all around this country. And it's really important that we get mariners vaccinated so they can safely come to work and operate in environments where you can't always social distance because it's close quarters.

The third thing is that there really is a need, and this goes a little bit to the how, in addition to the why. We need a national focus here, given the interstate nature of our workforce and their operations. As you know, a lot of the decisions about vaccination priority have been made by the states. They look to CDC guidance, and they've made their own decisions based on what's going on in their states. This is really complicated when you're talking about a mobile workforce where a mariner may live in State A, report to work in State B, get off the vessel in State C. It's challenging to deal with a multiplicity of state by state approaches. So we are urging that we look at the mariner workforce as a national asset, which in the grand scheme of things is not that large but has an outsized importance on economy and security. These doses are out there, and we need to establish a national track so that we can get them to mariners in a timely way.

With the virus holding onto much of the world's attention these days, how do you keep the balance to ensure other key issues are not overlooked?

JC: The fundamentals are more important than ever. Those public policies that provide the foundation for our industry are especially important when you're dealing with a crisis. The Jones Act, ports and waterways infrastructure, the need for rational, practical regulations, the importance of a focus on safety; those things are more important than ever so we don't sink barges and block channels and shoot ourselves in the foot when we're trying to keep the nation's commerce moving.

We've worked very hard to maintain those as a focus of our advocacy and to explicitly make the point to policymakers. There's a connection with COVID here. Our ability to do what we do on a day-in day-out basis and keep the supply chain moving, help the country keep the economy afloat, keep vital commodities moving during COVID depends on having the certainty of the Jones Act that keeps the supply chain in American hands, depends on having a port and waterways infrastructure where we don't have channels that have been silted up for lack of dredging or lock gates that are failing and now we've got a queue of tows that can't move, export grain that needs to get to market.

The good news is that the message has resonated with policymakers. When we look back at 116th Congress, our industry got some big things done. The National Defense Authorization Act had some very important provisions with respect to the Jones Act, tightening up procedures for Jones Act waivers to make sure that they're not being issued when not absolutely necessary. Clarifying that the constitution and U.S. laws, including the Jones Act, apply to renewable energy, development on the outer continental shelf, hugely important WRRDA, which got rolled into the end of year omnibus COVID relief bill. Very important in establishing a cost share change between the Treasury and the Inland Waterways Trust Fund that's going to infuse as much as a billion additional dollars into inland waterways lock and dam modernization over the next 10 years.

We've worked hard to address the many challenges and needs driven by COVID, while at the same time keeping our eye on the ball and not letting the foundation crumble underneath us. The policymakers have joined us in understanding the importance of doing both.

Both President Biden and Transportation Secretary Buttigieg have voiced their support for the Jones Act. How do you anticipate this support will manifest through this Administration? What do you hope to see from the new Administration in the years ahead?

JC: It's a great start. It was fantastic to see the president on day five of his administration issue that new executive order and explicitly reaffirmed his support for the Jones Act. We are already seeing positive change as result of that. And the NDAA provision that I mentioned. A huge thing that those affirmations of support and that legislation provide is certainty that underguards investment by the maritime industry. That is so important given the emerging offshore renewable energy market and given industry efforts to reduce carbon footprint and emissions. If you want to make a big bet on investing in purpose-built vessels to serve offshore wind farms, or if you want to repower your fleet with LNG to serve the Puerto Rico market or build barges to fuel LNG propelled vessels, it's good to know that the Jones Act isn't going away anytime soon.

I hope and expect that we won't have to spend resources and time fighting extra legal Jones Act waiver requests. Over the last years, we had some real challenges, just unprecedented requests, for long-term five-, 10-year Jones Act waivers, which would have been absolutely devastating. I hope those are off the table. We're looking for vigorous enforcement of the law. There is a division within Customs and Border Protection called JADE, the Jones Act Division of Enforcement. They need to do their job and we're hopeful and optimistic that we'll see increased support and funding for that agency. We just saw within the last couple of days, the first Customs and Border Pro-

> ***"I'm proud and humbled to work for an industry that gets the job done 24-7. And I put companies and mariners in that category. They have kept the supply chain moving and kept people healthy and safe throughout this pandemic."***

© David / Adobe Stock

tection ruling on the question of Jones Act applications to offshore renewable energy. And it said all the right things. That's very positive.

What's the latest on VIDA, and what is AWO hoping to see from the EPA and USCG in the finalized regulations?

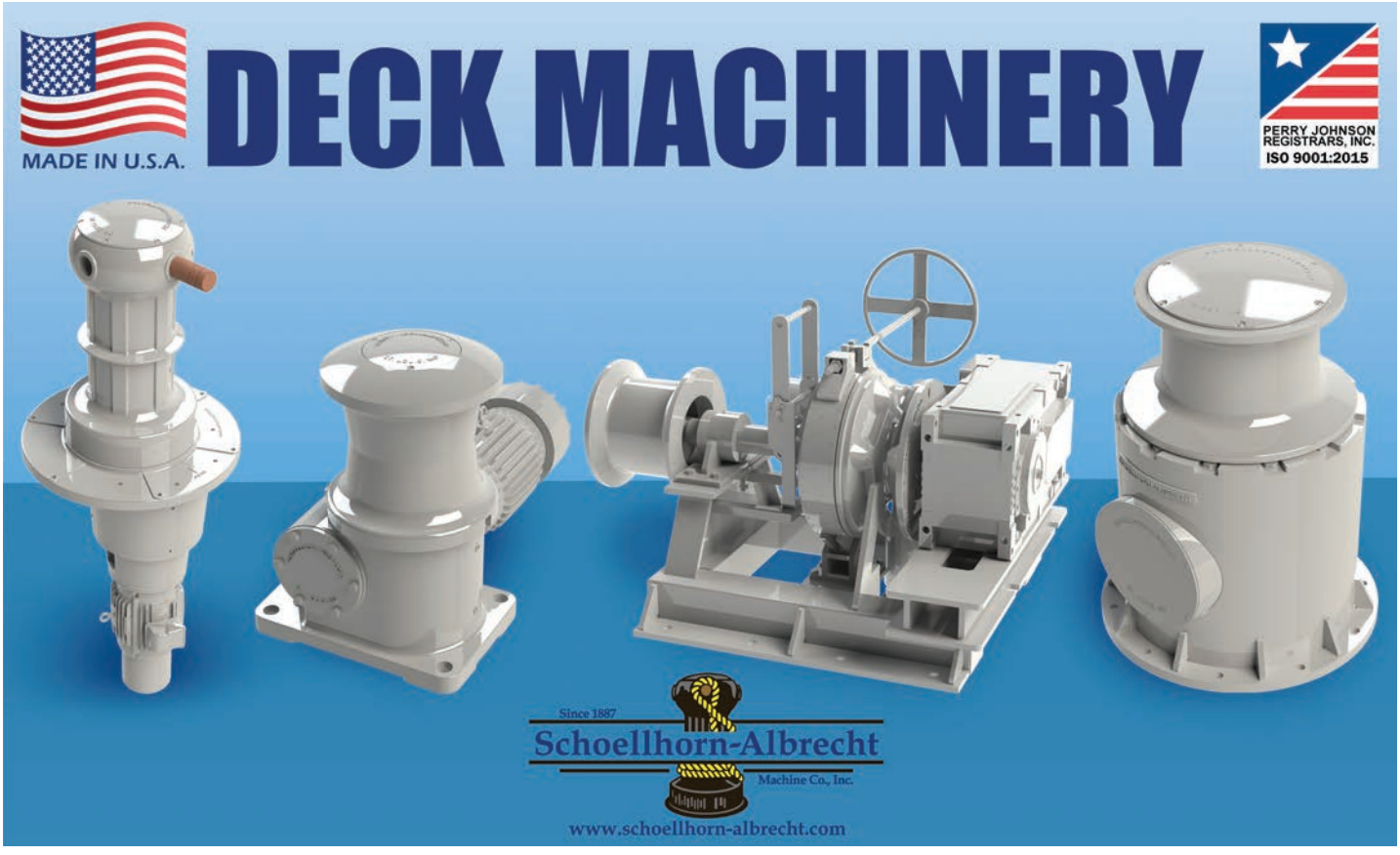
JC: Let's stay on time and stay on track because the promise of that legislation can only be fully and effectively realized when the EPA and the Coast Guard have both implemented their regulations and those are in full force and effect.

We want to see high achievable standards of environmental protection, a nationally consistent framework; that was what VIDA was all about, being a win-win for the environment and for efficient movement of maritime commerce, by saying, "Let's have high standards and apply them uniformly so I'm not wondering whether my investment is going to be good in this state or that state, and I'm not worried about whether my crew knows what they have to on this side or that side of an imaginary line in the water."

A lot of the most burdensome aspects of the vessel general permit were driven by things like inspection, recordkeeping and reporting, things that really do not have a big impact on environmental protection, but often take up a lot of time, paperwork and money. And so this is an opportunity to take a much more practical approach, especially something that's going to be a better fit for unmanned barge operations. We are keen to see implementation of the Vessel Incidental Discharge Act stay on track on time and really take a more practical approach while preserving high standards of environmental protection.

The rollout of Subchapter M is still very much a work in progress. Please give a status update, and what are AWO's priorities in terms of implementation and enforcement?

JC: Believe it or not, we're more than halfway through the COI phase-in period. 50% of vessels were required to have their COIs by last July, 75% COIs required by July of 2021, and by July of 2022—less than a year and a half



from now—100% of the U.S. towing fleet needs to have it COIs. So, we're on the back end of this thing, and we're hearing from AWO members they are on track, they're feeling good about where they are in meeting those deadlines.

From our AWO priorities standpoint, proactive enforcement is at the top of the list. We're phasing in the COI requirement over four years, but compliance with the standards has been required since July of 2018. There shouldn't be any towing vessels out there, whether they have a COI or not, that are not in full compliance with those regulations. We think it's very important that the Coast Guard be paying attention to what's happening on the water and that they be enforcing the regulations because Subchapter M was really not about taking those folks who were A students and bringing them to A-plus. It was about making sure that everybody was meeting appropriate standards. So it was, "Let's make sure there are no substandard operators. Let's raise the bar because we're only as good as our weakest link." Without proactive enforcement, we don't achieve that promise. So that's a top priority; consistent implementation and practical policy continue to be important.

Obviously, Coast Guard OCMIs have a lot of discretion to make decisions that are appropriate for their area of responsibility. And we get that, but we should not be reinventing the wheel from zone to zone along the Mississippi river or from inspector to inspector because we're not taking a consistent approach. And it's an ongoing challenge because the Coast Guard has a workforce that rotates on a periodic basis. It's something we're in ongoing dialogue with them about, ensuring that we've got clear guidance, that Coast Guard personnel are well trained and educated so that where there are questions or issues, that we've got the ability to discuss those in real time, get answers and then implement those answers consistently.

What other USCG issues are currently front and center for AWO?

JC: One that I would highlight is the inland buoy tender fleet, the Waterway Commerce Cutter Program. The good news is they have gotten a start toward the recapitalization of that fleet, which is so old that these vessels can't even have men and women crewing them together because they don't allow for housing mixed gender crews. That's outrageous in 2021. Also, because they're so old, they spend a lot of time in the shipyard. It's important to construct that next generation of Waterway Commerce Cutters because it is really crucial to keep commerce flowing efficiently and safely, that we've got our channels marked.

As that acquisition process moves forward, we are also going to be working closely with the Coast Guard to ensure that they are making best use of the cutter fleet that is out there now. So, when there's a need for planned shipyard maintenance, let's not schedule that at a time when we know we're going to have just experienced high water and we've got buoys off station and they're going to have to be replaced. Sounds like common sense, but that hasn't always been the case due to government contracting issues. We are eager to work closely with the Coast Guard to make sure that we're keeping those vessels moving and operating and meeting the needs of safe efficient commerce at the same time as we're constructing this next generation of vessels, which are going to be much more technologically sophisticated and reliable.

The AWO is obviously a champion for the tug, towing and barge industry, but please put your critic cap on for a moment. What does the industry need to improve/do better?

JC: Well I'll start with the positive. I'm proud and humbled to work for an industry that gets the job done 24-7. And I put companies and mariners in that category. They have kept the supply chain moving and kept people healthy and safe throughout this pandemic.

This is not a criticism, but it's a preemptive comment; it's a cautionary tale, and I'm going to be making this pitch directly to AWO members. I would say don't disengage from advocacy because you are frustrated with the political system, which a lot of people are. It was a bruising election year. Some people are very frustrated, some people are just tired. But my message would be don't disengage. Engagement and advocacy matter.

Our industry has a great story to tell. It resonates on both sides of the aisle. I think the significant legislative accomplishments of 2020, NDAA, WRDA are examples of what our industry can accomplish when we tell our story, when we make our voice heard to policy makers. I want to say to AWO members stay in the game because your voice does make a difference. And it's going to be particularly important that you stay engaged as we work to seize the opportunities and meet the challenges that the new year will bring, some of which we can anticipate, and others I'm sure we can't.

Column

Inland Waterways

Better Late Than Never

Congress provides last-minute help for small inland and coastal ports

By James Kearns

In two major pieces of legislation passed by Congress at the end of 2020 and the beginning of this year, Congress addressed the difficulty that many smaller inland and coastal ports have in obtaining funding for their infrastructure projects. First, on December 11, 2020 Congress passed the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (NDAA), and on January 1, 2021 overrode President Trump's veto. Second, on December 24, 2020 Congress passed the Consolidated Appropriations Act for fiscal year 2021 (FY 2021 Appropriations Act) which the President signed three days later. Both statutes contain provisions related to the Port Infrastructure Development Program administered by the U.S. Maritime Administration (MARAD) that are helpful to small inland and coastal ports.

Information about the overall Port Infrastructure Development Program can be found on MARAD's website (**https://www.maritime.dot.gov/PIDPgrants**). This article will focus on the provisions in the NDAA and the FY 2021 Appropriations Act that are particularly relevant to smaller inland and coastal ports.

Prior to the NDAA amendments, 25% of the amounts appropriated for grants under the Port Infrastructure Development Program were reserved for "small" projects. However, the underlying statute authorizing the Program, 46 U.S.C. section 50302, defined a "small" project as one that requested the lesser of $10 million or 10% of the total amount appropriated for the Program for a fiscal year. In the FY 2021 Appropriations Act, Congress appropriated $230 million for the Program, which effectively meant that the grant for a "small" project would need to be at least $10 million. The infrastructure projects of many inland and smaller coastal ports frequently do not rise to this amount. The FY 2021 Appropriations Act provided relief from this requirement by reducing the minimum grant size to $1 million for that specific fiscal year, as did the Consolidated Appropriations Act for Fiscal Year 2020. However, section 50302 remained unchanged on this requirement, creating uncertainty as to what the minimum grant size would be from year to year.

The NDAA amendments address this problem by removing the minimum dollar threshold for grants under the Port Infrastructure Development Program, and replaced the size

© Daniel S. Logan / Adobe Stock

of project test with a size-of-port test. The percentage reserved for "small" projects was reduced from 25% to 18%, but the removal of the minimum dollar amount for grant requests is of more practical importance for smaller ports. To be eligible for a grant from the reserved funding, a project must be at a port to and from which the average tonnage of cargo for the immediately three calendar years from the time an application is submitted is less than eight million short tons. The tonnage is to be determined using data of the U.S. Army Corps of Engineers, or from data provided by an independent audit which is acceptable to MARAD.

The FY 2021 Appropriations Act complements this with an approach that continues to look to the size of the grant. It directs that for grant awards of less than $10 million, priority is to be given to ports that handled less than 10 million short tons in 2017 as measured by the Corps of Engineers.

The combined effect of the two statutes appears to have what is probably an unintended consequence. As a result of the NDAA amendments, the amount of the FY 2021 appropriations reserved for smaller ports will be 18% of $230 million, or $41.4 million. This entire amount will be available to coastal seaports that handled an average of less than eight million short tons over the immediately three calendar years, and coastal ports that handled less than 10 million short tons in 2017 will be eligible for priority under the FY 2021 Appropriations Act.

However, only $25 million of the overall appropriations amount of $230 million would be available to inland river ports of any size, because of the set-aside of $205 million for coastal seaports or Great Lakes ports in the FY 2021 Appropriations Act. But this remaining $25 million is less than the set-aside of $41.4 million that is reserved for small inland and coastal ports under the NDAA amendments. Thus the combined effect of the two approaches appears to exclude inland river ports that exceed the eight-million tons threshold from access to any of the appropriated funds. As inland ports they would be excluded from the $205 million set-aside for coastal seaports and Great Lakes ports, and their tonnage would be too large to be eligible for the small ports set-aside. For the same reason, inland river ports above the eight-million tons threshold will also apparently not benefit from the priority provision in the FY 2021 Appropriations Act.

It seems unlikely that Congress intended such a result. A more probable explanation might be found in the size and complexity of each of the two bills, the preoccupation of lawmakers with COVID-19 relief measures, and the haste in which both laws were passed in the final days of the 116th Congress. Perhaps there will be an opportunity for the 117th Congress to sort it out.

Another hurdle that inland and smaller coastal ports frequently encountered under the Port Infrastructure Development Program was a requirement that the proposed project be shown to be "cost effective." While this might appear at first to be a reasonable requirement for making grants with taxpayer dollars, as a practical matter it placed smaller ports at a disadvantage relative to the larger ports. Because smaller ports typically handle less cargo than the larger ports, the same piece of cargo-handling equipment, for example, would likely have greater utilization at a larger port than at a smaller port.

Prior to the NDAA amendments, there was a provision allowing MARAD to waive the cost-benefit analysis and to establish a "simplified, alternative basis" for determining whether a project is cost effective for a small project. The NDAA amendments did away with the cost-benefit analysis requirement altogether for projects proposed by eligible small ports. Instead, the criteria for evaluating projects proposed for the grants reserved for smaller ports now give those ports the opportunity to justify such projects on a broader basis. Projects proposed by smaller ports for the reserved funding are to be evaluated taking into account "the economic advantage and the contribution to freight transportation at a port," "the competitive disadvantage of such a port," and "the degree to which a project would promote the enhancement and efficiencies of a port."

As with other grants made under the Port Infrastructure Development Program, a grant from the funding reserved for smaller ports is generally limited to 80% of the total costs of the project, but such a grant is now eligible for MARAD to increase the Federal share above 80%, which previously had been available only for grants to projects located in rural areas.

Several new provisions are worth noting in connection with the share of the project costs that are to be paid by the grant recipient. First, the law now states explicitly that the recipient's share may be incurred before the date on which

the grant is provided. This allows the recipient to use its own funds to get an initial phase or stage of a project under way if the completion of that portion of the project would still be useful even if the grant application was not approved.

Second, the recipient's share can be in the form of a loan agreement, a commitment from investors, cash on the recipient's balance sheet, or other contributions that are acceptable to MARAD. This reflects the practical reality that the grant recipient's share might be coming through some form of financing, but with the lender, investor, or other financing source being unwilling actually to disburse funds until the grant application is approved.

Third, the NDAA amendments specifically provide that MARAD may not require as a condition of issuing a grant that the grant recipient obtain direct ownership of either a facility or equipment to be procured using the grant funds, or that any equipment procured with the grant funds be new. The first provision allows for the frequently used method of lease financing, in which title to the facility or equipment is held by the leasing subsidiary of a financial institution, with the grant recipient having possession and use of the facility or equipment. The second provision reflects the practical reality that, especially for smaller ports, previously used equipment might be what they can afford while still meeting their needs.

It now remains for MARAD to provide procedures and forms to implement the changes that have been made in the Port Infrastructure Development Program for smaller inland and coastal ports, and to issue a Notice of Funding Opportunity for the Program under the FY 2021 Appropriations Act.

OpEd

Training

STCW Requirements Should Support Maritime Decarbonization

By David Hume, founder, The Liquid Grid

The modern merchant mariner is required to be competent in a number of skills and knowledge areas, such as firefighting, CPR, vessel security and even how to work as a team. Absent from this list is the mariner's role in fighting climate change. Maybe it's time for that to change.

The Standards of Training Certification and Watchkeeping (STCW) is an internationally recognized set of rules that set minimum standards and competencies for mariners to perform their jobs effectively and safely. Before STCW was formed in 1978 it was left to individual governments to set mariner training standards. This resulted in varying levels of competency across the world. Moreover, the lack of standards created obvious problems for mariners that crossed international boundaries on a voyage. What country's standards should take precedence in such a scenario?

Wan Fahmy Redzuan Wan Muhammad / Adobe Stock

In the United States, the U.S. Coast Guard oversees implementation of STCW for commercial mariners. Competency in the different STCW requirements is demonstrated by relevant coursework at maritime training institutions and/or on-the-job training at sea. Proof of competency comes in the form of U.S. Coast Guard issued credentials and endorsements. The type and number of STCW endorsements or credentials that each mariner needs depends largely on their role, the type of vessel, machinery onboard and where it operates. For example, deck officers working on the Great Lakes have different requirements from engine officers working internationally.

Does STCW emphasize maritime decarbonization?

Some STCW endorsements are required for all seafarers. These are the Basic Safety Training (BST) requirements of the STCW Code. This is the base-level of competency and knowledge that all mariners must know to work on a ship for their own safety and the welfare of others. It includes training in personal survival at sea, basic first aid, personal safety and social responsibility and firefighting. In our current climate crisis, perhaps it's time we add to this list a requirement to understand maritime's role in climate change.

The only part of the BST requirements relevant to maritime decarbonization is a subpart that stipulates standards for "personal safety and social responsibilities." This is the one section in the STCW Code that is pertinent to all mariners and mentions their role in avoiding pollution of the environment. The competence requirement reads, "Take precautions to prevent pollution of the marine environment."

However, this requirement is rather vague. Does it relate to air emissions? Water emissions through ballast water? Noise emissions? Plastic pollution? Oil spills? All of the above? Elsewhere in the STCW Code there are other such mentions of preventing pollution of the marine environment, but it's always equally ambiguous.

Nowhere in these standards is there any mention of emissions, reduction or climate change, let alone that seafarers be aware of these issues. This is important because it dictates what is taught to mariners and what is emphasized in their training curriculum. If it's not important to STCW, it's not important to the trainers of the maritime workforce.

The STCW Code is not immutable. It is amended periodically to reflect the changing needs, technologies and operational requirements of the industry. After the international STCW Convention established minimum safety requirements in 1978 it was updated in 1995 and then again in 2010, in what is known as the Manila Amendments. For instance, the Manilla Amendments included new mandatory security training for all crew as well as specialized training in leadership and teamwork for officers.

STCW amendments for a modern merchant marine

The STCW Code needs new amendments that reflect the current state of affairs in the maritime industry and the world more broadly. The industry is undergoing a once-in-a-century energy transition that is heralding in new low- and zero-carbon fuels and power systems such as green hydrogen, fuel cells or fully electric vessels. In a similar vein, new technologies that automate and optimize shipboard systems are increasingly being adopted for navigation, cargo handling or engine operations. Many of these technologies didn't exist a decade ago. New competences are needed that reflect the needs of the modern merchant marine.

While we're at it, new amendments to the STCW Code could be adopted that specifically address the need for every merchant mariner to have training in emissions reduction and climate change mitigation. A base level of competency in these issues would ensure that every rating on the ship from cook to captain is aware of how they can contribute to emissions reductions through their daily work. When everyone is on board, we're more likely to achieve the emissions reductions so desperately needed.

The current lack of training on maritime decarbonization is a disservice to the industry. It sends a signal that it is low-priority, and maritime training institutions treat it as such. However, numerous industry surveys over the last two years indicate that addressing climate change is anything but low-priority, quite the opposite in fact. There is a disconnect between the training requirements and the needs of industry.

To address climate change, we'll need all industries making substantial cuts in emissions, it is quite literally an all-hands-on-deck affair. For an industry that contributes nearly 3% of global greenhouse gas emissions annually, all mariners should be aware of their role in reducing the industry's impact on climate change. But if the current STCW Code doesn't require it, then it won't be taught. It's time for that to change.

OpEd

Decarbonization

All Hands On Deck to Tackle Decarbonization Today

By Karrie Trauth, General Manager, Shell Shipping and Maritime Americas; and Tahir Faruqui, General Manager, Shell Global Downstream LNG

Without action

from the shipping sector to decarbonize, the sector will be responsible for approximately 17% of global CO2 emissions by 2050. And given the scale of the change required, we must address this now. Across the industry, many are wrestling with what steps to take to drive their decarbonization journeys.

Last year, Shell and Deloitte published a joint report, Decarbonizing Shipping: All Hands on Deck, assessing the key factors affecting decarbonization of the shipping sector. The report set out to understand the views of senior executives from across the sector, including Jones Act owners, on the barriers and potential solutions to decarbonizing shipping. Its objective was to drive more common understanding and catalyze action.

The report highlighted several elements across the industry which have emerged to present challenges to decarbonization. For instance, in North America—and perhaps arguably across the globe—there is a recognized lack of necessary coastal and inland infrastructure to support an immediate transition to net-zero emissions in shipping. And new regulations to drive decarbonization of the shipping sector have been under discussion for some time. Additionally, the arrangement, layout and operational profile of the North American tug and barge fleet provide unique constraints for the designer when looking to decarbonize.

These challenges, among others, have made vessel owners hesitant to invest in retrofitting, or even to order new ships. A recent Bloomberg article noted that global orders of merchant ships have dropped to the lowest in two decades, attributable to a lack of clarity on what will be the preferred low-carbon fuels and technologies of the future.

Naturally, some degree of caution is warranted. Considerations including the current global economic conditions, depressed fuel prices, limited fuel carrying space and high costs of retrofitting vessels continue to challenge the industry as it works toward full-scale decarbonization. Hydrogen, ammonia and electrification are being tested, and it's probable that many of these won't be ready for industry use at scale for more than a decade, possibly longer. Put simply, this technology must still be developed, infrastructure to support it must be built, costs must come down and regulations must be put in place to incentivize switching to lower- and zero-carbon fuels.

But the urgency presented by climate change, combined with expected regulatory measures, does not allow the industry to delay in making

Q-LNG 4000,
the first offshore LNG bunkering ATB in the U.S.

Shell

choices and taking action.

Operational efficiency must remain at the forefront throughout this transition process. Each member of the shipping industry must consider many factors, including fuel and lubricant choices for engine optimization, energy management, vessel design, operating profiles, smart navigation and vessel utilization. It means considering everything from the power being used on-site in ports to digital solutions and opportunities to drive efficiencies in navigation and terminal usage. The sector will need to seek opportunities to work with major infrastructure operators and regulators to replicate early regional successes across North America.

The good news is that while companies, scientists and coalitions across the industry are working hard to bring large-scale feasibility to zero-emissions fuel sources, the industry doesn't have to wait to begin to decarbonize. While liquified natural gas (LNG) will not be a sole, final answer to decarbonization of the shipping industry, it is a viable step today, meaningfully moving the needle on tangible emissions reductions in the North American shipping sector.

LNG is affordable, proven, safe and the cleanest fuel currently available to the maritime sector in meaningful volumes. It reduces pollution from nitrogen oxides and particulate matter over conventional marine fuels. Compared to heavy fuel oil, LNG reduces greenhouse gas emissions by up to 21% for two-stroke engines and up to 15% for four-stroke medium speed engines, according to a study by Thinkstep. Drop-in net-zero fuels like BioLNG and synthetic LNG can further reduce well-to-wake GHG emissions, and are fully compatible with existing LNG infrastructure. Vessels using LNG as a fuel are cost-competitive over their lifecycle and typically require less maintenance than those running on conventional fuels.

Fuel cell technology can unlock further efficiencies for the sector, a necessary step to meet the propulsion required from new fuels. While the scale and global infrastructure for hydrogen and ammonia are being developed, LNG can be used with fuel cells in the meantime; it's the only fuel available today to help advance this critical technology. And with the use of certain fuel cell technologies, LNG-fueled vessels could experience an efficiency increase of another 30% over LNG alone.

There are inherent challenges with LNG. Methane emissions must continue to be tackled across the value chain. And port infrastructure for LNG is not yet comparable to the flexible network of traditional fuels, although it is evolving. According to Clarksons, there were 605 in-service LNG vessels on the water globally as of February 3, with 153 on order to be delivered 2021-2025. A demonstrated increase in demand for LNG will also increase the demand for infrastructure. And companies—like Shell—are investing in bunkering vessels to deliver LNG as the demand grows, with a plan to double our capability by 2025.

In January, the Q-LNG 4000, the first offshore LNG bunkering articulated tug and barge (ATB), owned and operated by Q-LNG Transport under a long-term time charter with Shell NA LNG, LLC, began operations and conducted its first bunkering in the United States. The ATB will supply LNG to marine customers along the southeast coast of the U.S., supporting growing demand for LNG marine fuel. The Q-LNG 4000 is a key infrastructure and logistics element necessary to unlock the U.S. marketplace for LNG as a competitive and commercial-scale marine fuel. Additionally, adding this vessel to our portfolio enhances the global marine LNG bunkering network which is necessary to enable and attract global traffic to U.S. ports.

Decarbonization isn't something that society should be thinking about in a bubble or as an abstract concept for the future, and we should be proud that the shipping industry isn't—it's being discussed and addressed at many levels. And while each player in the industry continues to wrestle with the myriad challenges that are inherent in the process of finding a path to decarbonization, it is also good to see that there are those taking immediate steps to address their emissions and seize the opportunity of leading in the sector. Everyone within the shipping decarbonization ecosystem needs to, and can, act boldly—thinking big, starting small and scaling fast—and take steps now to decarbonize. All levers must be pulled and, when it comes to fuel, the cleanest options available today can be utilized to make measurable progress toward shipping decarbonization.

Note: The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this article "Shell" is sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to subsidiaries in general or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies.

Maritime Groups Pleased with WRDA 2020

By Tom Ewing

© Michael / Adobe Stock

It was an odd legislative journey, but ultimately one with a happy ending. That's one way to sum up the rather tortuous process that led to the passage of the Water Resources Development Act of 2020 (WRDA). For the first time WRDA (usually reauthorized every two years) was not enacted as its own legislative bill. This time it was rolled into the massive government 2021 omnibus budget bill, the "Consolidated Appropriations Act, 2021," signed into law on December 27.

Still, the WRDA text itself, with critical waterways and harbor programs and policies, survived mostly intact, i.e., as developed in previous months by House and Senate transportation committees.

Money and policy:
I. Harbor Maintenance Trust Fund

Money's important, right? Congress was generous. Critically, in addition to WRDA, the omnibus budget bill included Energy and Water Development appropriations, the legislation that provides the money for projects and programs. (Congress can authorize funding for projects. But it's another legislative step that serves to appropriate, or fund, those authorized projects. Indeed, many projects are authorized but never receive money via the appropriations process.)

For FY 21, the Army Corps of Engineers is funded at $7.8 billion. That's $1.83 billion more than what the President requested. The Construction account received $2.69 billion. Navigation more than $3.7 billion.

The bill requires the administration to develop a work plan, due to Congress within 60 days. That work plan will be based on ACE Chief of Engineers' project reports since WRDA 2018. The work plan will identify ports and waterways projects selected for construction (or maintenance, for example, or navigation), including "new start" studies, meaning projects that should be added to the Corps' list of work. ACE's civil works historically have focused on projects that improve navigation, reduce flood risk and restore aquatic ecosystems.

"New starts" highlights another difference compared to the President's budget, which didn't request any new studies or new projects. In contrast, WRDA requires seven new projects and nine new studies, bringing new work into the pipeline, so to speak.

Where spending policies are concerned, Congress made critical changes to the two federal trust funds central to waterway funding: the Harbor Maintenance Trust Fund (HMTF) and the Inland Waterways Trust Fund (IWTF).

The HMTF is funded by taxes on the value of imports, certain domestic cargo and cruise passengers. As the name implies, it was created to pay for operations and maintenance costs of federal navigation channels; the fund pays 100% of those costs.

Because U.S. imports have increased at a rate faster than HMTF expenditures, the fund has built up an unspent balance of around $9.3 billion. Why wasn't this money spent, you might ask? Recall that Congress, to keep overall federal spending under control, sets limits, so-called spending caps, on discretionary federal programs. These limits served to check HMTF disbursements all while the fund's balance kept increasing.

WRDA 2020 removes the HMTF spending caps, actually a policy move that was first made last year in the CARES Act (the COVID-19 stimulus bill). WRDA confirms and continues the CARES Act provision. Going forward, additional HMTF money will not impact the calculations that track and limit overall federal spending, i.e., offsets will not be required elsewhere in the budget because HMTF money is being spent.

There's more. Not only did Congress unlock this pot of money, it set directives to make sure the money gets spent. Previously, annual expenditures were set as a percentage of the fund. In WRDA, Congress set dollar amounts. Going forward, expenditures need to equal the sum of the deposits that went into the fund two years prior ($1.8 billion in FY2019) plus an amount starting at $500 million in FY2021 and increasing by $100 million annually to $1.5 billion for FY2030 and thereafter.

This is big news. Christopher J. Connor, president of the American Association of Port Authorities (AAPA) said in a press release that full spending will allow a "major expansion to address the significant backlog of navigation maintenance needed in harbors throughout the country. (This) is a giant plus to provide proper navigation maintenance nationwide."

Tom Smith, executive director of the American Society of Civil Engineers (ASCE), said the trust fund changes will allow $2 billion annually to be spent on port and harbor dredging, which is, after all, the fund's intended purpose.

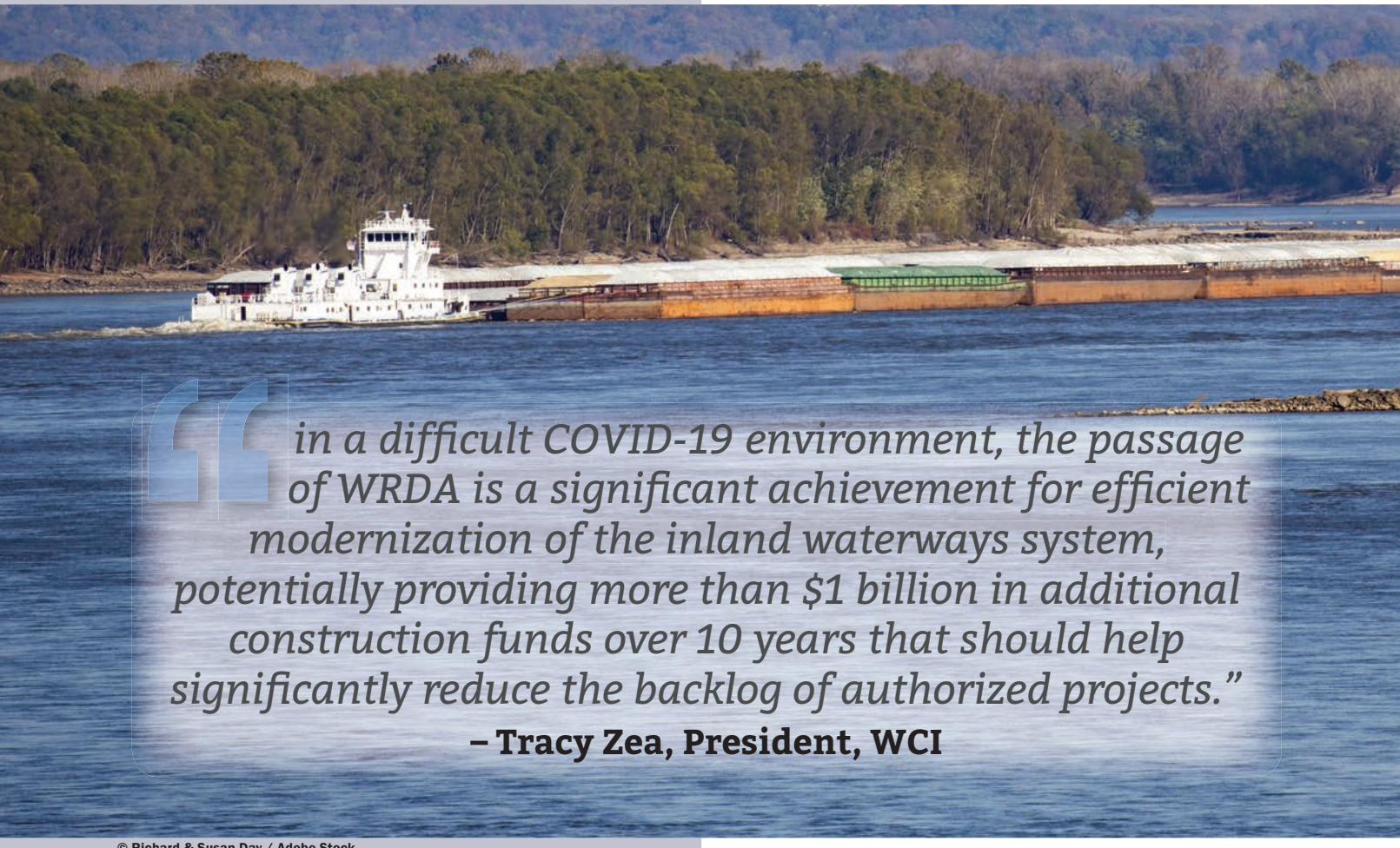
"Optimizing the HMTF is an important step in raising the nation's "C+" ports grade," Smith said in a press release, referencing ASCE's national "infrastructure report card."

Money and policy: II. Inland Waterways Trust Fund

The big news with this fund is that Congress reduced the portion of Fund monies required to pay for waterway construction projects. This was a 50-50 split: half the money came from the fund and half from general revenue, i.e., general taxpayers. WRDA revises that split; now the fund will pay for 35% of project cost, and general revenue picks up the remaining 65%. This is for 11 years, for projects funded from FY2021 through FY2031. Recall that the IWTF is funded by a $0.29/gallon fuel tax paid for by the commercial vessels that use the 11,000 miles that make up the inland waterways system.

WRDA is also important for not including two proposals in the President's funding request. First, a proposal to discontinue funding for ongoing waterway construction projects that didn't have a benefit-cost ratio above 2.5 (benefits are at least 2.5 times project costs). That didn't happen. Congress rejected that metric and directed that one new trust fund cost-shared project should be started with FY2021 money (i.e., a "new start.") Second, the administration proposed an annual user fee on commercial vessels. Again, Congress said no.

Maritime business officials applauded these WRDA funding revisions. The cost-share change was a top priority for the Waterways Council, Inc. (WCI), the national trade group focused on the inland waterways. In a press release WCI president Tracy Zea commented that "in a difficult COVID-19 environment, the passage of WRDA is a signifi-



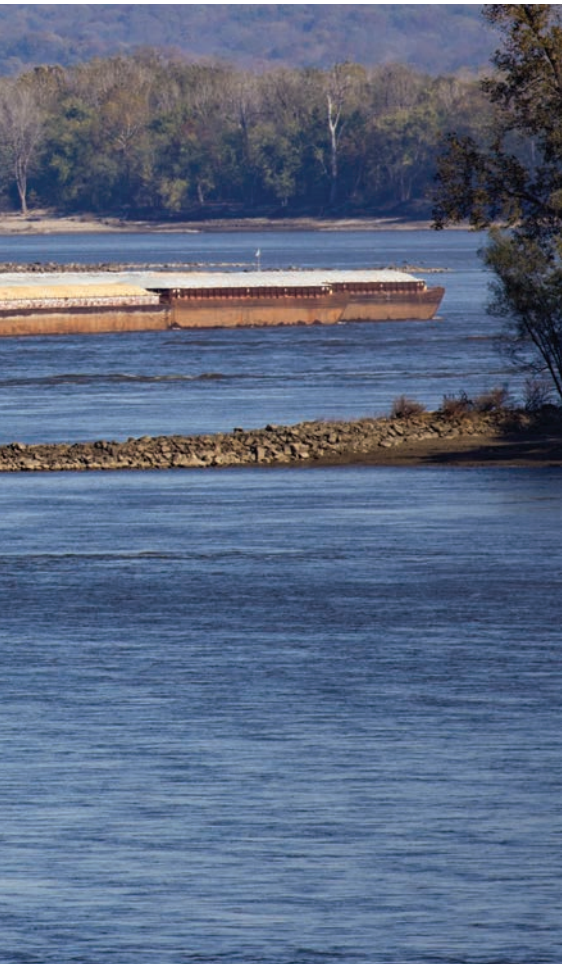
"in a difficult COVID-19 environment, the passage of WRDA is a significant achievement for efficient modernization of the inland waterways system, potentially providing more than $1 billion in additional construction funds over 10 years that should help significantly reduce the backlog of authorized projects."

– Tracy Zea, President, WCI

© Richard & Susan Day / Adobe Stock

cant achievement for efficient modernization of the inland waterways system, potentially providing more than $1 billion in additional construction funds over 10 years that should help significantly reduce the backlog of authorized projects." Zea also noted "the rejection of any additional and onerous taxes or fees on commercial operators to supplement existing revenue streams."

American Waterways Operators (AWO) called WRDA 2020 passage significant as it will "accelerate funding for key infrastructure projects and is a win for America's vital commercial towing industry."



GLDD

[Keeping WRDA on a two-year legislative cycle] has made the legislative process for project authorizations efficient and predictable, which is meaningful for those of us in the supply chain business."

– Bill Hanson, Senior Vice President, Great Lakes Dredge & Dock

Dredging

WRDA sets new policy and funding directives to advance dredging projects. Policy changes allow greater use of HMTF money for dredging, for example, in an expanded number of harbors. The Corps can now accept money from states or other non-federal interests for dredging or related technical assistance. The Corps is directed to prioritize reissuing expiring regional general permits for maintenance dredging.

WRDA 2020 renews Congress' commitment to beneficial use. WRDA establishes a "National Policy on the Beneficial Use of Dredged Material." These aren't all new concepts and initiatives. Again, though, expansion is important. WRDA increases beneficial use demonstration projects from 20 to 35.

Another new WRDA demand is that each Corps District Commander is required to develop a five-year regional dredged material management plan, due in one year, and then updated annually.

The plans need to address the following:

- *Dredging budgets;*
- *Estimating material volumes over a five-year period;*
- *Identifying projects suitable for—or requiring—the placement of dredged material, and estimating capacity;*
- *Evaluating the benefits of using dredged material;*
- *Preparing beneficial use goals, including expected cost savings; and,*
- *A description of potential projects identified through stakeholder solicitation and coordination.*

That last bullet is important because a public comment requirement is separately listed in the bill. Congress wants "stakeholders" to have the chance to examine the five-year plans "to ensure, to the extent practicable, that beneficial use of dredged mate-rial is not foregone in a particular fiscal year or dredging cycle."

Great Lakes Dredge & Dock Company (GLDD) has tracked WRDA's progress and completion. GLDD senior vice president Bill Hanson noted that WRDA 2020 authorized more than 40 dredging projects, including the Houston Ship Channel. Beyond specific projects, though, Hanson cited the larger importance of keeping WRDA on a two-year legislative cycle. "It has made the legislative process for project authorizations efficient and predict-

James Lowe / U.S. Army Corps of Engineers

able," he said, "which is meaningful for those of us in the supply chain business."

Next steps

Hanson's reference to the importance of a predictable legislative cycle is common among industry officials. The nation's waterways and harbors deserve regular federal attention. WCI's Zea called WRDA 2020 "a win for the nation, our economy and shippers and exporters." WCI, again like other groups, was clear in its message to House and Senate committee leadership: thanks for getting this done.

James E. Walker is director of government relations at AAPA. Like his peers, Walker very much appreciates that WRDA crossed the legislative finish line and the teamwork—from all sides—to make that happen. He advises, though, that maritime groups shouldn't take too much of a break from their advocacy. After all, the federal budget process, for FY 2022, starts in March. He noted, for example, that in April House and Senate committees could be marking up their bills.

"We have to keep in mind," Walker said, "that WRDA 2020 calls for $600 million in waterways spending in FY 2022." That raises the big question: Is all of that money clearly included in the Corps of Engineers' federal agencies' budgets?

You can be sure people will be watching closely.

The U.S.' First Purpose-built Maritime Training Ships

By Tom Ewing

For professional maritime training, the 2020 holiday season was bright indeed. In a world clutching for optimism, officials from the U.S. Maritime Administration (MARAD) made a series of announcements that will strengthen, expand and intensify America's maritime academic programs—really the maritime industry—for at least the next decade, likely much longer. Consider this string of news:

On December 15, MARAD announced cutting steel for the first new National Security Multi-Mission Vessel (NSMV) at Philly Shipyard Inc., in Philadelphia, a critical milestone for the series of purpose-built, state-of-the-art training vessels for America's state maritime academies, vessels big enough for 600 cadets.

That shipyard work started just 19 months after MARAD named TOTE Services, LLC, to be the Vessel Construction Manager, a new and innovative approach to federal shipbuilding. In April 2020, TOTE chose Philly Shipyard to build up to five NSMVs.

The first vessel, expected in 2023, will go to SUNY Maritime Academy. The second to Massachusetts Maritime Academy. And a third to the Maine Maritime Academy. The NSMVs will replace training ships that are more than 50 years old.

On December 22, more good news. The 2021 Federal Budget bill contained the following: "$390 million, to remain available until expended, shall be for the National Security Multi-Mission Vessel Program, including funds for construction, planning, administration and design of school ships."

That same day the Maritime Academy at Texas A&M University at Galveston announced it would receive the fourth vessel, expected to be delivered in 2025.

Stay tuned. In total, this is a $1.5 billion program. When additional funding is set, a fifth vessel will go to the California State University Maritime Academy in Vallejo, Calif.

As most people know, of course, announcements like these only come after years of hard work. Great programs don't just happen.

It must be emphasized that the start of NSMV construction reflects shipbuilding newly and singularly focused on training. The vessels will have capabilities for other duties, but those are secondary. Training is the primary function of these new ships.

The NSMVs represent the culmination of work underway for over a decade, according to former MARAD Administrator Mark H. Buzby. "The new ships, and the programs they support," Buzby said, "will further advance excellence in American maritime education and reignite the jobs engine that is America's shipyards." The NSMV construction will support 1,200 jobs at Philly Shipyard, and the yard will work with domestic mills for steel and with U.S. equipment manufacturers.

In reality, the new ships can't get here soon enough. Note the phrase above – "the first purpose-built" training vessels. Training vessels heretofore have been, well, afterthoughts, if you will. Assets specifically needed to enhance teaching and training could not be prioritized when older vessels were converted to training vessels.

MARAD spokesperson Brije Smith said the NSMV is "a long-sought priority supported across several administrations and Congresses." It took time, she explained, "to shift away from the century-and-a-half practice of adapting former Navy and cargo vessels to serve as training ships." She noted other challenges: today there are fewer vessels that can be adapted for training and there are high costs inherent in purchasing and retrofitting foreign-built ships.

Importantly, the NSMVs will have a second operational mission. They will be owned by the federal government and, as needed, can be pressed into service for emergencies, for humanitarian missions, say, for hurricane and emer-


MARAD

gency flood response.

These will be big ships. In addition to educational assets, each NSMV will include hospital facilities, a helicopter pad, and the ability to accommodate up to 1,000 people in times of humanitarian need. The NSMVs will provide roll-on/roll-off and container storage capacity for use during disaster relief missions.

"The new NSMV," Smith said, "will deliver a best-in-class training ship to prepare future mariners while also supporting the nation's needs in crisis." Educational outcomes can only improve, almost promising extensive payoffs considering that state maritime academies graduate more than half of all new officers each year.

Concerted leadership from all the maritime academies was pivotal in developing NSMV program goals and bringing it to fruition. Academy leadership worked with their Congressional delegations and MARAD, but requests and priorities were delivered as a team message.

Col. Michael E. Fossum is superintendent of the Texas A&M Maritime Academy at Galveston, the school slated to receive the fourth vessel. He commented on the academic lobbying and partnerships: "Officials sit up and take notice when people from Texas work with people from New York to help New York get a boat."

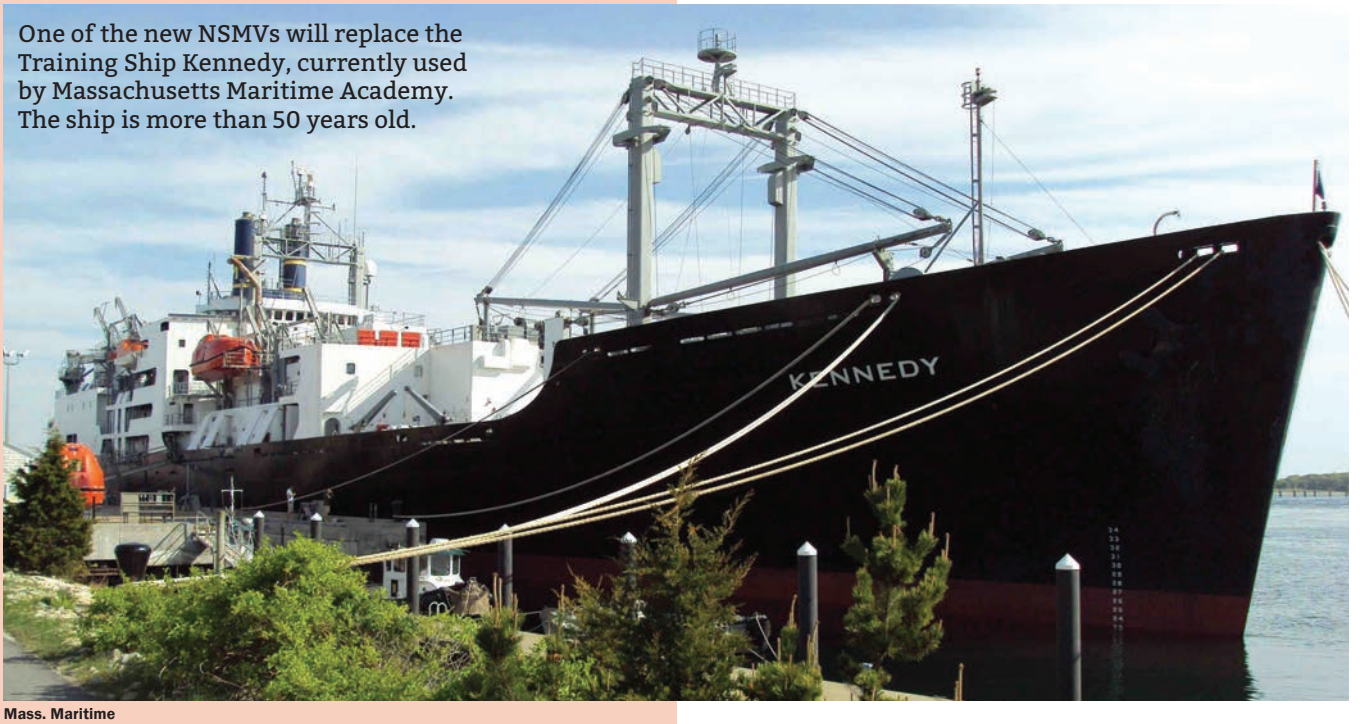
When asked about the big news in December, Fossum commented that "it was a long time coming, almost an impossible dream four years ago that we would actually start building the NSMVs." He too emphasized that ships for training were prioritized. "The current ships are too old," he said, "inadequate to do the job here in Texas."

Rear Admiral Francis X. McDonald is president of Massachusetts Maritime Academy, due to receive the second new NSMV. McDonald explained that funding for the new vessels became available in early 2018 when, in a bipartisan move, Congress significantly raised defense and non-defense discretionary spending caps. The President followed with a budgetary addendum: $300 million to replace the two oldest training ships, the TS Empire State

Mass. Maritime

"This is a win for our cadets as they seek employment. It also provides the opportunity to showcase the importance of the maritime industry and what it means both globally and closer to home in attracting a new more diverse generation of future mariners."

–Rear Admiral Francis X. McDonald, President, Massachusetts Maritime Academy



One of the new NSMVs will replace the Training Ship Kennedy, currently used by Massachusetts Maritime Academy. The ship is more than 50 years old.

Mass. Maritime

and the TS Kennedy. This expenditure, though, would have converted older vessels.

McDonald said that Congress intervened, aware of the value of new purpose built—and U.S. built—vessels, directing the $300 million to build the NSMV. Congress funded a second vessel about a year later.

As they anticipate receipt of the new vessels, Fossum and McDonald were asked about the most significant new educational attributes offered by the NSMVs.

For McDonald, it's technology. "This is really a two-fold attribute with both state-of-the-art engineering systems and real-world navigation equipment," he explained. "This is a win for our cadets as they seek employment. It also provides the opportunity to showcase the importance of the maritime industry and what it means both globally and closer to home in attracting a new more diverse generation of future mariners." He added that cadets will (finally) be training on systems in use throughout the fleet. Mass. Maritime has 1,600 undergraduate cadets.

An instructional highlight noted by Fossum is that the new vessels will have two bridges, a unique feature offering teaching advantages. The ships will have a regular bridge, of course, and just below, a training bridge, a site that expands chances for more cadets to get their hands on the controls. "They won't be steering downstairs," Fossum explained, "but they can learn to run the systems, to monitor radar, to navigate." He emphasized, "This isn't a simulator. It's all windows, a mirrored system with radar displays and navigation components. It's real."

For Texas' programs, and its 450 cadets, Fossum said just the sheer size of the new vessel will have the greatest training impact. He anticipates the capability to have 300-400 cadets on board at one time. In comparison, the current training vessel, the TS General Rudder, accommodates around 50 cadets. Larger engine rooms and larger training spaces offer enhanced and expanded opportunities.

McDonald, too, noted "sizable training spaces and modern equipment will allow us to better utilize the classroom and lab time while on board." He said Massachusetts Maritime typically sails with 600 cadets and another 100-ship crew, personnel, medical, food service and duty officers, to name a few. Dedicated spaces will allow cadets, crew, staff and instructors to perform necessary training, maintenance, watchkeeping and daily routines safely and efficiently.

Texas A&M Maritime Academy

"Sea-terms is where you put it all together. . . [Cadets] will be doing all of the hands-on things that will soon be part of the world they are licensed to operate in."

– Col. Michael E. Fossum,
Superintendent of the Texas A&M Maritime Academy at Galveston

A digital mockup depicting the new NSMV docked at Texas A&M University at Galveston.

MARAD

For Fossum, the new vessel will offer more cadets a chance to learn in what he characterized as "an immersive environment." "Sea-terms," he said, "is where you put it all together." There will be onboard classes, but critically cadets will experience and learn from real work: 24-hour operations, four on, eight off, all positions, dealing with weather, traffic, maintenance, docking. "They will be doing all of the hands-on things that will soon be part of the world they are licensed to operate in," Fossum said.

Importantly, as vessel construction starts, academy leaders have opportunities for forethought, to be deliberate about new, specific training assets, e.g., a second bridge. MARAD's Smith said the state maritime academies will provide the vessel construction manager (TOTE Services) with the training equipment needed for each academy's various programs. This could include lab equipment, computer simulators, as well as resources for students. Again, planning, not repurposing.

The NSMV will also provide the state and nation greater disaster and emergency response capabilities. Fossum noted, for example, there were nine named storms in the Gulf last summer. During Hurricane Harvey, in 2017, the academy's training ship was used to rescue offshore oil workers. It could only carry 35 people. The new vessel: 1,000. When needed, the new NSMVs will become significant regional emergency assets.

As noted, the NSMVs are owned by the federal government. Formally, they are part of MARAD's National Defense Reserve Fleet. They are on a custodial loan to the state maritime academies, which contribute to upkeep, provide a berth and perform general maintenance.

Tech
File

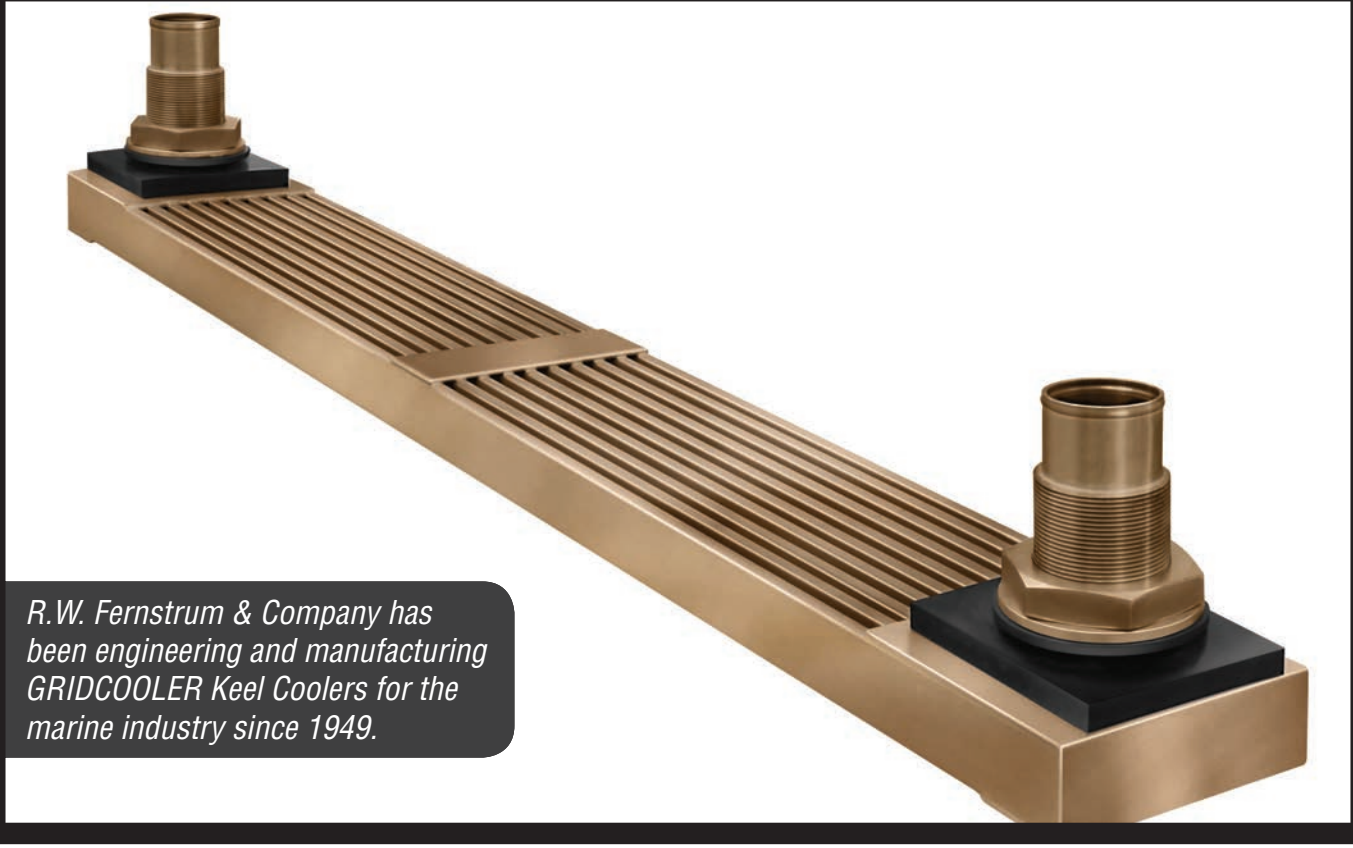
Engineered Cooling Solutions
Help Improve Environmental Footprint

As owners and operators work to achieve dramatic new emission reductions, vessels' cooling solutions should not be overlooked.

All images: R.W. Fernstrum

A wave of green initiatives is sweeping through the maritime market as owners and operators seek ways to reduce emissions from their vessels. One company supporting this drive is R.W. Fernstrum, a global leader in engineering and manufacturing keel cooling technologies.

Sean Fernstrum, the company's president, sees a mix of power and propulsion solutions—each with its own list of pros and cons—combining to help reduce the industry's environmental footprint. And R.W. Fernstrum, whose products have been relied upon for cooling marine propulsion engines, generator sets, reduction gears and auxiliary systems



R.W. Fernstrum & Company has been engineering and manufacturing GRIDCOOLER Keel Coolers for the marine industry since 1949.

Sean Fernstrum,
President of R.W. Fernstrum

on board vessels of all sizes worldwide for decades, has the experience and technology to support the green push.

"We've done work with natural gas power engines, we've done work with fuel cells, hydrogen and so on, in cooling those systems. We've done work with a number of different hybrid systems," Fernstrum says, adding that his company's engineered solutions can help to reduce emissions even further. "We're able to simplify things quite a bit on the cooling side and actually in many cases we can reduce the power or energy requirements for the overall cooling system."

In particular, the company's signature closed-loop GRIDCOOLER keel cooler helps improve propulsion efficiency while also driving down emissions. "You're able to eliminate auxiliary pumps that you would need to if you're bringing seawater on board. You don't have to bring the seawater on board, so you don't have seacocks, you don't have strainers, you don't have seawater piping; all of that's gone along with the auxiliary pump, which that can siphon off one, two percent of your total power off of an engine," Fernstrum says. "So, if you can recapture that, that's definitely a big plus, especially when you're trying to dial in these energy requirements on these vessels."

R.W. Fernstrum's closed-loop systems also enable vessel owners to eliminate another type of emissions. "When you've got an open cooling system, you're pulling the seawater on board, you're putting it through the strainers, you're putting it through the engines, you're doing all of that and then what are you doing? It's going right off board again. It's another source of emissions," Fernstrum says. "With a closed cooling system, you don't have that. That's all gone."

For R.W. Fernstrum, the advent of electric and hybrid systems on vessels has brought in new business. On Maid of the Mist's new fully electric tour ferries James V. Glynn and Nikola Tesla, for example, the firm supplied GRIDCOOLERS to cool the battery chillers as well as the propulsion and control systems. Notably, the keel coolers on board the aluminum-hulled fresh water catamarans are aluminum instead of the traditional copper nickel. "We've got that kind of flexibility in our design," Fernstrum says.

Another noteworthy green vessel equipped by R.W. Fernstrum is the Red and White Fleet's hybrid-electric tour boat Enhydra. "[The vessel has] more of a centralized cooling system, and we're cooling that cooling loop, which has a number of different hybrid components on it. We're using tranter plate and frame heat exchangers," Fernstrum says. "We've got a lot of different options that we can bring to the table for any given needs that somebody would have."

GHS
General HydroStatics
Software for Naval Architects
Stability | Strength | Seakeeping
GHS Version 17.50
New features include:
* New Dynamic Stability (DYNSTAB) module provides complete support for level 1 and level 2 IMO Second Generation Intact Stability guidelines.
* Probabilistic damage calculations now support up to 6 layers of divisions, allowing for more complex damage cases.
* SeaKeeping allows for more powerful damping control, including input of critical damping ratios, and experimental damping data, independent of numerical appendage damping. All hydrodynamic data is accessible by the user for automated parsing and post-processing.
Creative Systems, Inc.
P.O. Box 1910 Port Townsend, WA 98368 USA
+1 (360) 385-6212 | sales@ghsport.com
www.GHSport.com
For 49 years, the software that naval architects love.

Tech
File

Smart Protective Coatings Project

"We are working on technology that will not only advance green technologies used in the ocean but also protect Canada's marine ecosystem for years to come," says Mo AlGermozi, CEO of Graphite Innovation and Technologies (GIT).

The company is partnering with marine services company Horizon Maritime Services and research group Mitacs for the $4.6 million Smart Protective Coatings Project, which aims to introduce new graphene-based protective coating products for vessels. Canada's Ocean Supercluster is providing $2.2 million in funding with the balance coming from industry partners.

GIT's graphene-based technology provides nontoxic protection and is specifically tailored to increase vessel fuel efficiency and hydrodynamic performance by protecting against biofouling and corrosion. It is also engineered to help reduce underwater radiant noise.

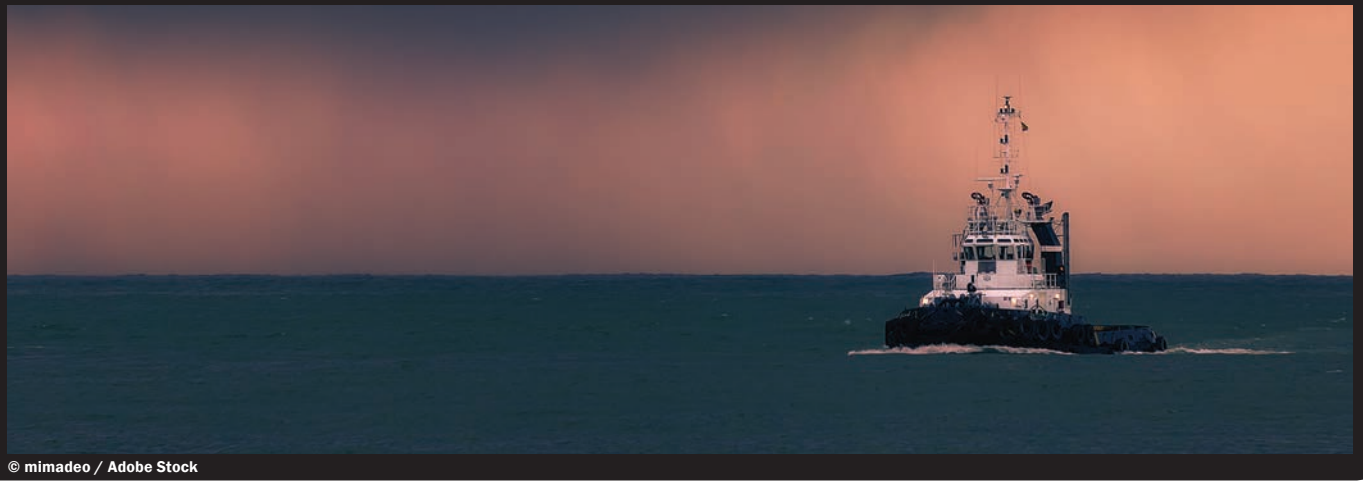
Among other advantages, the biocide-free hard foul release type coating's low volatile organic content (VOC) minimizes the loss of material once the coating dries. And due to the hardness of the coating it can easily undergo underwater hull cleanings without damage to structural integrity, enabling smoother and faster hull maintenance.

"The future of underwater marine coatings is driven by decreased marine pollution and increasing the energy efficiency of ships," said Dr. Marciel Gaier, GIT's CTO. "Our project will support this future, with the end goal of helping to position the marine and global shipping industries in an environmental leadership position while, in parallel, reducing operating costs."

Lloyd's Register will oversee and provide independent assessments under the Smart Protective Coatings Project, which will include a pilot production to supply quantities for demonstration and initial commercialization of LR-certified products.

John Hepburn, CEO and Scientific Director, Mitacs, said, "Thanks to the ongoing support of our partners, especially the government of Canada, Mitacs is able to accelerate innovative projects like Smart Protective Coatings. This initiative will provide great opportunities for GIT to train up their future R&D leaders with PhD and master's researchers."

Sean Leet, CEO, Horizon Maritime, said, "Having worked with GIT for over two years now, we are excited to be part of launching this OSC project and supporting the next phase of GIT's development. Our shared goal of reducing the environmental impact of commercial marine activities in our oceans is of paramount importance and we appreciate the opportunity to be on the leading edge of this transformational project."



© mimadeo / Adobe Stock

Tech
File

Autohydro:
User-friendly Engineering Software for Class Approval

Autoship Systems Corporation (ASC) supplied Boksa Marine Design (BMD) with its latest Autohydro 6.10, offering yet more features and tools leading to new efficiencies for calculating hydrostatic parameters, stability and longitudinal strength.

BMD, a naval architecture and marine engineering firm located in Lithia, Fla., has designed and engineered more than 600 completed projects up to 740-feet for over 50 clients since 2003, including leading shipyards.

Specializing in full-scale design and naval architecture from a blank sheet of paper for commercial marine and yachting clients across the world requires innovative, marine software solutions integrating every step of the CAD/CAM process, from generating hull lines to nesting of parts, onboard stability, load planning and an integrated CAD/CAM design program suite.


Autoship

"We use Autohydro to submit stability books to classification societies for a wide range of vessels engineered by BMD," said Nick Boksa, President of Boksa Marine Design. "Complicated stability issues require the Autohydro Hydrostatics and Strength software to analyze and solve," he said, adding, "to date, all of BMD's stability books have been approved by the designated class society, including ABS1."

ASC has worked closely and cooperatively with BMD to deliver on-time, complete engineering packages for workboats, pushboats, commercial ships and superyachts representing unique stability requirements.

"It's easy to import a hull derived from different 3D model files directly into Autohydro through its Modelmaker module with the full Windows interface and pull down menus," Boksa said. "We can get right to work defining tanks and selecting hydrostatic values critical for safe vessel operation. Additionally, Autohydro's tech support is excellent, providing solutions for our questions."

Autohydro's current operating version has now evolved to 6.10 during its 30th year of development, representing continual software improvement with features such as accidental oil flow performance, oil fuel tank protection, 2nd method for intermediate steps during flooding calculations and dynamic limit definition. Autohydro 6.11 is scheduled for release later this year.

For over 40 years ASC has developed premier design software solutions for naval architects and marine engineers on every continent. ASC also produces world-class loading instruments and load planning systems for the entire marine shipping industry.

Atlantic Endeavor

Atlantic Wind Transfers

U.S. offshore wind crew transfer company Atlantic Wind Transfers (AWT) said its second Jones Act crew transfer vessel (CTV) Atlantic Endeavor was launched at the end of December.

Designed by U.K. firm Chartwell Marine and built by Blount Boats in Warren, R.I., the new aluminum catamaran spent three days undergoing sea trials and U.S. Coast Guard inspections prior to deliver to Dominion Energy to support its two-turbine Coastal Virginia Offshore Wind Farm (CVOW) pilot project 27-miles off Virginia Beach. The 64.9-foot vessel will be based out of Virginia's Hampton Roads region under AWT's long-term contract with Dominion Energy for CVOW project support. Manned by a crew of two or three, Atlantic Endeavor has capacity to transport up to 24 wind farm technicians.

The vessel is equipped with MAN engines, Cummins generators, ZF Transmissions, HamiltonJet waterjets and Humphree USA Interceptors. Its service speed is 22-24 knots, with a sprint speed of 29 knots.

eFoiler Workboat

Artemis Technologies

An innovative, zero-emissions workboat featuring hydrofoils and a fully electric propulsion system is scheduled to hit the water before the end of the year. The 11-meter vessel, announced by Artemis Technologies COO, Prof. Mark Gillan, during a presentation to the Workboat Association's Technical Workgroup in January, will be built by Tuco Marine Group and is fitted with the Artemis eFoiler electric propulsion system. It is designed as a commercial multipurpose workboat platform to help operators reduce fuel usage and carbon emissions.

"The Artemis eFoiler is a truly transformative innovation that will help commercial operators across the world dramatically reduce their carbon emissions. The electric propulsion system provides significant range at high-speed, whilst also reducing operational costs through substantial fuel savings," Gillan said.

Hydrofoils, flight control system and electric drivetrain will power the vessel to cruising speeds of 25 knots and a top speed of over 30 knots. Its range will be 60 nautical miles at cruising speed.

Pennsylvania and Wisconsin

Damen

The Great Lakes Towing Company and Great Lakes Shipyard christened the newly built tugs Pennsylvania and Wisconsin at the company's Cleveland facilities in December.

The newly constructed tugs Pennsylvania and Wisconsin are the fourth and fifth tugs, respectively, in a series of 10 64-foot Damen 1907 ICE design harbor tugs that Great Lakes Shipyard is building for The Great Lakes Towing Company's operations. The tugs powered by two 1,000-hp MTU 8V4000 Tier III diesel engines, and generate over 30-tons of bollard pull. Their propulsion systems include the Canal Marine designed Logan FlexaDrive Hybrid power system, allowing the tugs to operate on electric power while at idle, underway at low speeds, or when under low loads, without the need to utilize the main engines, thereby reducing emissions and the cost of engine maintenance.

The series' sixth tug, not yet named, is slated for completion this summer.

Time Traveler


Metal Shark

With the delivery of Time Traveler in December 2020, Metal Shark has completed its four-year run of vessel production for NYC Ferry, Operated by Hornblower, handing over the final new vessel to join the fleet. The newbuild is the 12th 85-foot, 150-passenger, USCG Subchapter "T" NYC Ferry passenger vessel built at Metal Shark's Franklin, La. shipyard since deliveries to NYC Ferry began in April 2017. In that timeframe Metal Shark's Franklin yard also produced 10 97-foot, 350-passenger, USCG Subchapter "K" passenger vessels for the operator, for a total of 22 Metal Shark-built ferries for the service.

In 2016, Metal Shark was one of two builders originally selected to build passenger vessels for the new NYC Ferry service (the other builder, Horizon Shipbuilding, was acquired by Metal Shark in 2018). In 2017, Metal Shark announced a second order of NYC Ferry vessels under construction. Multiple follow-on orders resulted in the continuous production of 150-passenger and 350-passenger NYC Ferry vessels at Metal Shark Franklin.

New Dredge for Cashman

Cashman

Cashman Dredging and Marine Contracting Co., LLC signed a design contract with IHC America Inc. for a new 6,500 cubic yard trailing suction hopper dredge (TSHD). The new shallow draft, diesel-electric vessel will join Cashman Dredging's current fleet of specialized dredging equipment and will primarily service the coastal protection and navigation maintenance markets when it enters service in 2024. Cashman has not yet determined which shipyard will build the new dredge, a company representative told *Marine News*.

The design incorporates state-of-the-art dredge automation and high-efficient dredge equipment, as well as two dredge pumps that enable large discharge distances when operated in series. Furthermore, it features two suction tubes enabling operation in most conditions by either using both tubes or just one in a strong current scenario.

Patrol Boat Turned Research Vessel

Silver Ships

A refurbished 48-foot workboat has been delivered to The University of Southern Mississippi (USM) for its second life as a research vessel. The vessel, an Endeavor 45 cabin patrol vessel originally built by Silver Ships in 2008 for the State of Mississippi Department of Marine Resources (DMR), returned to the Theodore, Ala. shipyard for the transformation. The vessel is now capable of supporting the USM School of Ocean Science and Engineering's science and research missions.

The hull was extended by three feet aft, with added tie-downs on the aft deck, and the vessel's swim/dive platform was improved while removable railings were added over the transom. Key additions include a 1,000 lb. lift crane, 850 lb. davit, retractable awning over aft deck and Zipwake dynamic trim control system. The vessel's generator, radar and multifunction display were replaced along with its life raft and firefighting equipment. The waterjets were repaired and Cummins QSM11 inboard diesel powertrain was aligned, and the entire exterior and bottom of the vessel was blasted and painted.

Products

1 Raytheon Anschütz

2 Phoenix Lighting

3 ZF

4 IMTRA

5 Mercury Marine

1. ECDIS NX Compact

The new ECDIS NX Compact from Raytheon Anschütz is a preconfigured system of a 24-inch panel-pc and the ECDIS NX software designed to make installation and operation easier and safer. Optimized for ECDIS retrofits, the panel-pc is equipped with interfaces for Ethernet and IEC 61161-1 (NMEA). With a software installation wizard and selectable standard configurations for newbuilding and retrofit installations, the operating system and the ECDIS software install semi-automatically, requiring the ship-specific parameter input only.

2. SturdiSignal Nav Lights

Phoenix Lighting introduced the SturdiSignal Series of navigation lights, a fully modular and serviceable LED navigation light. Phoenix said its design allows for tool-less repair in minutes, without any electrical work. With a spare LED module kept onboard for field repairs, a vessel can always remain safe and compliant. The lights provide illumination for up to 6 nautical miles, for any vessel over 20 meters in length.

3. ZF AT 80 Thruster

ZF launched its new ZF AT 80 thruster model range, available as a 360-degree steerable thruster and as a retractable propulsion system, or as a bow thruster. With a power output of 1,380 to 1,585 kW, the propulsion system covers the range between the existing ZF 6000 and ZF 7000 models. The new hydrodynamically optimized shape of the underwater housing is designed to reduce drag and improve cavitation behavior, and its lean and flat design is geared to save installation space.

4. Side Power Thrusters

IMTRA introduced its new line of commercial-grade Side-Power thrusters designed for commercial vessels and larger recreational yachts. Available in four different tunnel sizes, the new products include proportional or on/off controls in AC-powered and hydraulic versions. Available in 12-, 16-, 20- and 24-inch tunnels, the new Side-Power thrusters provide up to 3,000 pounds force of thrust. Each unit is built with dual, counter-rotating, bronze five-blade props for durability and efficiency.

5. Mercury Marine V12 Verado

Mercury Marine's 7.6 liter V12 600hp Verado outboard engine is its most powerful and capable, said to be the world's first V12 outboard. The engine features a naturally aspirated, large displacement, quad cam powerhead that generates impressive torque. Contra rotating propellers give better "bite", while the industry's first two speed automatic transmission for an outboard optimizes engine rpm according to workload, facilitating powerful acceleration and efficient performance, the manufacturer said, adding the industry's first steerable gearcase on an outboard pivots independently underwater while the engine's powerhead remains in a space saving fixed position.

6. PPG HI-TEMP 1027HD Coating

PPG's next-generation, ambient-cure coating is engineered for challenging corrosion-under-insulation (CUI) conditions. A high-build product that offers dry film thickness of 10 to 12 mils in a one-coat application, PPG HI-TEMP 1027HD coating provides excellent protection against corrosion on pipes, vessels and construction parts when plants are in operation, PPG said, adding the durable coating is formulated to withstand severe temperature cycles ranging from -320 F to 1,000 F and resists dry exposure with intermittent temperature peaks of up to 1,200 F.

People & Companies


Agnevall


Roberts


Robins


Wheeler

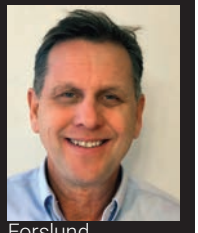

Enström

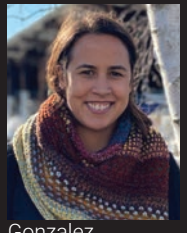

Bourque


Suhlmann


Herrebout


Beyko


Forslund


Gonzalez


Laheij

Agnevall Takes Over as Wärtsilä CEO

Håkan Agnevall has taken over as president and CEO of the Finnish marine equipment maker Wärtsilä. He succeeds Jakko Eskola, who will continue as a senior advisor to the Board and executive team until he retires on June 30.

Roberts Named President of Foss Maritime

Seattle-based tug and towing company Foss Maritime's chief operating officer Will Roberts has been promoted to president.

Leadership Change at Bay Diesel

For the first time since its inception in 1982, Bay Diesel has a new president. As voted by its board of directors in October 2020, senior VP of sales Willard "Rob" Robins has taken on the role of president, with Scott Wheeler, founder and current president, transferring to a new position as the chief executive officer.

Enström Named Head of Marine at Hempel

As Hempel vice president and head of marine, Alexander Enström will be a member of Hempel's operational management board, responsible for Hempel's global marine business.

Damen Promotes Suhlmann, Herrebout

As of April 1, financial director of Damen's naval and yachting divisions Ronald Suhlmann will become chief financial officer of Damen Shipyards Group, and Mario Herrebout, current general counsel and company secretary, will fill the newly create chief counsel role.

Sea Machines Promotes Bourque

Sea Machines Robotics promoted Phil Bourque to the role of business development and sales director, U.S. government.

Great Lakes Dredge & Dock Hires Beyko

Great Lakes Dredge & Dock, a U.S.-based dredging services giant, appointed offshore industry veteran Eleni Beyko as senior vice president offshore wind.

Forslund Joins BMT

Bill Forslund joined naval architecture and marine engineering design consultancy BMT as commercial business development manager, concentrating on West Coast new business, passenger vessels, navy and commercial tug and barge projects.

Gonzalez Joins Elliott Bay Design Group

Naval architecture and marine engineering firm Elliott Bay Design Group (EBDG) hired Jasmine Gonzalez as a senior project coordinator.

New CEO at Hamworthy Pumps

Marine and offshore pump manufacturer Hamworthy Pumps appointed Hans Christiaan Laheij – formerly with Schottel and Wärtsilä – as CEO.

Marine News 2021 Editorial Calendar

January 2021

Passenger Vessels

- Dredging
- Electric & Hybrid Vessels & Propulsion
- Health, Safety & Sanitization
- MaritimeEquipment.com Safety & Sanitization Resource Guide

Event Distribution:
PVA Maritrends:
Feb 6-9, Portland, OR

E-Magazine Edition: Offshore Wind Workboats

March 2021

Pushboats, Tugs & Barges

- Maritime Training & Education: Classroom, Simulation, Online
- Shipbuilding Report
- Coatings & Corrosion Control
- Spotlight: Q1 Inland Waterways Report
- MaritimeEquipment.com Coatings Resource Guide

Event Distribution:
AWO Spring Convention
Apr 13-15 Washington, DC
NACE Corrosion
Apr 18-21 Salt Lake City, UT

April 2021

Offshore Energy

- Water Treatment
- Marine Cranes
- Ship Autonomy / AI
- Marine Electronics: Communication & Controls
- MaritimeEquipment.com Water Treatment Resource Guide

Event Distribution:
CMA Shipping 2021
May 2021 - Stamford, CT

May 2021

Dredging

- Barges
- Material Handling Equipment
- Rope & Cordage
- Spotlight: Q2 Inland Waterways Report
- MaritimeEquipment.com Material Handling Resource Guide

Event Distribution:
Inland Marine Expo
June 2021 - St. Louis, MO
Seawork
June 15 - 17 - Southampton, UK

June 2021

Combat & Patrol Craft

- Multi-mission Workboats
- Patrol Craft Propulsion : Inboard, Outboard and Water Jets
- Marine Lighting
- Workboat Communications
- MaritimeEquipment.com Marine Lighting Resource Guide

July 2021

Propulsion Technology

- Autonomous Vessels
- Workboat Engines
- Fuels & Lubricants
- Workboat Conversion
- MaritimeEquipment.com Marine Propulsion Resource Guide

Event Distribution:
Clean Waterways
September 13-15 - Louisville, KY

E-Magazine Edition: Inland Waterways: Operations, Expansion & Dredging

September 2021

Shipbuilding & Repair

- Naval Architecture
- Shipyard Tools & Equipment
- HVAC and Ventilation
- Q3 Inland Waterways Report
- MaritimeEquipment.com Shipyard Resource Guide

Event Distribution:
SNAME Expo
October 2021 - Houston, TX

October 2021

MN100

- Offshore Wind
- Pipes, Pumps and Valves
- Maritime Training
- MaritimeEquipment.com Pipes, Pumps and Valves Resource Guide

Event Distribution:
SHIPPING Insight
October 2021 Stamford, CT, USA

November 2021

Great Workboats of 2021

- Tugs and Push Boats
- Power & Propulsion
- Deck Machinery
- Spotlight: Q4 Inland Waterways Report
- MaritimeEquipment.com Deck Machinery Resource Guide

Event Distribution:
Clean Gulf: December 2021
Workboat Show: December 2021

E-Magazine Edition: Patrol, Escort & Fast Craft Operations

Post Your Resume for Free • Energize Your Job Search @ MaritimeJobs.com

SEA GRANT GREAT LAKES TRANSPORT EXTENSION EDUCATOR

Salary: $ Negotiable; expected $50,000-$80,000, Full Time, Mid Career

Category: Project Engineering / Project Management

Job Location: MN Sea Grant Department, 31 W College St, Duluth DULUTH, MN, 55812 United States
Contact
Associate Director of Outreach and Coastal Communities Extension Educator
Email: jschombe@d.umn.edu
Work Phone : 218-726-6182
MN Sea Grant Department, 31 W College St, Duluth DULUTH, MN, 55812 United States

QUALIFICATIONS:
Candidates must possess at least a Masters degree and should have at least 3 years experience.

To be eligible, you must meet all of the following REQUIRED QUALIFICATIONS:

A Master's degree is required. This degree must be from a regionally accredited institution or equivalent.

3 years experience working on maritime transportation, hazardous materials transport, marine/coastal policy.

Excellent written, interpersonal, and group presentation communication skills, with demonstrated experience in communicating science to non-scientists.

Demonstrated experience in developing, planning, and implementing education or outreach programs for diverse audiences.

Demonstrated ability of working effectively in a team setting with staff, constituents and partners with varying backgrounds, interests, and abilities in an atmosphere of mutual respect.

Self-motivated with demonstrated ability to work independently.

Best qualified applicants may also demonstrate the following PREFERRED QUALIFICATIONS:

Understanding of Great Lakes maritime and hazardous materials transport issues such as supply chain security, short sea shipping, intermodal transportation, economic and environmental impacts, spill response planning, waterway infrastructure maintenance, ballast water management to minimize invasive species introductions, and trade and regulatory policies.

Understanding of environmental justice concepts as they relate to hazardous materials transport

Ability to communicate complex maritime related issues effectively to lay audiences.

Experience at writing and administering grants.

Demonstrated ability to use a variety of training methods, including online/virtual methods.

Demonstrated high level of analytical, organizational, and planning skills.

Demonstrated knowledge of logic models and evaluation techniques.

Strong interpersonal skills, particularly the ability to work effectively with a diverse group of individuals, both within and outside the college and university.

Experience working with and resolving stakeholder differences

Demonstrated ability to work as part of a team including experience leading project teams.

Experience in developing and implementing regional and national extension programs.

VESSELS FOR SALE / BARGES FOR RENT

Marine Marketplace

VESSELS FOR SALE / BARGES FOR RENT

ZIDELL
MARINE CORPORATION

Specializing In Barges
• Single or Double Hull, Inland or Ocean-Going
• Chartering & Sales

Ask for Bill Gobel
(503) 228-8691 • (800) 547-9259
2020 SW 4th Ave Suite 600
Portland, OR 97201

TUGS/BARGES FOR RENT
BARGES SIZED FROM 8'x18' TO 45'x120' ALSO "SHUGART" SECTIONAL BARGES "TRUCKABLE TUGS" HERE
Smith Brothers Inc.,
Galesville, MD 20765
(410) 867-1818
www.smithbarge.com

WORLD ENERGY REPORTS
MARKET INTELLIGENCE SUITE FOR FLOATING PRODUCTION SYSTEMS
The deepwater sector is back and growing. Get everything you need to make smarter decisions with World Energy Reports.
FPSOs • SEMIs • SPARs • TLPs • FLNGs
FSRUs • FSOs
To Activate Yout FREE Report, Visit:
www.WorldEnergyReports.com

NEW PRODUCTS

Marine News
The power to reach the largest audited circulation in the workboat market.

www.marinelink.com

DOR-MOR®
Pyramid Mooring Anchors


SINCE 1988
Sizes 15 lbs. to the NEW 4,000 lbs.
Designed to dig into the bottom and achieve holding power 10 times its weight at 3:1 scope
To hold boats, docks, nav. aids, nets, cables, aquaculture pens. One lb. of Dor-Mor can replace 10 lbs. of concrete.
Dor-Mor, Inc.
P. O. Box 461, Claremont, NH 03743
PHONE/FAX 603-542-7696
www.Dor-Mor.com
info@Dor-Mor.Com

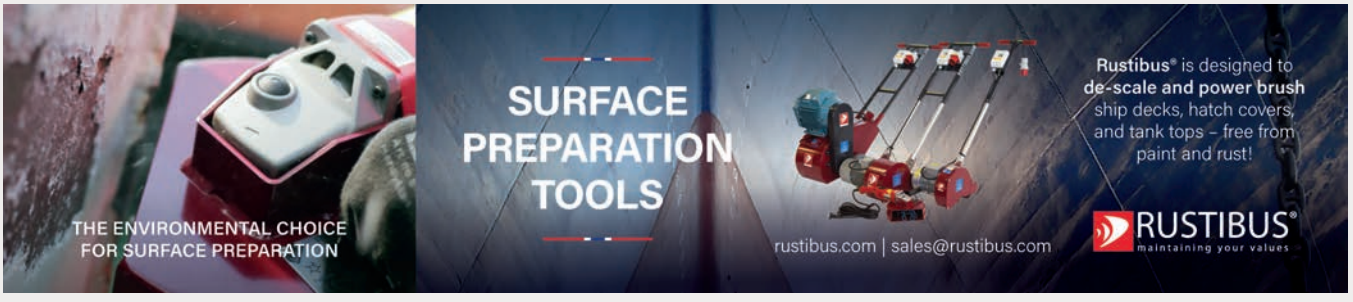
THE D-Style

HS MARINE PROPULSION
HSMarineProps.com I (228) 875-6611

Join the industry's #1 Linkedin group
THE MARITIME NETWORK
http://bit.do/MaritimeNetwork

Marine Marketplace

NEW PRODUCTS

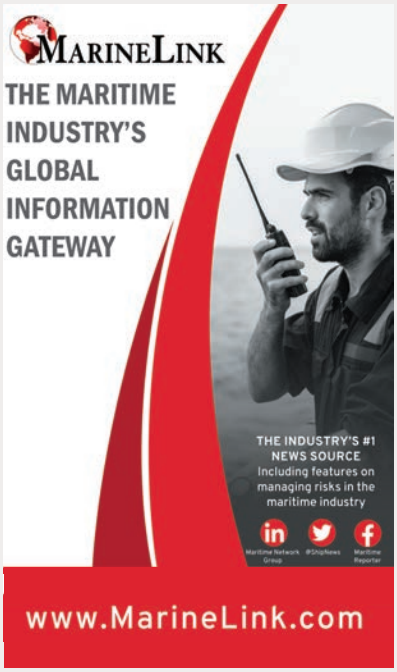


Marine Marketplace

NEW PRODUCTS

www.mesamarine.com • marine.exhaust@gmail.com • 1-251-928-1234

PROFESSIONALS



ADVERTISER INDEX

Page	Company	Website	Phone#
31	Ahead Sanitation	www.aheadsanitationsystems.com	(337) 330-4407
25	All American Marine	www.AllAmericanMarine.com	(360) 647-7602
19	Arcosa	www.arcosamarine.com	(615) 400-4373
35	Creative Systems	www.ghsport.com	(360) 385-6212
3	Eastern Shipbuilding Group	www.easternshipbuilding.com	(850) 763-1900
C3	Engines, Inc.	www.enginespower.com	(870) 268-3700
25	Environmental Marine, Inc.	www.envmar.com	(606) 561-4697
5	Hyde Marine/Calgon	www.hydemarine.com	(724) 218-7001
C2, 1	Marine Systems, Inc	www.marinesystemsinc.com	(985) 223-7100
33	McDonough Marine Services	www.mcdonoughmarine.com	(888) 569-5929
27	MOPS Maritime License Insurance	www.mopslicenseins.com	(800) 782-8903 ext 3608
17	Omnithruster	www.omnithruster.com	(330) 963-6310
31	PYI Inc.	www.pyiinc.com	(425) 355-3669
C4	R.W. Fernstrum & Company	www.fernstrum.com	(906) 863-5553
13	Schoellhorn-Albrecht	www.schoellhorn-albrecht.com	(314) 965-3339
7	Sennebogen LLC	www.sennebogen-na.com	(704) 347-4910

The listings above are an editorial service provided for the convenience of our readers.
If you are an advertiser and would like to update or modify any of the above information, please contact: nicole@marinelink.com

WE POWER YOUR BUSINESS

engines, inc.™

RELIABLE POWER FROM 40kW TO 350kW

When reliability is critical you need an engine you can depend on. That's why we use **John Deere PowerTech™** engines which are durable, fuel efficient, and easy to maintain. They are also backed by the support of one of the strongest engine and equipment companies in the world.

On the inland waterways, your generator set powers your business. When you choose a power generation package from **engines, inc.**, you can rest assured that you are getting the best engineered package available anywhere. You also get access to the most reliable 24/7 support structure in the business. Our skilled staff and our extensive dealer network will provide you with reliable service and support that you can count on.

24-HOUR SERVICE LINE
870-268-3799

With over 150 years of collective experience in our shop and over 75 years of partnership with John Deere, we are, without a doubt, your best choice for Generator Sets and Propulsion Engines on the inland waterways. Our experience distinguishes us and our integrity sets us apart. When everything is on the line you can count on us: **We Are Your Power Source.**

engines, inc.
Jonesboro, AR • 800-562-8049
Conroe, TX • 936-441-5592
www.enginespower.com
24-Hour Service Line
870-268-3799

JOHN DEERE
POWER

AUTHORIZED JOHN DEERE ENGINE DISTRIBUTOR

We take the heat, so you don't have to.

Cool. Because you need it.
We deliver cool based on your reality. So no matter where you operate, hot days and heavy loads will never slow you down.

GRIDCOOLER® Keel Cooler

- **One Piece Head Design** maintains greater structural integrity.
- **Higher Silver Content Braze Joints** resist fatigue and maintain the strength of surrounding material.
- **Better Penetration at Braze Joints** places more braze material with less heat, making joints stronger.
- **2-Year Warranty on Copper Nickel GRIDCOOLER Keel Coolers:** Industry-leading design, craftsmanship and materials create industry-leading products.
- **70 Years of Experience with Fully Assembled Packaged Keel Coolers**: Our focus is and always has been heat exchangers.

WEKA Boxcooler®

- **Over 20 Years of Experience with Copper Nickel Boxcoolers** offering longer product life cycle than standard coated tube units.
- **Manufactured in the USA and The Netherlands:** provides the greatest product availability.
- **Weka Guard and Protector** eliminate the need for bulky and costly copper sacrificial anodes.

Tranter® Heat Exchangers

- **Tranter Heat Exchangers** product offerings make Fernstrum your single source for multiple stage cooling systems.
- **Tranter Superchanger** plate and frame heat exchanger provides a range of options in pattern, size and material for a wide variety of applications.
- **Tranter Platecoil** provides an efficient and cost effective alternative to traditional pipe coil heating for bulk cargo, ballast and other applications.

FERNSTRUM®
R.W. Fernstrum & Company

fernstrum.com | 1.906.863.5553 | sales@fernstrum.com | ISO 9001:2015

© 2021 R.W. Fernstrum & Company. All rights reserved. FERNSTRUM® and GRIDCOOLER® are registered trademarks of R.W. Fernstrum & Company. All other trademarks cited are the property of their respective owners.