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Volume 93 • Number 11

Marine News

NOVEMBER 2022

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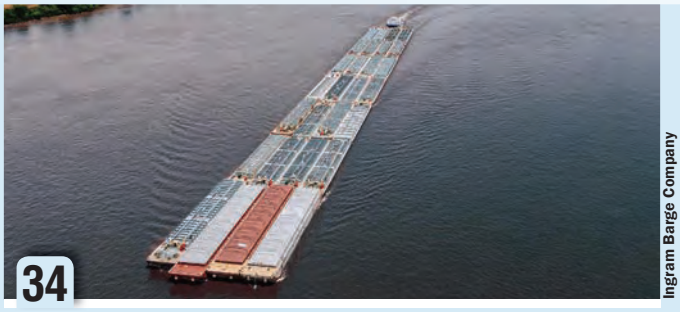

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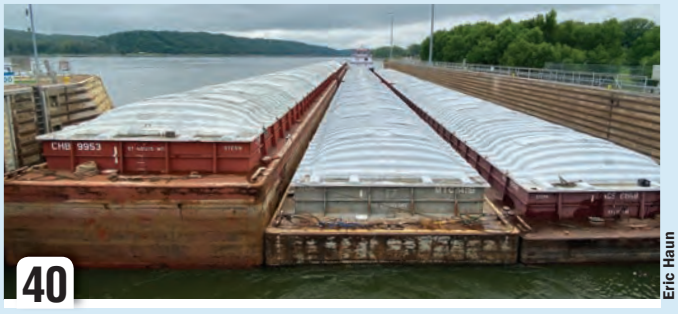
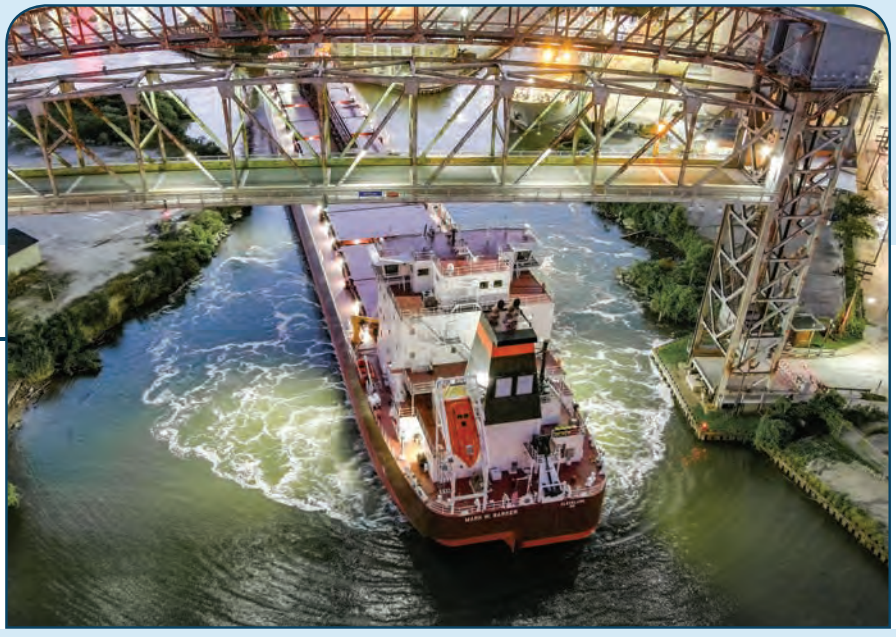


Eric Haun

On the Cover

The Mark W. Barker, delivered to The Interlake Steamship Company from Fincantieri Bay Shipbuilding, is among the most significant U.S.-built vessels in a generation.

(Photo: The Interlake Steamship Company)



Editor's Note

Eric Haun, Editor,
haun@marinelink.com

This month's issue is a special one, our annual edition highlighting the most notable newbuilds delivered in 2022. From sturdy and nimble workboats, to the first new Jones Act laker in a generation, each vessel on display showcases the industry's engineering prowess and technological ingenuity, with the focus on improving efficiency in operations. The maritime industry has no shortage of challenges to overcome, and each of Marine News' top vessels will, in one way or another, aid efforts to tackle them.

When it comes to challenges, there is arguably no sector with a bigger one to deal with than the inland barging industry, which is currently trying to work its way through significant disruption caused by historically low water levels on the Mississippi River. And the situation is not much better on the Ohio and Missouri rivers. But there's a silver lining, as The Waterways Council, Inc. pointed out on social media: "Media attention on the low-water disruptions is highlighting the critical importance of the inland waterways and the need to continue to invest in it as a vital part of the transportation supply chain." Well said.

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3 Robert Kunkel,
president of Alternative Marine Technologies and First Harvest Navigation, served as the Federal Chairman of the Short Sea Shipping Cooperative Program under the DOT's MARAD from 2003 until 2008. He is a past VP of the Connecticut Maritime Association and a contributing writer for *Marine News* and **MarineLink.com**.

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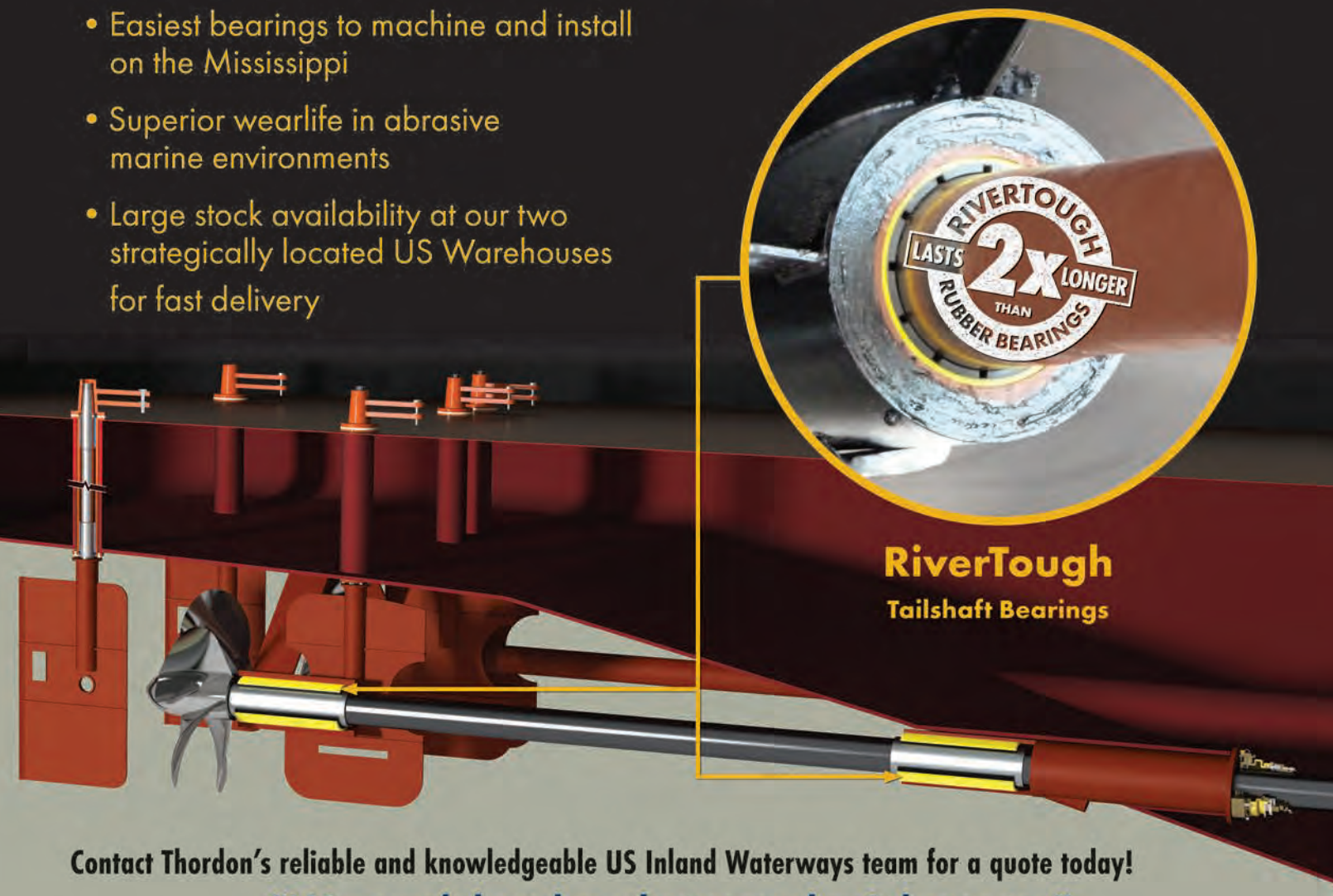

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By the Numbers

US Offshore Wind Building Up

By Philip Lewis, Intelatus Global Partners

Once again, the events of the last month have shown that the drive to grow the U.S. offshore wind segment has lost little steam. The foundations are firmly in place to support the deployment of 30 gigawatts (GW) of offshore wind by 2030 and 110 GW by 2050.

Floating wind farm technology demonstration projects are being developed for both Atlantic and Pacific coasts as a precursor to large-scale floating wind farm projects being constructed towards the end of the decade and beyond. This month has seen an acceleration of the efforts to support the development of commercial scale floating wind technology in the U.S. as the federal government sets a target to deploy 15 GW of floating wind capacity by 2035. Whereas this represents a significant opportunity, there also remain numerous supply chain challenges to address, especially as the global installed floating wind capacity is only around 150 megawatts (MW) today.

Two major outer continental shelf (OCS) projects with around 940 MW of capacity have already reached final investment decision (FID) and have commenced onshore construction.

One large OCS project is now close to final permitting and legal objections have been removed to the development of an approved offshore wind pilot project in the Great Lakes. The number of projects that are expected to make a final investment decision within the next 18 months is nine amounting to around 9 GW of capacity.

A further 14 projects with a capacity of close to 12.5 GW are expected to make an FID within 18-36 months as well as an additional nine projects for 10 GW in 36-60 months.

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Longer term, we have identified 35 projects with a total capacity of 41 GW, which support the installation of a cumulative 66 GW by 2035 and around 75 GW by 2040.

Eleven OCS developments with a potential of over 18 GW are currently undergoing federal permitting review to create the foundation of meeting the 30 GW by 2030 goal. 17.5 GW of project capacity has secured offtake commitments from states. Longer term, deployment goals by states already amount to over 96 GW, which is beginning to make the White House goal of 110 GW by 2050 look somewhat conservative.

Federal authorities have launched the leasing process for over 4.5 GW of floating wind capacity offshore California, further auctions are being developed for the South Atlantic, the Gulf of Mexico, the Central Atlantic, Oregon and the Gulf of Maine before the end of 2024. Expressions of interest have also been received to develop bottom-fixed and floating sites in the Central Atlantic.

An unsolicited request has been submitted to develop a 2 GW floating wind farm in Washington State.

Turbine component, foundation, and cable factories and Jones Act wind farm vessels are being built in the U.S. and offshore wind port development is accelerating. Incentives to promote further investment in the local supply chain and Jones Act vessels have been rolled out.

Our forecast accounts for projects that will install over 70 GW of capacity in this and the next decade and a total 110 GW by 2050. The 69 GW forecast capacity will require capital expenditure amounting to around $210 billion to bring onstream, a recurring annual operations and maintenance spend of around $7 billion once delivered, and close to $32 billion of decommissioning expenditure at the end of commercial operations.

For more information about Intelatus Global Partners' U.S. Offshore Wind Market Forecast, visit www.intelatus.com or contact Michael Kozlowski at +1 561-733-2477or Philip Lewis at +44 203-966-2492.

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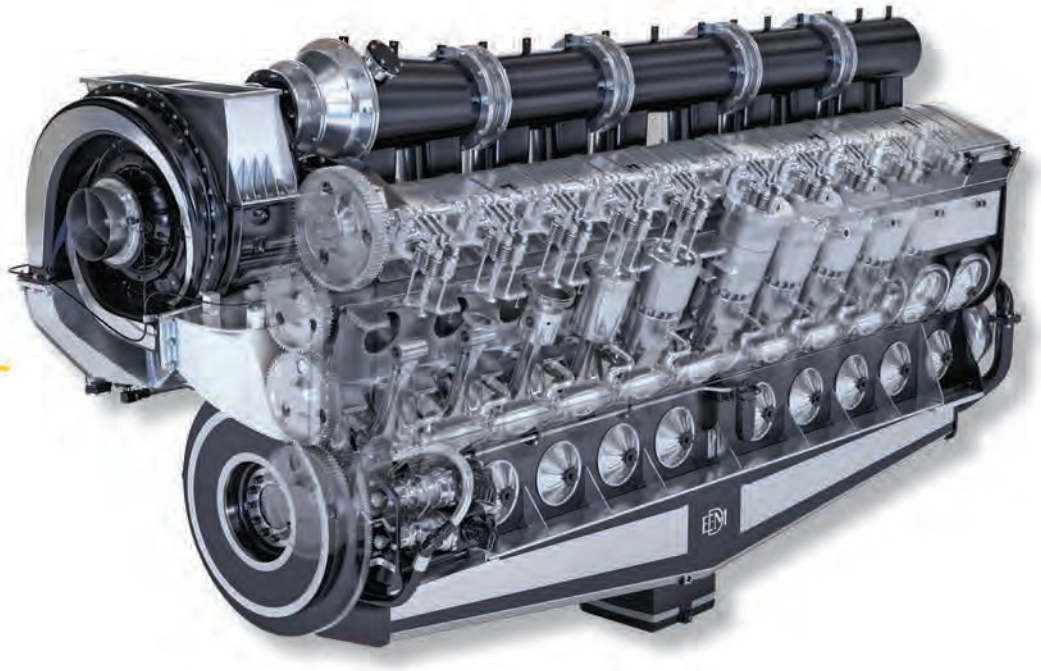

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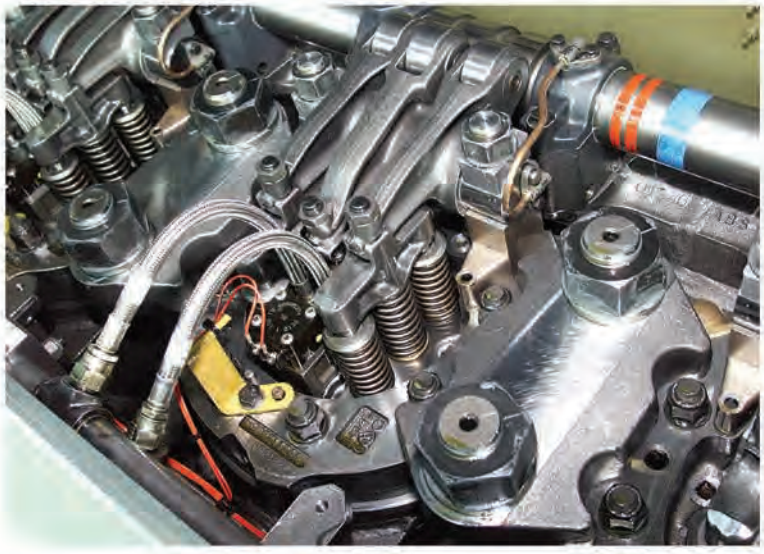

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Edward G. LeBlanc

Head of Marine Affairs, Ørsted

Edward G. LeBlanc leverages his 40+ year career with the U.S. Coast Guard as the Head of Marine Affairs, Ørsted, in forwarding its efforts to build clean energy offshore wind farms while helping to maintain safe maritime navigation for both traditional maritime operators in the region as well as Ørsted vessels. The path is neither straight nor easy, but LeBlanc gives an overview of the plan.

By Greg Trauthwein

Building Bridges for Offshore Wind

All images: Ørsted

Ed, to start can you give us a brief on your career?

EL: I've been with Ørsted since 2019, originally as the Northeast Marine Affairs Manager and now head of marine affairs. Our fundamental mission in marine affairs is focused on navigation safety. We facilitate navigation safety, we preserve navigation safety, we enhance navigation safety for all of our stakeholders, including those external to Ørsted, current waterway users, as well those that are internal to Ørsted, our own vessels, our own people. To do that, I have a staff of nine spread throughout the East Coast whose day-to-day functions is to engage with all stakeholders to make sure we understand and address concerns.

For the previous 44 years (before 2019), since I was 18, I served a full career with the U.S. Coast Guard. I was a ship driver, but I spent my last 10 years or so involved with the offshore wind industry.

The Ørsted name is well known to this audience, but can you give by the numbers look at the offshore wind and marine operations in the U.S. market today?

EL: Ørsted has one operational project, the Block Island Wind Farm, a small wind farm with five towers. (While it's small), it does supply electricity to the entire Block Island and allow Block Island to completely shut down its diesel generator. We have another project that's just beginning construction, the South Fork Wind Farm, a 12 tower wind farm that will be off the coast of Rhode Island. And then we have about a half a dozen other projects in the Northeast and in the mid-Atlantic that together represent about five gigawatts of electricity.

The availability of vessels to install, build and maintain offshore wind farms has been an on-

going conversation. I know this might be outside of your lane, but in broad overview, can you discuss how you see the vessel availability question and discussion?

EL: Generally, I think the vessels are available. If you look at the supply chain, it's a "if you build it, they will come" situation. The wind turbine installation vessels, the heavy lift jack vessels, the cable laying vessels, those vessels are in very limited or no supply in the U.S. There are no Jones Act compliant wind turbine installation vessels yet. There is one under construction, but none yet.

So it's key that we get those vessels from the international market to serve our U.S. projects, at least initially until we build up a Jones Act fleet. But those vessels are at the tip of the pyramid. As that pyramid spreads out all those support vessels that are needed, both in terms of getting components to those vessels and supplying all of their other logistics needs, those vessels are U.S. flagged, ready to go vessels. We do have a substantial fleet of those vessels available.

I know a big part of your job is outreach to local mariners. From where you sit, what are mariners' major concerns about navigating within and around wind farms?

EL: Their major concerns are normally focused on access to wind farms. They're afraid that they will not have access, but the Coast Guard has made clear in writing that navigation within wind farms will be preserved. And then the concerns are their ability to navigate within the wind

Inside one of the Ørsted simulators designed to help mariners be comfortable when navigating an offshore wind farm.

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farm. Here we provide mitigation and support to ensure that, to the greatest extent possible, mariners can continue to operate within a wind farm to pursue their livelihood, which in the northeast is primarily commercial fishing; in the mid-Atlantic it's primarily commercial shipping.

From what I understand, Ørsted is the only developer in the U.S. to have a full mission ship simulator that creates an experience of navigating within the offshore wind farm.

EL: The simulator program is a real success story. The primary issue that we (heard from mariners) is that the spacing was an issue. In the northeast, all of our towers are spaced evenly one mile apart. And in the mid-Atlantic, nearly so all on a uniform grid pattern. But Greg, your idea in your head of one mile apart, is different than my idea of a mile apart, which is different than someone else's idea of a mile apart. So we created a simulated wind farm and a full mission simulator to provide some sense of spatial awareness. So for mariners who may have some fears about operating (within the wind farm), this really helps reduce that fear. And without exception, there's not a single person that has gone into this simulator, or experienced it, and left saying, "I'm more concerned about navigating now, than I was before."

I understand that you have three simulators. Are they your own, or where are they located?

EL: We own the software, we own the video, but we use the facilities at MITAGS outside of Baltimore, the Maritime Institute of Technology and Graduate Studies. We use the facility at USMRC in Middletown, Rhode Island, the United States Maritime Resource Center. And we use the simulator at SUNY Maritime, the SUNY Maritime College in the Bronx.

Ed, I appreciate your time, I just have one more question. I understand that Ørsted proposed a navigation safety and training fund to support mariners who were impacted by offshore wind. How exactly will that program work?

EL: Listening to the mariners, and particularly listening to

them in the simulator, what we heard was that they would be comfortable navigating in a wind farm if they either had better tools or better training for their crew. That was recurring feedback we were receiving. So we created a fund – which is still in the conceptual stage on exactly how it'll be administered – to subsidize upgrades to mariner's equipment.

So if you've got an old Magnetron radar that you want to upgrade to the newer pulse compression type radar. And if you feel your crew needs some training, we can make some training available to your crew, or we will subsidize paying for that training, to get your crew proficient so that you as the master of a vessel feel comfortable navigating in a wind farm.

Column

Washington Watch

Mid-term Elections Bring Changes, Uncertainty in Congressional Maritime Leadership

By Jeff R. Vogel, Cozen O'Connor

Regardless of whether the Republicans seize or the Democrats maintain control of the House and Senate, there is a guarantee that changes in leadership will occur in some of the key Congressional leadership positions that will impact the maritime industry. Two of the most significant Congressional committees of jurisdiction are the House Transportation and Infrastructure Committee (House T&I) and the Senate Committee on Commerce, Science, and Transportation (Senate Commerce). Both committees have jurisdiction over the U.S. Coast Guard (USCG), Maritime Administration (MARAD), Federal Maritime Commission (FMC), and certain aspects of the U.S. Army Corps of Engineers (USACE), among numerous other federal agencies.

In that capacity, House T&I and Senate Commerce oversee and authorize the Executive Branch's activities with regard to marine safety and navigation, merchant mariner

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training and licensing, inland waterways, harbor improvements, coastal zone management, both the U.S. Coast Guard Academy and the U.S. Merchant Marine Academy (USMMA), and transportation and commerce aspects of U.S. Outer Continental Shelf (OCS). These committees also authorize and oversee programs that are critical to the continued support and growth of the U.S.-flag maritime fleet and U.S. ports, including the Maritime Security Program, Tank Security Program, cargo preference, and Port Infrastructure Development Program (PIDP) grants. They also provide a critical oversight function for the Jones Act and the associated national defense waiver process.

The impact of DeFazio's retirement

Since 2018, Congressman Peter DeFazio (D-Ore.) has served as the Chair of House T&I and previously served in various capacities on the committee – including Chair or Ranking Member of four of the six House T&I subcommittees – since 1987. During that time, he has been a constant champion for the U.S. maritime industry. Among numerous other accomplishments, Chairman DeFazio successfully led the effort to allow for the full-utilization of the annual collections to the Harbor Maintenance Trust Fund (HMTF), essentially unlocking $25 billion in collected funding for dredging federal harbors to their constructed widths and depths. In the same bill, Chairman DeFazio was able to immediately authorize the release of nearly $10 billion in already collected fees sitting in the HMTF to dredge harbors, repair jetties, and maintain navigation channels.

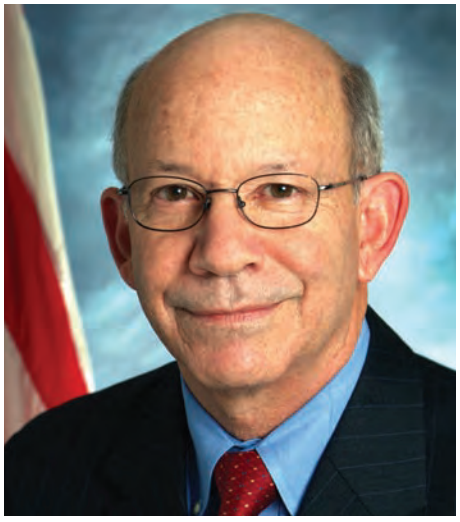
Under his leadership, House T&I has also led (1) the authorization of the National Security Multi-Mission Vessel (NSMV) program, (2) substantial growth in authorized PIDP grants, and (3) the development of additional oversight in the Jones Act waiver process. As a result, Chairman DeFazio has received awards from nearly every maritime industry group, including the American Association of Port Authorities (AAPA), International Propeller Club, National Association of Waterfront Employers (NAWE), and Shipbuilder's Council of America (SCA).

After 36 years in Congress, Chairman DeFazio announced that he will not seek re-election. Accordingly, the chairmanship will be up for grabs, even if the Democrats retain control of the House. Rep. Rick Larsen (D-Wash.) appears to be the front-runner to serve as chair, if the Democrats retain control and Rep. Sam Graves (R-Mo.), the current Ranking Member of House T&I, is the most likely candidate to take the gavel if the Republicans flip the House. Either way, Chairman DeFazio's successor will have huge boots to fill.

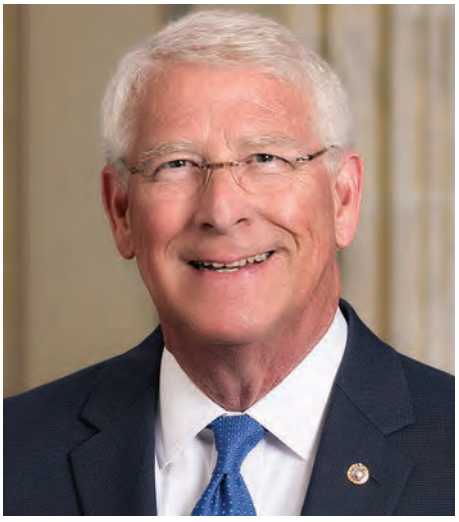
Wicker's departure could create waves

On the Senate side, it is anticipated that current Senate Commerce Ranking Member Sen. Roger Wicker (R-Miss.) will be departing the committee to assume the role of either Chair or Ranking Member of the Senate Armed Services Committee (SASC). Sen. Wicker previously served as a Chair of Senate Commerce prior to the 2020 election, having assumed the role from Sen. John Thune (R-S.D.), in 2019 when Sen. Thune was named Senate

Column
Washington Watch



U.S. Congressman Peter DeFazio



U.S. Senator Roger Wicker

Majority Whip. Sen. Wicker also previously chaired the SASC Seapower Subcommittee, overseeing Navy and Marine Corps planning and operations policy and programs, as well as the National Defense Sealift Fund, which provides funding for MARAD's National Defense Reserve Fleet and Ready Reserve Force.

In both his Senate Commerce and SASC leadership roles, Sen. Wicker has been a constant champion of the maritime industry, introducing numerous bipartisan bills to directly assist the maritime industry. As Senate Commerce Chair and Ranking Member, Sen. Wicker led the growth of MARAD, including authorizing billions of dollars for the NSMV program, PIDP grants, and the Maritime Security Program and Tanker Security Program. During the current legislative session, Sen. Wicker also co-sponsored the Maritime Technological Advancement Act along with Sen. Ben Cardin (D-Md.), which would establish a $40 million per-year grant program to develop, offer, or improve educational or career training programs for American workers in the maritime workforce.

Sen. Wicker is likely to be replaced by Sen. Ted Cruz (R-Texas) as either Ranking Member or Chair of Senate Commerce, depending on whether the Republicans take control of the Senate. Sen. Wicker's tenure has been marked by bi-partisan collegiality. Sen. Cruz tends to reach across the aisle less frequently, and his relationship with Sen. Maria Cantwell (D-Wash.), who is likely to stay on as the top Democrat on Senate Commerce, may be challenging. Accordingly, regardless of November's election outcomes, the maritime industry should monitor this relationship closely, as partisan stalemates could lead to a slowdown in critical maritime legislation, such as the USCG and MARAD authorization bills, that are critical to support the U.S. maritime workforce.

Busy lame duck

Following the mid-term elections, Congress is likely to have to plenty to do prior to committee leadership gavels trading hands in January 2023. The government is currently funded only through December 16, 2022. Congress will likely look to pass a massive omnibus spending bill, which may include the Water Resources Development Act (WRDA) of 2022, which would authorize 36 new USACE feasibility studies and authorizes or modifies 21 projects for construction. In addition, while the Senate held limited debates on the National Defense Authorization Act (which includes both the USCG and MARAD authorization bills) in October, final passage will not occur until after the mid-term elections. Accordingly, while maritime stakeholders should be focused on family and friends during the holiday season, it may be worth occasionally checking C-SPAN to see how these critical bills develop.

Column
Training

All photos: Pat Folan

Recruiting Gen Z in the Marine Industry

By Pat Folan, Tug & Barge Solutions

Who is Gen Z?

Generation Z, according to the Pew Research Center, are the people born between 1996 and 2012. Gen Z is vastly different from previous generations. Some of the issues that have affected their perspective on life are COVID-19, the Great Recession and school shootings. They believe that stability is difficult to achieve and that worry and anxiety are at the center of their lives. They don't necessarily see a world full of possibilities and success.

- **They spend 3 hours per day on social media**
- **Over half spend 10 hours or more each day on electronic devices**
- **68% have difficulty sleeping due to stress**
- **58% report feeling sad often**
- **They are "loneliest" generation**
- **Only 45% feel their mental health is very good**

More than 60 million members of Gen Z are poised to enter the workplace in the next few years, and they will transform our work habits.

Gen Z is the first generation to grow up being connected to a computer in their hands that can get them information on anything that they want to know at any time. Their values and behaviors are completely different from previous generations because they have been connected to the world and all of its information. And it is not a passive connection. They share their stories, their experiences, and their knowledge with the world and in turn receive other's shared lives.

Their story is their brand, and building their brand is what they do best. And why wouldn't it be? They live in a world where people "like" each other's photos, ideas, movies, etc and those devices they live on allow for this endless commenting, critiquing, and sharing. It's imperative to have a great personal brand so that others will follow you. Anything that Gen Z does in life becomes part of the journey of the person that they want to become.

And that's where recruiting starts – the intersection of your corporate brand and their brand. For Gen Zers, work is big part of that journey, and they are looking at the potential job with your company based on how well it fits in with their story. Does the story of working at your company, on your vessels or in the office, enhance their personal brand?

In the marine industry, attracting Gen Z has challenges. Gen Z craves social contact, so living on a boat for two to three weeks is not instantly appealing. And they have been brought up to be the center of the universe, and accepting authority is hard. It is all the more difficult on board your vessels because the older captain is the center of the vessel's universe.

Gen Z hiring facts

1. **54% won't apply if they feel recruitment is dated—paper-based, long timelines.**
2. **82% expect the hiring process to take two weeks-transparent communication is essential.**
3. **Managing by fear would compel 25% to leave.**
4. **Salary and work-life balance are essential—this includes mental health.**
5. **59% are willing to tackle a new skill if it leads to**

a salary increase.

6. **When a form asks for gender, 59% of Gen Z believe "other" should be an option.**
7. **Both Gen Z and Millennials list stress as #1 drag on productivity—mental health support programs will be necessary**

Of the above, the marine industry has some problems. For one, older captains tend to strike fear into the hearts of new hires, and work/life balance can be horrible at times. In addition, salaries often do not keep pace with shore-based businesses, and there aren't too many new skills that would increase your pay. And stress is part of the job in the marine industry.

So how will you sell your work experiences to attract the new generation? Before you answer that question, let's talk about their eight second filters.

Gen Z's average attention span is eight seconds. Not a lot can be digested in eight seconds. Their minds are working overtime to process information, and things slip through the cracks. They are being hit with too much information, and they are filtering out things that don't really matter in daily living.

Any recruiting (and training) program has to be able to get past the filters. So what does this mean for a company trying to reach out to this generation? Whatever it is we are attempting to convey, much less explain, will need to be communicated more frequently in shorter bursts of "snackable content." Why? Because members of Generation Z are the ultimate consumers of snack media. They communicate in bite sizes.

The good news is that once something does gain their attention and is deemed worthy of time, they can become intensely committed and focused. The very internet that forced them to develop eight-second filters is the same internet that allows them to go deep on any topic they desire and to learn from a community of peers. And this means we can still engage them on a very deep level.

What are Gen Zs job preferences?

- **Variety**
- **Work-Life Balance**
- **Self-Directed**
- **Independence**
- **Flexibility**
- **Competitive Pay**
- **Formal Training – 84% expect ongoing development opportunities**
- **Access to a Direct Supervisor – 40% expect ongoing development opportunities**
- **Working alongside caring, friendly and socially-conscious people.**
- **Working at a company with a commitment to diversity, equity and inclusion**

When recruiting employees, it is important to know that your company is being vetted at the same time. Just as you use social media to see what type of person has applied at your company, Gen Z does that about you. They want to know who runs the company. Who would they be dealing with and are they likely to get along with you. What have others said about you? What is your mission statement? You say your mission is to be innovative, but you haven't updated your website since 2016. Gen Z forms opinions of a company based not only on the quality of their products/services but also on their ethics, practices and social impact. The messaging you convey to a potential employee is equally as important as the actual work they'll be conducting. It has to fit their story.

Growing up with ubiquitous connectivity, evolving mobile technology and in a growing gig economy has altered how Gen Z views employment and developed expectations of more fluidity. This would consist of customizing their own career plan, mentoring programs and greater learning and development opportunities.

How does someone progress at your company? If I were to start there tomorrow, could I see my career path laid out for me? One of our companies is laying out every possible position in the company from the new hire deckhand to the CEO. Every employee will be able to see the opportunities within the company, what they will need to know to move into the positions and now everyone can see how high they can go. The best part is that the CEO is onboard. He wants to attract the best people that he can for his company and fully believes in promoting from within.

The people you hire will soon represent the people to whom you are selling. Linking arms and minds with a younger representative for your company can keep you connected. It can also help you fill in the gaps in your technological profile.

There is a highly innovative, productive, and self-driven workforce that's waiting for you to tap into it—not begrudgingly, but as a competitive advantage. You have an opportunity to hire people now that will transform your business.

Column

Great Lakes

Great Lakes Winter Supply Chain – A Cause for Concern

By Eric Peace, Lake Carriers' Association

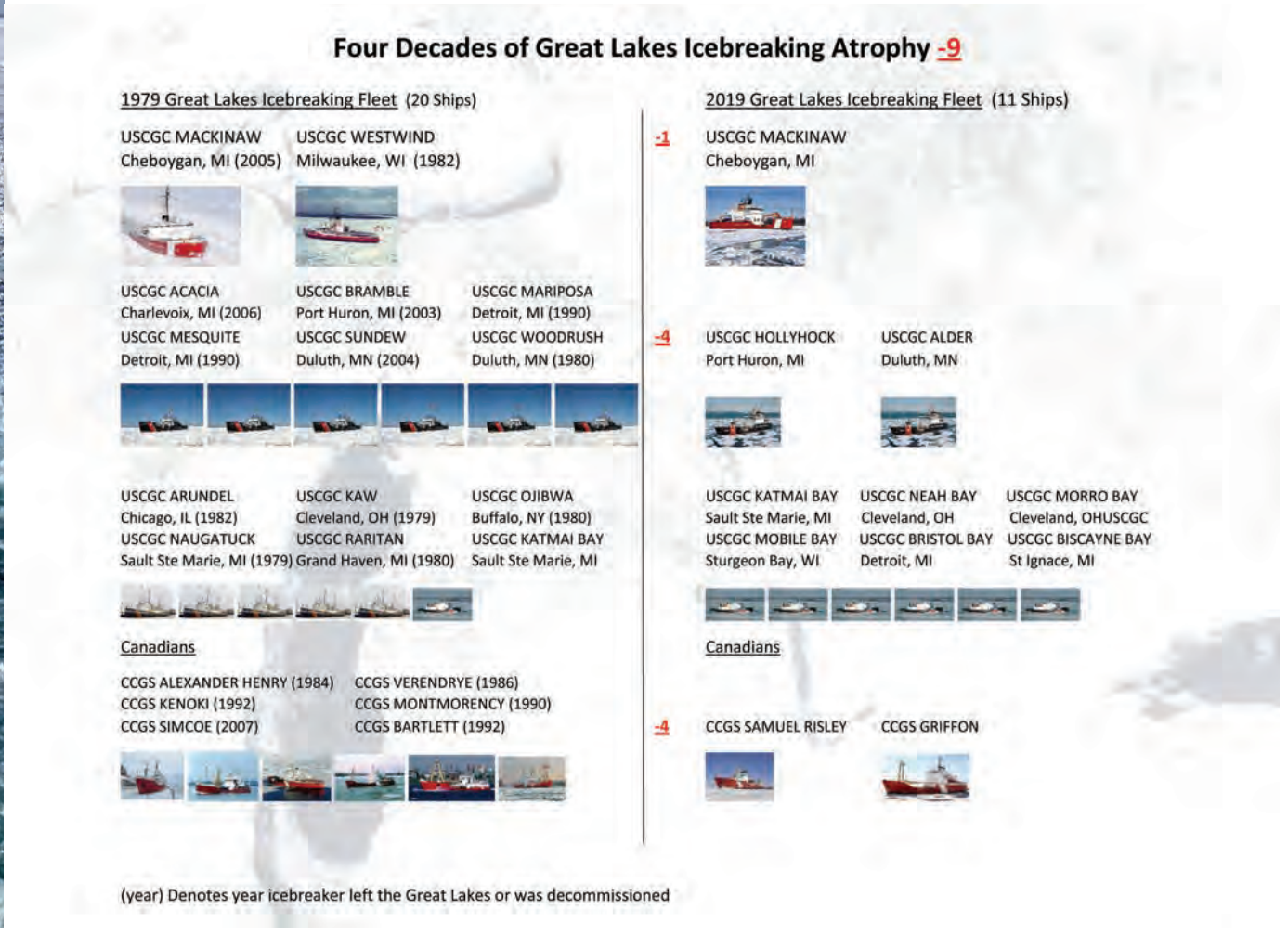
All images: Lake Carriers' Association

As the temperatures start their annual decline on the Great Lakes, an icy chill is in the air. Shipping companies across the lakes are rushing to get final loads of critical raw materials from the northern lakes to the manufacturing facilities on the lower lakes. The gales of November began blowing in October this year, tightening the constraint on the remaining days before the large navigational lock in Sault Ste. Marie, Mich. will close for the season and shipping virtually halts.

While high winds and seas can only be avoided, ice can be effectively managed by the U.S. Coast Guard (USCG) and Canadian Coast Guard (CCG) to move maritime traffic efficiently. The problem remains that neither the USCG nor CCG have an adequate icebreaking fleet to cover the vast expanse of the binational Great Lakes Navigation System.

The St. Lawrence Seaway continues to push their opening dates earlier and closure dates later, which adds stress to an already inadequately resourced icebreaking mission. With only 11 (two CCG and nine USCG) icebreakers, it is impossible to effectively cover all the areas requiring icebreaking which extend over 2,300 miles from Duluth, Minn. to the Atlantic Ocean and the 94,000 square miles just in the lakes and connecting waterways themselves.

During this past year's ice season, the U.S.-flagged Great Lakes shipping industry lost the equivalent of a month of work due to delays in ice covered waters. Some 1.645 million tons of cargo carrying capacity was delayed for 680



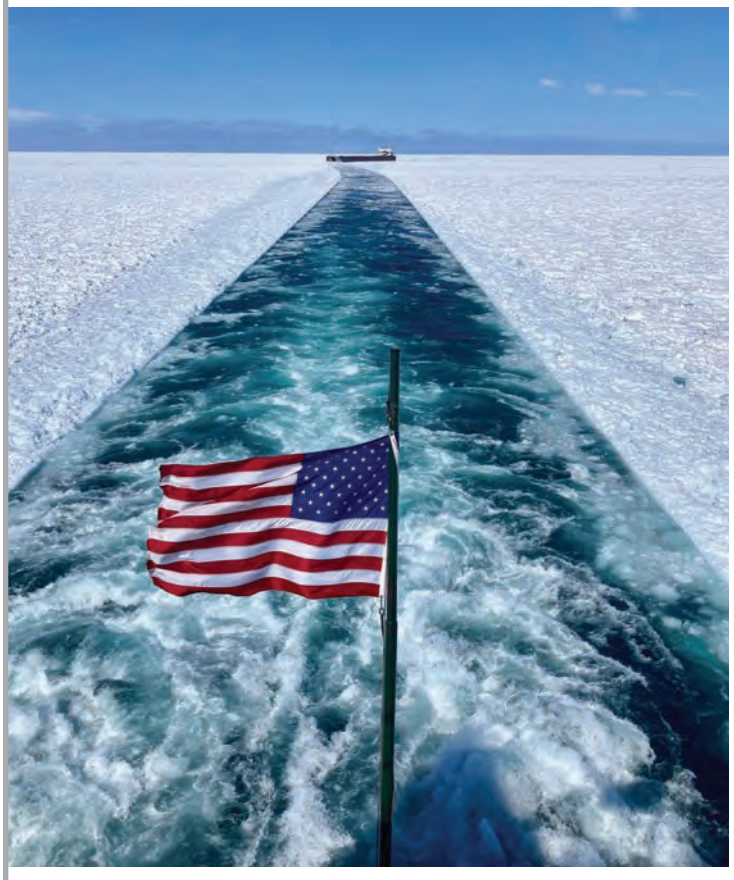
Column
Great Lakes

hours, or 28 days, due to ice conditions on Lake Superior, Lake Huron, Lake Michigan and in Green Bay and a lack of icebreakers to meet the needs of commerce.

Over the course of the past eight years, the economic impacts due to inadequate icebreaking on the Great Lakes have been staggering. Over 10,000 jobs lost and more than $2 billion in economic activity frozen as cargo of mainly iron ore and limestone sat idle in port or stuck in various waterways across the region.

"It amazes me that a cargo container stuck in Chesapeake Bay or in the Suez Canal gets worldwide attention and that happens on the Great Lakes every year. The loss of one day of shipping is tremendous, but a month is devasting. Imagine if highways in the northern states didn't have enough snowplows to keep traffic moving during frequent winter storms and sat on the road for a month…it is unacceptable," stated Jim Weakley, President of the Great Lakes Maritime Task Force.

The problem is only getting worse with the USCG and CCG fleet aging out and suffering casualties at an alarming rate. Over 60% of the government icebreakers stationed on the Great Lakes are over 40 years old. During this past year's average winter, the USCG reported a loss of 116 days of icebreaking operations due to engine failures and other mechanical issues. During the harsher winters of 2018 and 2019, the number climbed to 246 days lost and 182 days lost, respectively. No bench support exists especially when ice conditions exceed the smaller icebreakers capability. With only one heavy icebreaker on the Great Lakes, the USCG is woefully under prepared to maintain a resilient and dependable marine transportation system during the winter.



Getting to this level of paralysis has been facilitated by incomplete icebreaking mission performance measures. The USCG only reports their ability to keep four small connecting waterways on the Great Lakes open to navigation during the winter. The connecting waterways account for only a small portion of vessels transit to and from the ports of the Great Lakes. A perfect example occurred last year in eastern Lake Superior when multiple commercial vessels were stranded for over three days. The days lost were not reported to Congress because the area where the vessels were stuck was not considered measurable by the current USCG performance goals. Imagine being on an interstate stuck in a snowbank and being told by the highway department that we only measure our ability to keep the onramps open, your inability to move doesn't count.

While progress fixing the icebreaking issue has been slow, it is moving forward thanks to key Great Lakes Senators and Congressional Representatives. Over the past year, both the current Commandant of the U.S. Coast Guard and the former Commandant testified before the Senate Commerce Committee acknowledging the need for another heavy Great Lakes icebreaker. In addition, the Great Lakes Winter Commerce Act is included in the House and Senate versions of the Coast Guard Authorization Bill, which authorizes full funding for the new icebreaker, mandates transparent and accurate performance measures, and commissions a study by the Government Accountability Office to examine the impacts and needs for additional U.S. Coast Guard icebreakers on the Great Lakes. There is hope these actions will keep the pilot light of the North American economy lit with a resilient and reliable Great Lakes Navigation System.

Column

Finance

Alternative Fuels, Newbuilds and Retrofits are Key to Marine Industry Growth

By Timothy Stickney, Key Equipment Finance

The global marine vessel market is projected to grow from $170.75 billion in 2021 to $188.57 billion in 2028 at a CAGR of 1.43%, according to research from Fortune Business Insights.

From transportation vessels to workboats to marine construction ships, companies want to grow their business, stay current with new technologies, gain a competitive edge and be good stewards of our environment.

Current marine market trends include adoption of alternative fuels, acquiring new construction vessels, retrofitting existing fleet, and determining ideal solutions for procuring these vessels. A general theme for 2023 is "research your options and plan ahead."

Alternative fuel vessels

The International Maritime Organization's (IMO) initial greenhouse gas (GHG) strategy strives to reduce the total GHG emissions by at least 50% by 2050 compared

to 2008, and to reduce the carbon intensity of international shipping by at least 40% by 2030 relative to 2008.

Alternative fuel is the path to achieving these goals. Pasha, Crowley Maritime Corporation and Maersk are three marine industry leaders adding alternative fuel vessels to their fleet.

Pasha Hawaii recently added a 774-foot Liquefied Natural Gas (LNG) fueled containership – the first LNG containership to fuel on the U.S. West Coast, and the first to serve Hawaii. LNG-fueled containerships are significantly cleaner and better for the environment than traditional cargo ships. Pasha is adding a second LNG-fueled containership, currently under construction, which will achieve energy efficiencies through a state-of-the-art engine, an optimized hull form and an underwater propulsion system with a high-efficiency rudder and propeller.

Crowley Maritime Corporation is currently having a 416-foot LNG-powered bunker barge constructed in Wisconsin, which will be on a long-term time charter with Royal Dutch Shell. When finished, it is expected to become the largest Jones Act Compliant vessel of its kind. It will also allow for delivery of LNG to various LNG containment systems as more of these vessels come into service. The vessel is expected to serve LNG fueled ships on and around East Coast Ports.

Compared to ships running on traditional fuels, LNG-powered cargo ships achieve a 99.9% reduction in diesel particulate matter and sulfur oxide emissions, 90% less nitrogen oxides and a 25% reduction in carbon dioxide.

Maersk recently ordered six additional methanol-fueled, 17,000 TEU container ships as part of its decarbonization strategy. According to the company website, Maersk set a net-zero emissions target for 2040. The company also announced it will only order vessels that can be operated on green fuels.

Due to the cost of new construction and supply chain issues, many companies choose to retrofit existing vessels with alternative-fueling capabilities. Retrofitting is not a quick process either, and companies need to be aware of the timeline and plan ahead.

New construction options

As they focus on meeting GHG goals while also growing their business and remaining competitive, some marine industry companies decide to order newly constructed vessels. Prior to entering into purchase agreements, companies need to be aware of the current shipbuilding landscape.

We're seeing high pricing, and longer than "typical" build times, due to the same factors our economy has faced since the beginning of the pandemic. For example, main engine and crankshaft suppliers are unable to meet demands because of supply chain and labor challenges still plaguing our marketplace.

Companies who consider financing their newbuild vessels may face challenges in securing loans for this type of purchase. Since new-build construction comes with increased risk (e.g., lengthy timeline to build, seaworthiness of the finished product, inflationary risks causing build costs to go over budget, etc.), some lenders won't finance new builds.

Again, companies should plan in advance, be aware of their options and understand the challenges they're likely to face along the way.

Financing considerations

Modern marine technology is a large investment, so many companies choose to finance – allowing them to reap the benefits of state-of-the-art vessels with minimal impact to capital budgets. When financing the acquisition of new vessels, marine companies should consider return on investment (ROI), the financing structure and the lending team's capabilities.

Here are financing considerations – in both type and structure – to contemplate:

- Current asset values are higher than they were 12-18 months ago, due to both inflationary and supply issues as new builds have taken longer to complete and enter the marketplace. Many lenders will be particularly focused on advance rates on vessel financings, to ensure they aren't over-advancing on vessels should values decrease in the next 12-24 months.
- Most lenders on large financings, particularly on either multi-vessel or single vessel syndicated facilities prefer a loan structure with an advance rate lent against the Orderly Liquidation Value(s)

("OLV") up to 85% of OLV. Loan structures allow the vessel owner/operators to capture the often-healthy depreciation benefits of owning large marine vessels, helping them offset taxable income.

- Longer terms with mission-appropriate amortization: All project costs can be bundled into one plan, including sales tax, labor and freight.
- Flexible payment options can be designed to complement seasonal cash flow requirements.
- Lenders who structure true leases of vessels can offer owner/operators fixed price early buyout options for future purchase cost certainty.

Working with lenders who are very active in the marine space is critical. Owner/operators want to select finance partners with care, as many institutions have come into the marine space during the past 24 months due to various economic factors. Active lenders in the syndicated loan market have industry relationships, and are attune to pricing, terms and structures that can "clear the market" successfully.

For instance, some lenders are unwilling to work around long wait times and risk associated with new construction, and/or wary of oil and gas deal exposure. Plan ahead, so you are not rushed to find a lender willing to work with you during that timeframe and under those risks. Know the type of vessels the lender will, or will not.

Maritime companies are often faced with finding balance between making capital investments in the business and maintaining budgets, and there are multiple options when it comes to vessel financing. Choosing a lending provider who takes the time to understand the specific needs of the business and is experienced in financing marine investments is an important part of the equation.

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Column

Offshore Wind

Fortunes Return to the Sea as the Wind Blows Offshore

By Bob Kunkel, Alternative Marine Technologies

The results of fortunes and failures are often described as a "perfect storm". The COVID pandemic, domestic inflation, labor issues and current geopolitical events have brought that description to a peak. A promise of a "new normal" emerged post pandemic, with a vision of alternative energy, alternative fuels and alternative supply chain logistics to help toward solving some of the problems, heralding a world of change with reduced emissions, government support and the end of fossil fuels as we know them in energy and marine operations.

With those promises came big movements in the U.S. offshore wind industry, which aims to tap into an estimated gross resource potential of 10,800 gigawatts (GW) of wind capacity along the U.S. East Coast and Great Lakes (U.S. Department of Energy, 2016), the actual technical

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resource being 2,058 GW of power. U.S. maritime interests jumped in with both feet, and the Zoom meetings held between European offshore wind operators and domestic builders and operators burned up the Internet. We at Alternative Marine Technologies (Amtech) Zoomed with many of them amid a rush to contract new construction. Many of vessel designs had never been built in U.S yards, and some companies did not understand U.S shipbuilding and operation.

The speed of the response is not surprising. Europe boasts more than 6,000 operating wind turbines, and the United States only seven. With our involvement, Amtech watched as delivery for offshore support vessels were scheduled to arrive long before major machinery could be delivered to the shipyard or any wind farm towers would actually be erected—a result of supply chain and labor issues experienced during the pandemic period. These challenges, of course, follow previous wind farm delays, politics, cost overruns and issues experienced with Cape Wind, Deepwater Wind and other failed attempts to enter the emerging industry in the United States.

But the industry took a step forward in 2021 when the Biden Administration announced a target of 30 GW of offshore wind by 2030 (for reference, the U.S. currently has just 0.042 GW of installed offshore wind power). With that announcement came the canceling of the Keystone pipeline and a moratorium on drilling and oil leases in the U.S Gulf. The reports and the politics seemed to be working toward a final nail in the coffin for the U.S. Gulf oil patch, where,

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Offshore Wind

ironically, this country's companies, skilled labor and experience of installing, maintaining and servicing operations offshore exists. Further ignored were the hundreds of support vessels, jackups and platforms in layup, many capable of supporting offshore wind.

The Administration and Department of Energy reported four to six wind turbine installation vessels (WTIV) would need to be built in the United States. The first WTIV was contracted at Keppel AmFELS in Texas in 2020 with a delivery date of 2023 and a reported cost of $500-600 million. Maersk Supply Services has announced the construction of another WTIV for the U.S. market, but it will be built in Singapore by Sembcorp Marine, with the steel-cutting ceremony set for the fourth quarter of 2022. Patented by Maersk Supply Service and designed in-house, the wind turbine installation solution is said to work in conjunction with new feeder technology that is expected to be over 30% more efficient than conventional jack-up vessels while meeting Jones Act requirements. Just for emphasis, the WTIV will be built in Singapore, scheduled for delivery in 2025. We could continue with service operation vessels (SOV) and crew transfer vessels (CTV) under contract and resting in U.S shipyard reported backlogs. Understand the majority of these projects were developed from 2019 to 2021 during the pandemic period when many around the world walked to work in sweatpants to their living room. Many projects have not calculated the steel and aluminum price escalations or the delays due to lack of experienced labor and machinery delays. Those of us who were in the shipyards and building during the period have experienced the pain. Our concern, which is shared by others, is how these issues can affect the cost of our electricity if we continue moving forward at this pace.

As most seafarers understand, a storm has a mind of its own and is capable of changing track and intensity without notice. Geopolitical events in Europe recently changed the direction of oil and gas, and with that the cost and availability of fuel worldwide. The problem is well beyond U.S. gas prices or the lack of demand due to electric vehicles and looks to be an issue we will be dealing with for some time. The cyclical nature of shipping markets and how they react to world geopolitical issues will have a huge impact on how the U.S Gulf domestic oil industry and the current Administration reacts to the prices and imbalance. The situation is ironic. Europe with 6,000 turbines boasts the lead in clean energy but suffers economically due to dependency on a disrupted foreign oil source. Meanwhile, the United States, capable of domestic energy independence, will suffer economically due to massive efforts to build and produce alternative clean energy at an expedited pace. The truth at the 35,000-foot level is that the oil spigot cannot just be turned off and closed. The term and definition of hybrid could not be more important at these energy crossroads. Alternative energy and historical energy must work together to efficiently enter a post carbon world. After all, it is a perfect storm.

The past three years have taught us lessons that affect those of us working below the boardroom and elected office levels. We see more of those lessons coming as we try to solve the problems of placing all of the eggs in one basket in the decision process. At this point, the country does not understand "climate change". The discussions are fuel- and emissions-based in the maritime sector, yet we are dealing with drought and depleted water levels in the Mississippi River affecting the movement of our food sources and other vital resources. Turn the climate change page and another group is providing data to document an exponential sea level rise. Work inland and it is tornados and 100-year storms. The science continues to surprise us.

As the global energy crisis continues and the country decides to venture back into drilling to support domestic energy in the U.S Gulf and lower the price of gasoline, do we have the skilled labor and shipyard capacity to build and support both offshore wind in the Atlantic and the oil patch in the Gulf? Some 40,000 new jobs are projected for offshore wind while most of the country posts "Now Hiring" in the office window.

As we look to satisfy the environmental sector, reduce emissions and meet alternative energy goals, how long will it be before the proponents of climate change and the Administration understand that offshore wind energy is being supported and maintained by vessels burning marine diesel and gas oil? During the development of Cape Wind, the U.S. EPA worked to limit diesel emissions at the wind farms due to the projected vessel activity at the site. Are we smarter now to understand that the pace of energy transition needs to satisfy proponent and opponent? Can we design hybrid in transition and satisfy both groups? We think it can and it should be at the forefront of the discussion.

Ingram Barge Company

Q4 INLAND WATERWAYS REPORT:

Looking for Rainmakers

By Tom Ewing

As 2022 moves into its final months, low water levels and drought form the basis of the news impacting inland waterways operators and barge companies. In the first week of October, numerous barges were reported grounded in the Mississippi River, particularly south of Baton Rouge. This has consequences: barge rates jumped 218% in St. Louis, compared to 2021.

Low water was so severe that on October 7 Ingram Barge CEO John Roberts issued a force majeure notice (force majeure - unforeseeable circumstances that prevent someone from fulfilling a contract).

"Chronic low water conditions throughout the inland river system have had a negative effect on many who rely on the river, including Ingram Barge. We informed customers yesterday that given the difficult operating conditions posed by this low water, we were providing formal notice of a force majeure event—namely that circumstances out of our control were preventing normal river transport operations in certain areas. We want to emphasize that this only affects a limited part of our operating network—points below Baton Rouge, La. We anticipate that available barge supply in the affected area will improve in the coming days."

Forecasts were grim. Extended streamflow predictions from the National Weather Service (NWS) showed nothing but declines through the first week of November for the lower Mississippi from Cape Girardeau to New Orleans.

Jeff Graschel is a hydrologist with the NWS Lower Mississippi River Forecast Center. He said that based on the center's 28-day forecasts water levels this year could reach the extremely low levels experienced in 2012. Graschel said that hurricane Ian poured a lot of water into eastern portions of the Ohio River system. After the first week in October that water was reaching Cairo, Ill. Graschel said it then takes about 10 days for water from Cairo to reach New Orleans. However, even from a hurricane, this is just a drop in the proverbial bucket, not a replacement for normal rainfall events.

Graschel was asked about reservoirs and when and how they contribute to river levels. He explained that dams and reservoirs on tributaries are regulated locally, not for the system as a whole. He said the Corp of Engineers (COE) decides how much water can be released, an analysis that includes factors beyond navigation, such as electricity generation, agriculture, drinking water and recreation.

NWS provides data for Reservoir Water Supply Information. In relatively northern reservoirs, e.g., in Kentucky and Tennessee, water levels are high but, again, that status doesn't directly impact release rates and volumes and, eventually, the lower Mississippi. Water levels on other waterways, such as the Tennessee system, were at targeted channel depths. However, the scale of those operations does not match the Mississippi, which is particularly critical during harvest season.

Missouri River draft AOP

As this article goes to press water policy issues are in the planning stage within the Missouri River Water Management Division which is developing its 2022-2023 Annual Operating Plan (AOP) for the 2,341 miles long Missouri, which flows into the Mississippi at St. Louis (the Missouri is the longest river on the continent; about 100 miles longer than the Mississippi). The Missouri Division and the Columbia River Basin are unique in developing AOPs because they control dam operations. Other ACE units have oversight roles but not operational ones. The Missouri Division operates the six mainstem dams on the Missouri River.

The Corps' Draft AOP was released in September. Public meetings are scheduled October 24 through the 27th, written comments will be accepted until November 23. The plan presents modeled release rates depending on varying rainfall and runoff estimates. It presents how navigation releases will be balanced against other demands. And it lists the seasonal decision dates when these actions will be taken.

Coincidentally, in early October, ACE announced worsening drought conditions in the upper Missouri.

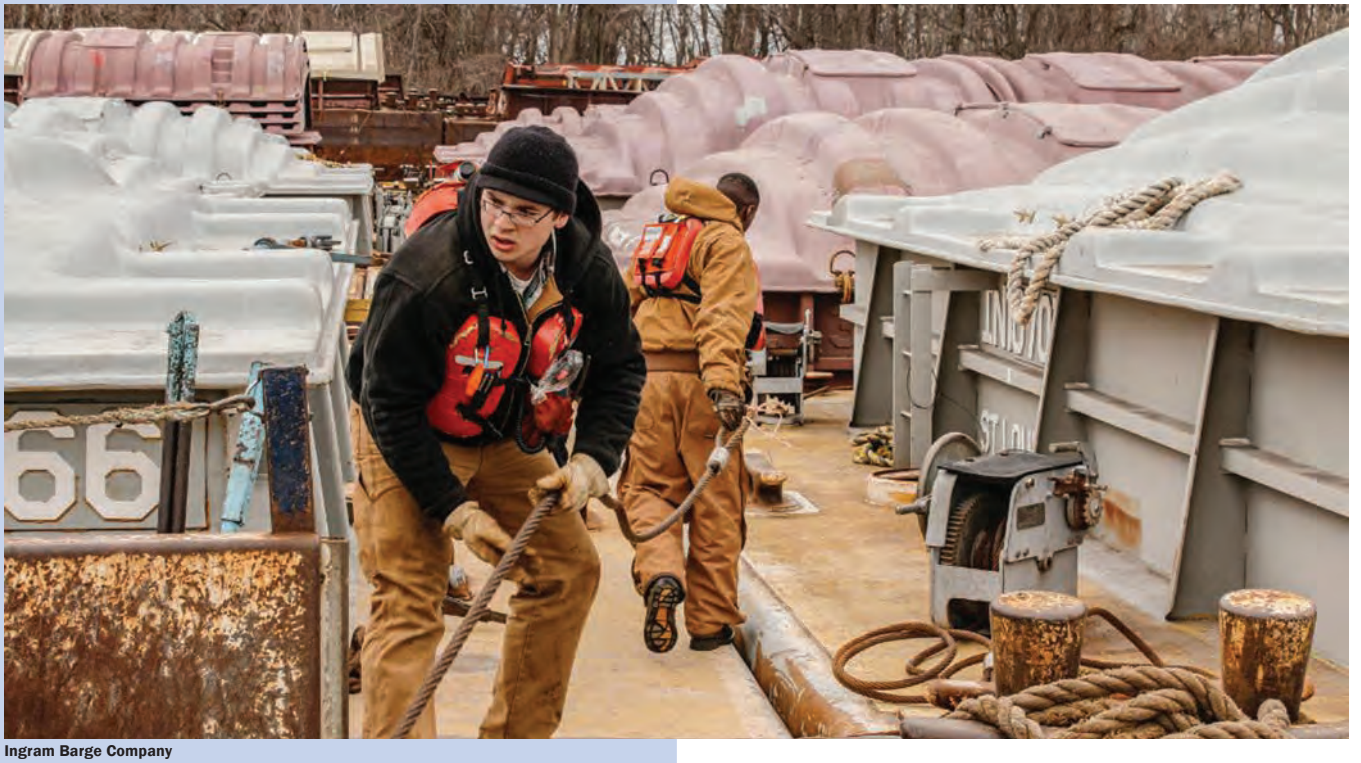
September runoff above Sioux City, Iowa was 0.6 million acre-feet (MAF), 47% of the long-term average. Soil conditions were very dry. The Drought Mitigation Center reported that over 90% of the Missouri basin was experiencing some form of abnormally dry conditions or drought, almost a 20% increase from the end of August.

"Runoff in the upper Missouri River Basin was below average during the month of September and is expected to remain low throughout the rest of 2022," said John Remus, chief of the U.S. Army Corps of Engineers' Missouri

Ingram Barge Company

John Roberts, CEO,
Ingram Barge Company

"We informed customers [October 6] that given the difficult operating conditions posed by this low water, we were providing formal notice of a force majeure event—namely that circumstances out of our control were preventing normal river transport operations in certain areas."



Ingram Barge Company

River Basin Water Management Division. The 2022 calendar year runoff forecast for the upper Basin, updated on Oct. 1, was 19.5 MAF, 76% of average and 0.7 MAF lower than the prior month's annual runoff forecast. Average annual runoff for the upper Basin is 25.7 MAF.

For navigation, USACE wrote that Gavins Point Dam releases will be set to provide navigation flow support at a level 500 cfs above minimum service at all four target locations (Sioux City, Omaha, Nebraska City and Kansas City). Season support will end on November 28 at the mouth of the Missouri River. USACE writes that "releases will be adjusted as necessary to meet all downstream navigation targets."

Release rates at other dams will drop. Consider:

- At Big Bend Dam last month's releases were 28,900 cfs. Forecast rate is 19,500 cfs.
- Oahe Dam drops from 29,100 cfs last month to a forecast of 20,300.
- Fort Peck drops from 7700 to 4000 cfs.

The Corps' notice includes this caution:

"The forecast reservoir releases and elevations discussed above are not definitive. Additional precipitation, lack of precipitation or other circumstances could cause adjustments to the reservoir release rates."

Food: national impacts

Mike Steenhoek, Executive Director of the Soy Transportation Coalition based in Ankeny, Iowa, keeps a close eye on the inland waterways, particularly the Mississippi. In early October, Steenhoek commented that "conditions continue to deteriorate due to historically low water." He added, "The strength of U.S. soybean exports and the condition of the inland waterway system are closely interconnected."

Channel depth and width limits are impacting agricultural economics at an inopportune time, Steenhoek said. Barge transportation is essential: 80% of ag exports occur between September and February; 54% of soybean exports depend on barges.

Steenhoek said that, because of low water, barge and towing companies have set a 25-barge maximum tow south of St. Louis, a limit that contrasts with 30-40 barges under normal conditions. Because total capacity has decreased there is demand for more barges, plus crews and towboats, to transport the 2022 harvest. Rates have skyrocketed.

Steenhoek cited U.S. DOA statistics: On 10/4 the cost to transport a ton of soybeans from St. Louis was $90.45. In 2021, the same shipment cost $28.45, a 218% increase.

This slams farmers because the price a farmer receives at point of sale is influenced by how efficiently, or not, agricultural products clear the market. Supply chain problems cause transactions to confront a "negative basis," i.e., when a storage facility can't move product out it pays less for product coming in - from the farmers. As examples, Steenhoek cited the following:

- In Aurora, Ind., (near Cincinnati): negative soybean basis was $1.29. Normal negative is $0.35-$0.40. Negative corn basis was $1.02; normal is $0.25-$0.35.
- In Davenport, Iowa, negative soybean basis was $0.90; normal is $0.30 to $0.45. For corn, negative was $0.30; normal negative is $0.20.
- Near Memphis: negative soybean basis was $1.15; same as last year. For corn negative was $0.75; normal at this time of year is even to negative $0.20.

Operators' interests

Lynn M. Muench is Senior Vice President – Regional Advocacy for the American Waterways Operators (AWO); she is based in St. Louis. Muench was asked about the Missouri River AOP, whether AWO participates in that planning process. "Absolutely," she said. "We've been engaged in that process for the last 23 years." She said AOP development was critical, not just for the Missouri River but also for the middle Mississippi. "We look to maximize flows," she explained.

This advocacy works within a larger coalition, which Muench chairs, including agricultural groups and farming interests. One goal is encouraging the USACE to complete its plan by the end of December. That timing allows river operators to look ahead at likely conditions and plan accordingly, both for operations and rates. This partnership has supported increased funding to maintain Missouri River navigation.

Muench added that new federal waterways infrastructure spending "is really going to be huge," i.e., hugely beneficial. She specifically cited benefits from redundant locks—one lock failure won't shut down the river. Transport efficiencies will go way up, as will the green profile for waterways shipping. "We won't be stopping and waiting, taking tows apart and putting them back together," she pointed out. "We're going to keep moving."

Mississippi River Commission

"We need rain"

In August, the Mississippi River Commission (MRC) conducted its annual low-water inspection trip on the River, holding four public meetings in Tennessee, Mississippi and Louisiana. Charles Camillo is MRC's Executive Director. He said these meetings have been held since 1882. The seven-member Commission was established in 1879. Its mission: "to develop plans to improve the condition of the Mississippi River, foster navigation, promote commerce and prevent destructive floods."

Camillo said about 200 people attended the low-water meetings this year, a number rebounding after COVID. Most people attending represent groups linked to the river's operations, such as ports and related associations and businesses. About 70 people provided testimony which is reviewed by the Commission and then presented to the Army Corps with advisories for follow up.

Regarding the drought and low water, Camillo commented that he would rather fight a flood than a drought since options are so limited. No one can control the weather, and he added that ports and waterway officials will continue to do what they can, e.g., dredging, scouring and maintaining dikes.

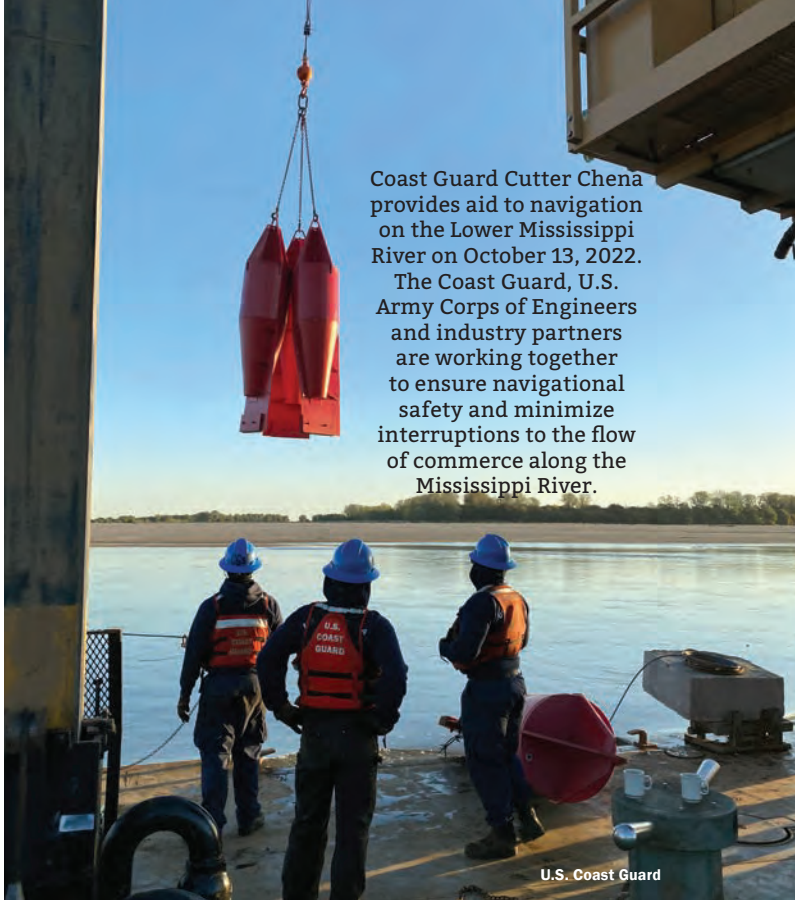
Camillo said that many comments this year were "a thank you" to federal officials for supporting infrastructure money. Local officials noted that money for dredging allowed ports to stay open, despite low water challenges.

Lisa Parker is Director of Public Affairs, Mississippi Valley Division, U.S. Army Corps of Engineers. Parker said the Corps is confident it can maintain 9-foot navigation throughout the system. All Corps' dredges are engaged and ready to respond, she said.

She noted that flood control projects on tributaries are proceeding with regular winter pool drawdowns. "This flow augmentation," she said, "off of the Ohio and Missouri Rivers, along with other smaller tributaries, is helping the low flow situation on the lower Mississippi River at least through October."

Still, the situation could worsen, and the Corps is considering delaying some winter drawdowns for release if conditions become critical.

"The last time we experienced conditions like this was in 2012," Parker said. "The bottom line is, we need rain."



Coast Guard Cutter Chena provides aid to navigation on the Lower Mississippi River on October 13, 2022. The Coast Guard, U.S. Army Corps of Engineers and industry partners are working together to ensure navigational safety and minimize interruptions to the flow of commerce along the Mississippi River.

U.S. Coast Guard

USACE

Infrastructure Improvements Set to Boost Efficiency at Lock and Dam 25

By Eric Haun

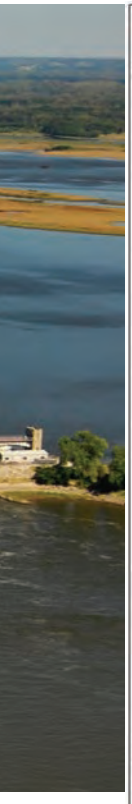
The list of projects on the United States' inland waterways infrastructure to-do list is seemingly never-ending as the U.S. Army Corps of Engineers (USACE) continuously works to maintain, repair and, when possible, upgrade aging locks and dams throughout America's vast network of navigable rivers.

But there's been progress toward modernizing the system, especially in recent years amid steadily rising annual appropriations that fund the Corps' Civil Works mission, and Construction and Operations & Maintenance (O&M) accounts funded at historic levels.

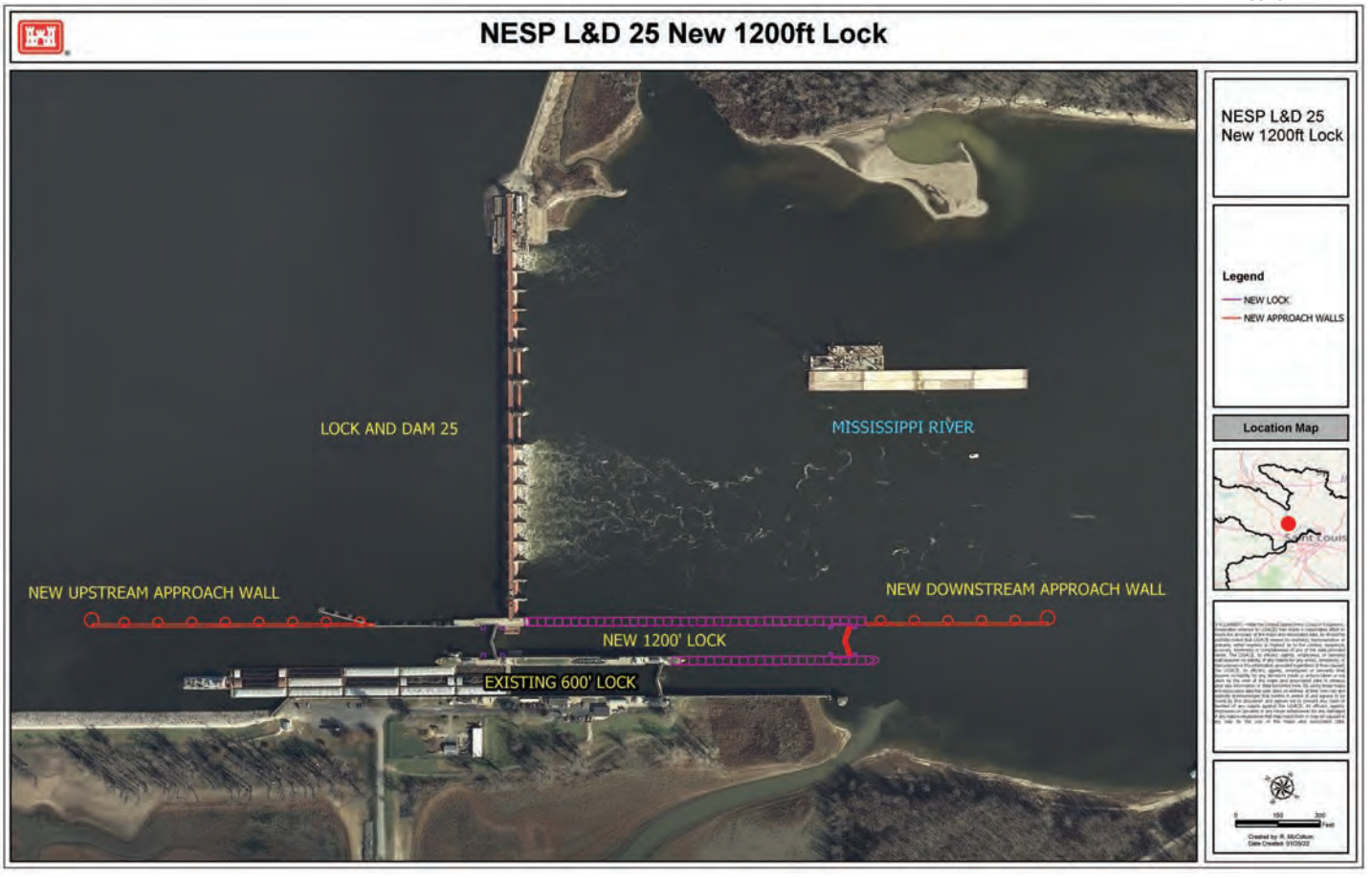
A major boost came in 2021 via the passage of the Infrastructure Investment and Jobs Act (IIJA), which according to Tracy Zea, president and CEO of the Waterways Council Inc., "provided a once-in-a-generation opportunity to see real progress to build locks and dams and to upgrade the rest of America's long-neglected infrastructure."

Among other things, IIJA included a $829.1 million toward the Corps' $7.9 billion, 50-year Navigation and Ecosystem Sustainability Program (NESP), which consists of more than 1,000 projects to improve navigation delays and restore ecosystems along the Upper Mississippi River. Specifically, Congress allocated $829.1 million for two NESP projects, including $732 million for construction of a new 1,200-foot lock chamber at Lock and Dam 25 near Winfield, Mo., and $97.1 million for fish passage improvement projects at Lock and Dam 22 near Savertooth, Mo.

Conceptualized in the late 1990s, it wasn't until the Water Resources Development Act (WRDA) of 2007 that NESP was authorized as a first-of-its-kind Corps program to address both ecosystem and navigational projects together under the same umbrella. About a decade later, Congress allocated some funding for the pro-



USACE



gram mainly to start initial designs for its projects, but years went by without the funding for physical construction to move forward. NESP's inclusion in the IIJA finally cleared way for projects to move beyond the design stage, allowing construction contracts to be awarded and project builds to begin.

More good news followed in March when an additional $45.1 million came through Congressionally directed spending to advance NESP projects, and the program received an additional $12.2 million through the Corps' FY 2022 work plan to continue to advance additional projects.

"It's an awesome year for the Upper Mississippi River basin," said Andrew Goodall, NESP program manager. "We've waited many years to have the opportunity on the Upper Miss, but now is our time. We're absolutely going to take that time that we're given and the money that we're given and we're going to deliver."

New chamber at Lock and Dam 25

For the barging industry, improvements at Lock and Dam 25 will go a long way toward making river transport more efficient, ultimately increasing the competitiveness of American farm products in international markets. The project, which has been long-awaited and is now funded to completion, will see a new 1,200-foot lock chamber built adjacent to the site's existing 600-foot chamber. This enables larger tows to pass through without having to be broken apart, saving precious time while also increasing safety for deckhands. According to Marty Hettel, vice president of government affairs at American Commercial Barge Line (ACBL), an expanded 1,200-foot chamber will reduce transit times by about 2.5 hours.

Lock and Dam 25 is one of seven 1,200-foot lock chamber projects at existing 600-foot lock and dam sites authorized by WRDA 2007. Hettel serves on the Inland

Safety and efficiency go hand-in-hand, especially when we're building these new lock projects. The more efficient we become with these new 1,200-foot lock chambers, the safer it's going to be for our professional mariners.

– Marty Hettel, vice president of government affairs, American Commercial Barge Line

Eric Haun

Waterways User Board, which makes recommendations to the Army and to Congress on investment priorities. He said the project at 25 was a top priority. "Safety and efficiency go hand-in-hand, especially when we're building these new lock projects," he said. "The more efficient we become with these new 1,200-foot lock chambers, the safer it's going to be for our professional mariners."

The complex project includes design and construction of a new 1,200-foot pile-founded lock chamber to be constructed on the downstream side of the existing auxiliary miter gate bay, as well as a new upstream, ported approach wall and a downstream approach wall designed to block flow through the wall. The existing 600-foot lock will remain in operation during the design and construction of the new lock and will become an auxiliary lock chamber after completion. This adds redundancy by allowing navigation to continue when one of the locks goes down or while maintenance or repairs are underway. The project also includes associated channel work, relocations and site-specific environmental mitigation.

Jose Lopez, project manager for the NESP lock and dam 25 project, said the Corps' will take a two-phase approach to help minimize risk. He said the Corps hopes to use learnings and contractor feedback from phase one to help inform engineering and execution decisions for phase two.

Lopez said the Corps aims to award the phase one contract in 2022, clearing way for construction to commence as early as late winter or early spring 2023. The timeline for phase two remains uncertain.

"Our goal is to design and construct this as efficiently as possible. We are hyper-focused on the fact that we received this appropriation from Congress to go out and design and build the project," Lopez said. "We've got our foot down on the gas doing all of the work that we need to do to get that constructed."

Another project team objective, Lopez said, is to complete the upgrades cost-effectively. "Everybody's aware of the current market conditions and how things are going. The labor market is super tight. Inflation is up. It's kind of a topsy-turvy world. We're very cognizant of cost."

The other objects are to maintain quality and minimize impact and maximize predictability during construction. "One of the biggest challenges that this specific project has is the location of the new 1,200-foot chamber," Lopez said. "We are building the new chamber directly adjacent to an existing 600-foot chamber that's over 80 years old and is going to continue to move traffic during construction. That has a lot of challenges associated with it. We're very sensitive to that."

It will be a team effort to ensure the project is completed in a way that makes sense for all parties involved, Lopez said. "The Corps, navigation industry stakeholders and the construction contractor are all going to have to be at the same table to talk about how that sequencing is going to work to ensure we build this project effectively and efficiently, but at the same time that we don't impact the barge industry too bad. There's going to be some shared risk in there that we have to work through."

MARK W. BARKER

Owner: The Interlake Steamship Company
Builder: Fincantieri Bay Shipbuilding
Designer: Bay Engineering, Interlake Maritime Services

The Interlake Steamship Company

The Interlake Steamship Company's newest vessel, the Mark W. Barker, ranks high among most noteworthy vessels built in North America in recent years. The first U.S.-flagged freighter built on the Great Lakes in nearly four decades, it is a modern, versatile addition to the otherwise aging fleet currently serving the region's vital Jones Act trade.

"This is truly a historic celebration for our company and for the United States maritime industry as we proudly christen the newest vessel to join the U.S. flag fleet on the Great Lakes and our first new build in 41 years," said Mark W. Barker, president of The Interlake Steamship Company and the vessel's namesake, during a September christening ceremony held for the vessel in Cleveland. "While this ship may bear my name, it is a testament to the innovation, skill and grit of our employees who have powered our industry and propelled our company for more than 130 years."

Believed to be the first newbuild for U.S. Great Lakes service built on the Great Lakes since 1983, the new River-Class, self-unloading bulk carrier is as "Great Lakes" as it gets—conceived, designed and constructed locally—using local materials. Built at Fincantieri Bay Shipbuilding in Sturgeon Bay, Wis., the 639-foot vessel was made from iron ore mined in Minnesota by Cleveland-Cliffs, and carried on U.S.-built, U.S.-crewed, and U.S.-owned Lakers to Cleveland-Cliffs' Burns Harbor mill in Indiana. There the pellets were forged into steel plates and shipped to the Wisconsin shipyard.

"This American-made vessel is not only a veritable Great Lakes success story, it is a Cleveland ship, through and through," said The Interlake Steamship Company's chairman, James R. Barker. "Designed to navigate the winding curves of the Cuyahoga River, built with Cleveland-Cliffs steel and coated with Sherwin-Williams paint, the M/V Mark W. Barker was most significantly built as part of a long-term partnership to move Lake Erie-mined salt for Cargill Inc."

The Jones Act qualified vessel, measuring 639 feet in length, 78 feet in beam, 45 feet in molded depth and 28,000 dead weight tons, will transport raw materials traditionally carried by lakers such as salt, iron ore and stone to support manufacturing throughout the Great Lakes region. And it has also been thoughtfully designed in preparation for the new cargoes of the future.

"If you toured the ship, you may have noticed in many respects that it is very different than a traditional Great lakes self-unloader. This is intentional as we made unique changes to the design of the ship so that it could be more versatile and more capable in meeting our customers' needs," Mark Barker said. "For example, the ship has large load-bearing MacGregor hatches that will allow project cargo to be loaded and carried on top of them."

While five large hydraulically controlled stackable MacGregor hatches will allow the ship to transport specialty cargoes such as steel coils and windmill towers and blades, the vessel's large hatches and cargo holds add even more capability. This ship will carry an average of 25,000 tons per trip, which is equal to the carrying capacity of 250 train cars, and 1,000 trucks. "The hatch openings are much larger than you'd see in a typical self-unloader. The hatches create a 46-by 80-foot opening into rectangular cargo holds below. This rectangular cargo hold will allow the vessel to carry close to 40% more cargo than a current vessel in the same trade. This box-shaped cargo hold will also allow to be able to utilize the ship to carry cargoes that may have not traditionally moved

Greg Trauthwein

*The Interlake Steamship Company president **Mark W. Barker** with the crew of his namesake vessel.*

Great Vessels of 2022

on the Great Lakes," Mark Barker said. "It is important that we have the ability to move new types of cargo to meet the needs of the changing supply chain of the future."

For added flexibility during cargo operations in congested ports, the unloading boom is located on the forward end of the ship, which many Great Lakes customers find more advantageous to allow placement in preferred areas for access at their docks, The Interlake Steamship Company said.

"This new vessel not only brings with it additional cargo carrying capacity and capabilities, it is the most versatile in our fleet and strategically sized to navigate into nearly any port on the Great Lakes," said Brendan P. O'Connor, Vice President of Marketing and Marine Traffic. "The M/V Mark W. Barker will give us unmatched ability for cargo operations and to carry unique project cargoes because of her square-shaped cargo holds, her larger hatch openings, reinforced cargo hatches which can support deck cargo, and a forward mounted unloading boom. She truly was designed to be a vessel for the future."

Among other notable features, the Mark W. Barker is the first ship on the Great Lakes with engines that meet EPA Tier 4 standards; its two 4,000-horsepower (hp) EMD engines use selective catalytic reduction (SCR) system to meet the strict emissions rules. The main engines turn a single four-blade, controllable-pitch Kongsberg Kamewa propeller through a Lufkin twin-input, single-output gear-

Key Milestones for the MV Mark W. Barker

2015 – Cargill came to The Interlake Steamship Company with the idea for the vessel

2017 – The Interlake Steamship company began creating the vessel design in house

May 2019 – The Interlake Steamship Company signed a construction contract with Fincantieri Bay Shipbuilding after working with the shipyard and Bay Engineering to finalize the design

August 2019 – First steel cut at Fincantieri Bay Shipbuilding

June 2020 – Keel laying ceremony held at Fincantieri Bay Shipbuilding where it was revealed the vessel would be named after The Interlake Steamship Company's second-generation leader, Mark W. Barker

October 2021 – Mark W. Barker was floated out at Finantieri Bay Shipbuilding

July 2022 – Fincantieri Bay Shipbuilding delivered the Mark. W Barker to The Interlake Steamship Company, and the vessel promptly entered operations

September 2022 – A christening ceremony was held in Cleveland

The Interlake Steamship Company

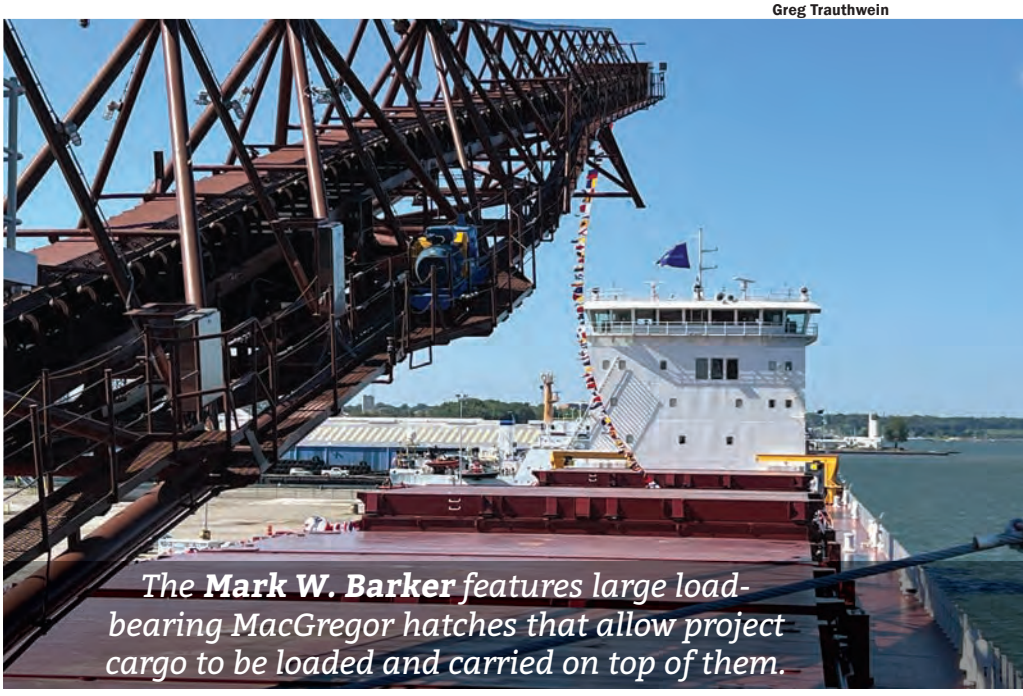
box. The is also equipped with 1,000 hp Kongsberg bow and stern thrusters. The ship is reported to have a top speed in excess of 15 knots, though it can cruise somewhere around 13.5. For added efficiency, the ship's hull has been optimized and all systems have been designed to ensure low energy consumption, while a Kongsberg high-lift rudder optimizes the wake through the propeller.

For its electrical power requirements, the vessel is provided with one Caterpillar 940-kilowatt (kW) ship service diesel generator, two 2,500 kW shaft generators and one Caterpillar 274 kW emergency generator.

Certainly, building a vessel that's the first of its kind in several generations brings a unique set of challenges, but doing so during a pandemic creates a whole new level of difficult. "Construction was not without its challenges," Mark Barker said. "This ship was built in the midst of a global pandemic during which the country was experiencing government-mandated shutdowns, supply chain disruptions, labor shortages and challenges not previously seen in our lifetimes. However, despite all those challenges, the project moved forward, and the work got done. We took delivery of this beautiful vessel this past July."

The vessel promptly entered service after delivery, taking a brief break for its official christening in September. The ceremony was a who's who event bringing together some of the biggest names in the U.S. maritime industry—a testament to a venerable Great Lakes shipping company ands groundbreaking new vessel.

Greg Trauthwein



*The **Mark W. Barker** features large load-bearing MacGregor hatches that allow project cargo to be loaded and carried on top of them.*

Great Vessels of 2022

Seabulk

SPARTAN

Owner: Seabulk
Builder: Master Boat Builders
Designer: Robert Allan, Ltd.

This March, Fort Lauderdale, Fla.-based Seabulk put into service its first ever electric-hybrid tugboat, Spartan, built by Master Boat Builders in Coden, Ala.

Seabulk has already seen good results from Spartan as the tug continues working in Port Arthur, Texas. The electric-hybrid vessel serves as a stepping stone toward the ultimate goal of minimizing carbon emissions. Seabulk's parent company SEACOR is a member of the Global Maritime Forum's Getting to Zero Coalition, which aims to decarbonize the shipping sector through zero carbon technologies and sustainable alternative fuels. "One day we're going to get there; and this hybrid propulsion system on Spartan allows us to evaluate the technologies including electric motors as a foundation for the propulsion system," explained Russ Jones, Director of Technical Services at Seabulk.

"We evaluated the different power requirements for the vessel, to ensure safe and efficient solutions for our customers in the different ports that we operate in," Jones said. "For Spartan working in Port Arthur, Texas is subject to long transits to and from port facilities. We saw this operating profile as ideal to capitalize on hybrid technology for those long transits."

The Robert Allan Ltd.-designed RApport 3000 vessel is 98 feet long with a beam of 43 feet and draft of 18.5 feet. Spartan is built to meet U.S. Coast Guard regulations and is classed through the American Bureau of Shipping (ABS), with escort notation.

Notably, the tug features a fully integrated hybrid propulsion plant from Berg Propulsion, supplied by Thompson Caterpillar, a key partner throughout the build project, according to both the vessel's owner and its builder.

"They were huge partners of this, and we couldn't have done it without them," said Garrett Rice, president at Master Boat Builders. "It's one thing to have an electrical integrator or a dealer or partner come in and do the jobs. It's another thing to have somebody really go above and beyond and take ownership of the process, really work with us in the way that we work. We've been doing business with Thompson for 35 years, and they are in our yard almost every day. And so having that synergy and understand the way we do business is really nice, and they did a really good job of working with us."

The Spartan's hybrid propulsion system utilizes two ABB 560KW electric motors combined with the two Caterpillar 3512E EPA Tier 4 main engines to power the Berg MTA628 Azimuth thrusters. The electrical power for the AC motors comes from a pair of 565 KW C-18 and a 200 KW C-7.1 Caterpillar generators sets, providing and respectively. In addition to its VS3 variable frequency drives with motors, and its own hybrid control system, Berg's design, supply and integration includes the switchboard with full power management plus control of the Caterpillar main engines and gensets. Total installed horsepower is 6,881. Fuel filtration is provided by an Off-line C.C. JENSEN system.

"We went into this project not expecting to see a significant fuel reduction from the hybrid technology that's

Berg Propulsion

The high-powered tug Spartan features a fully integrated hybrid propulsion plant from Berg Propulsion.

Great Vessels of 2022

utilized on the Spartan. It takes a certain amount of horsepower to propel the vessel through the water at required transit speeds, and whether you do that with auxiliary generator engines or main engines, the fuel savings is really negligent," Jones said. "What really pushed us to make the decision to go with Hybrid is the opportunity to test bed the electrical propulsion systems and various battery solutions. We believe battery integrated hybrid tugs will deliver emissions benefits in the future."

There is also important operational savings on top of the environmental benefits associated with the vessel's hybrid system and EPA Tier 4 main engines. "In eco mode the vessel can transit to and from tug assist jobs without using the main engines. This saves service hours on main engines, roughly 1,500 hours annually. Over the course of vessel's service life, this equates to a large savings when considering maintenance requirements," Jones said.

While Spartan is not fitted with batteries as part of its hybrid propulsion system, dedicated space and provisions within the switchboard have been provided to allow for this in the future in case Seabulk ever decides to go that route.

Master Boat Builders' Rice said he sees hybrid tugs as the way of the future, at least for the short- to medium-term, and that the shipyard—which has been involved in both hybrid and full-electric tug builds, including Crowley's eWolf—has been positioning itself for a leading role as the industry evolves. "We want to be known as the best go-to tug builder in the U.S.," Rice said. "The future of tugs is hybrid battery powered tugs over the next five to 10 years. And I think we're in a good spot for that."

From an operational standpoint, some of the Spartan crew members were initially hesitant about the new hy-

Seabulk

brid technology on board, Jones said. "That was all set aside when they got a chance to operate the vessel and witness its great performance firsthand," he added. "The electric motors coupled to the drives really enhance performance and give instant control." The vessel is capable of speeds around 12.6 knots. In power mode, Spartan's main engines and electric motors/generators combine to provide a maximum bollard pull of 88.5 tons," Jones said. Towing equipment includes hydraulic powered JonRie double drum winches, providing redundancy for towing operation with a complete second tow line at the ready.

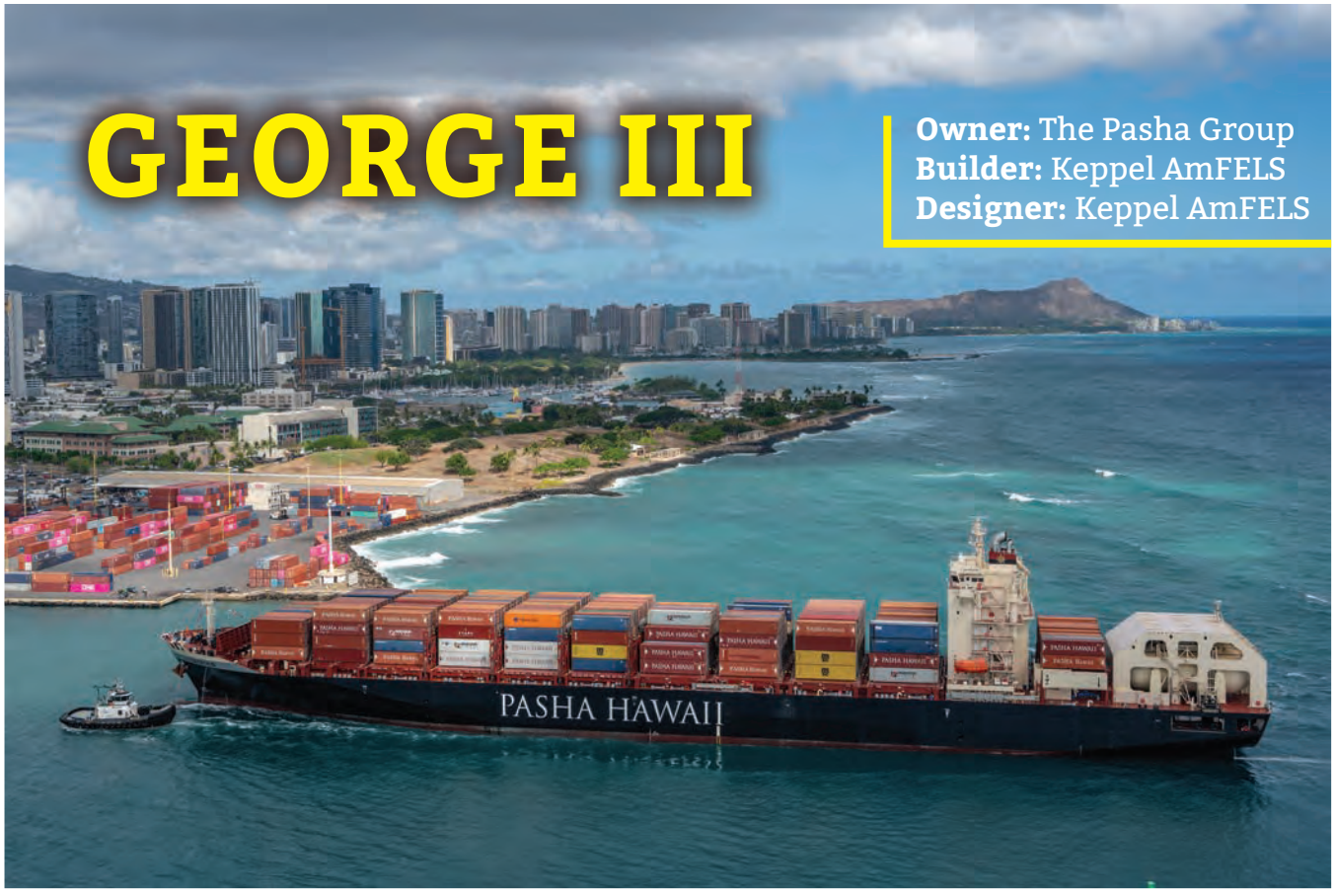
Jones cited among other key features enjoyed by crew the vessels' Alphatron/JRC supplied Alphabridge console arrangement, which provides an ergonomic control platform in the pilot house that integrates all the electronics, navigation and communication systems into the central control. "The operators on board value these features and comment on the reduced fatigue. This has been our standard for new buildings since 2017."

In addition, the pilot house has large windows and bi-level layout, providing the operator with excellent visibility to working decks and a work space for the crew's administrative tasks. Below deck are berths for eight, with four staterooms and four heads.

The vessel features all LED lighting throughout. And its main decks are coated with International Paint's Intershield lightweight epoxy non-skid product for improved safety in working areas. Spartan has on board a pair of Viking 10-person life rafts.

Great Vessels of 2022

The Pasha Group



Hawaii-based The Pasha Group this summer welcomed the newest addition to its containership fleet with the arrival of George III, the first liquefied natural gas (LNG) powered vessel to serve Hawaii.

The 774-foot, 2,525 TEU containership was built in Brownsville, Texas by Keppel AmFELS as the first of two new 'Ohana class vessels built to service the Hawaii-U.S. mainland trade for operator Pasha Hawaii, a wholly owned subsidiary of the family-owned The Pasha Group, one of the nation's leading Jones Act shipping and integrated logistics companies.

Prior to commencing its maiden voyage to homeport Honolulu this summer, George III became the first LNG vessel to fuel on the U.S. West Coast when it bunkered at the Port of Long Beach in California.

As the most technologically advanced and environmentally friendly vessel to serve Hawaii, the new Jones Act vessel surpasses the International Maritime Organization (IMO) 2030 emission standards for ocean vessels. LNG-powered ships achieve a 99.9% reduction in diesel particulate matter and sulfur oxide emissions, 90% less nitrogen oxides and a 25% reduction in carbon dioxide compared to ships running on traditional fuels. And while George II has been operating on LNG fuel from day one, the vessel's dual-fuel 30,000-kW MAN B&W 7S80 ME-GI slow speed, two stroke, direct drive engine is also able to burn VLSFO and/or ULSFO. The ship is capable of sailing speeds around 23 knots.

Auxiliary engines include three MAN B&W 6L35/44 dual-fueled generating sets. George III is equipped with two 1,200 cubic meter LNG C-type cylindrical tanks with episoidal head ends located on deck at the aft of the vessel. Its engine room is equipped with Kongsberg integrated control and monitoring system, and the vessel also

features a Cavotec Alternative Maritime Power (AMP) system for connecting to shore power in port. Further energy efficiencies are achieved by the ship's optimized hull form as well as its high-efficiency rudder and 28' MAN fixed-pitch five-bladed propeller. The vessel is also equipped with an Alfa Laval Pure Ballast 3 ballast water management system.

"We celebrate three generations of service to the people of Hawaii with the arrival of the MV George III to Long Beach," said George Pasha, IV, President and CEO, Pasha Hawaii. Named after Pasha, IV's late father, the vessel was designed to represent the innovative and entrepreneurial spirit of George Pasha, III. "Shortly after my father joined my grandfather in the family business, he quickly laid the foundation for growth and success," added Pasha, IV. "Through my father's leadership, what started out as a personal vehicle storage company, evolved into a world-class global logistics and transportation company. As we mark our 75th anniversary and welcome George III to Long Beach, we are proud to continue my family's legacy of innovation and environmental stewardship, while recognizing our employees as our extended 'ohana."

George III will soon be followed by Pasha's second 'Ohana class LNG containership, the Janet Marie, expected for delivery from Keppel AmFELS in the fourth quarter of 2022.

Great Vessels of 2022

WETA

DORADO

Owner: WETA
Builder: Mavrik Marine
Designer: One2Three Naval Architects

A new high-speed passenger vessel that entered service for the San Francisco Bay Area Water Emergency Transportation Authority (WETA) this year is the agency's fastest and most agile.

WETA is a regional public transit agency tasked with operating and expanding ferry service on the San Francisco Bay, and its new 130-foot-long aluminum catamaran Dorado is the first in a series of four newbuilds ordered from La Conner, Wash. shipyard Mavrik Marine. The U.S. Coast Guard-certified Subchapter K ferry was designed by Australia-based One2Three Naval Architects, and construction management services were provided by San Diego-based Aurora Marine Design.

"WETA is building a world class ferry system for the Bay Area and adding new vessels like MV Dorado helps us get there," said Jim Wunderman, chair of the WETA board of directors. "This American-made ferry enhances the capacity of our fleet and provides additional flexibility for our operations, helping ensure we run the system as efficiently as possible. It also happens to be a beautiful ferry."

Vessel construction was funded through the Federal Transit Administration and the State of California's Proposition 1B in collaboration with the California Office of Emergency Services. Construction on the second vessel in the Dorado class, Delphinus, is underway.

Dorado has capacity for 320 passengers with indoor and outdoor seating across two decks, while expansive outdoor passenger space allows more riders to experience a fresh-air trip across the Bay. It also has room on board for three dozen bicycles.

While Dorado is the fastest vessel in WETA's current fleet with a service speed of 36 knots, it is also the most flexible, as the first boat built for WETA that can safely dock at any of the system's 12 ferry terminals. It initially entered service rotating among WETA's routes to collect operational data and allow passengers across the ferry system to experience the boat, the agency said.

WETA claims San Francisco Bay Ferry was the fastest growing transit operator in the region prior to the pandemic, with more than 3 million passengers in 2019. Between 2012 and 2019, ridership on the system doubled.

Today, under WETA's Pandemic Recovery Program, which took effect in July 2021, ferry ridership is steadily growing. The program decreased fares 30% across the system and adjusted service to provide more flexibility for riders. WETA also launched a new integrated ticketing system and smartphone app for San Francisco Bay Ferry to improve and streamline the fare payment system. By June 2022, ridership on San Francisco Bay Ferry vessels reached 63% of pre-pandemic levels, outpacing comparable regional agencies, according to WETA.

Dorado is fitted with twin MTU 12V 4000 M65L diesel engines, producing 2,575 horsepower at 1,800 rpm each, and paired with HamiltonJet HT810 waterjets through ZF 7600 reduction gears. HamiltonJet also supplies its AVX package, which includes steering and controls.

Dorado is the ninth U.S. Environmental Protection Agency (EPA) Tier 4 or Tier 4 equivalent passenger ferry in WETA's fleet. In 2017, WETA commissioned the nation's first Tier 4 equivalent high-speed passenger ferry, Hydrus. In 2019, WETA commissioned the nation's first Tier 4 certified high-speed passenger ferry, Pyxis. Earlier this year, WETA re-entered Pisces into service after a conversion project replacing the vessel's Tier 2 engines with cleaner Tier 4 engines.

Dorado and its three sister vessels are expected to be WETA's final new ferries equipped with diesel propulsion, as the agency expects to order only zero-emission passenger ferries going forward. In fact, it expects to begin work on its first two zero-emission vessels before year end.

EDDIE SOMERS

Owner: Maryland Dept. of Natural Resources
Builder: Blount Boats
Designer: BMT Designers & Planners

Warren, R.I. shipbuilder Blount Boats this year delivered a new buoy tender/icebreaker built for the Maryland Department of Natural Resources (DNR). Eddie Somers was handed over on May 19 at Somers Cove Marina in Crisfield, Md.

The 94- by 227-foot shallow draft vessel is named after former DNR Capt. Eddie Somers, who retired in 2018 after 25 years as captain of the long-serving boat the new vessel is replacing, the J. Milliard Tawes, which has been in service for nearly 50 years.

The retiring vessel was built for the U.S. Coast Guard in 1941, and operated as a buoy tender until the early 1970s, when it was surplused by the federal government. The department acquired it for use on the Chesapeake Bay.

But unlike the retrofitted Tawes, the M/V Somers has been designed and purpose-built by DNR for the services it will provide, with a hull and running gear fortified for ice operations. Designed by BMT Designers and Planners, the Eddie Somers is powered by Cummins QSK19, Tier III marine engines, each producing 750HP at 1,800RPM, Twin Disc MGX-5202SC gearboxes and two 42x27 five-blade Michigan Wheel nibral propellers. A pair of Cummins Onan gensets produce 55 kW of electrical power each for service power. The steering system is a Jastrom B2-76-400-1-35 and the controls are Twin Disc EC300s. In addition, the vessel is equipped with a Melcal 5-ton knuckle boom crane for buoy and debris removal applications.

The boat built to ABS standards and is U.S. Coast Guard Subchapter T certified. It will serve as the primary icebreaking asset for Crisfield Harbor and Smith Island, in addition to placing buoys and performing other functions. As was the M/V Tawes, the M/V Somers will also be a lifeline to Smith Island when the waters surrounding it freeze over, with the boat clearing a path for supply and shuttle boats. By cooperative agreement with Virginia through the U.S. Coast Guard, the M/V Somers will also provide this service to Tangier Island in Virginia when requested. During heavy ice seasons, all food, fuel, medicine, and emergency transport going to and from the islands are supplied by the vessel.

"This is a great example of our efforts to modernize the assets of the Maryland Department of Natural Resources while also honoring our department's 50-year legacy of service," said Secretary Jeannie Haddaway-Riccio. "It is also a DNR tradition to name vessels after employees with exemplary years of service, so it is very fitting that it will be named after Capt. Eddie Somers who has done so much for his community, Smith Island and the State of Maryland."

The DNR's Hydrographic Operations team, based on the Eastern Shore, operates four large boats that perform various duties throughout the Chesapeake Bay. The department's boats are shallow draft, meaning they can get into rivers and shallow areas of the Bay.

Great Vessels of 2022

Dare County

MISS KATIE

Owner: EJE Dredging Service
Builder: Conrad Shipyard
Designer: Jensen Maritime

EJE Dredging Service, as part of a public/private partnership with Dare County, has recently taken delivery of a new shallow-draft hopper dredge on the Outer Banks of North Carolina. The newly built Miss Katie departed from Conrad Shipyard in in Morgan City, La. on August 13, and arrived at its new home port in Wanchese on August 19.

Local commercial and sport fishing industries, as well as the others that support them, are hoping that the new dredge will be an answer to the significant shoaling issues that have plagued various channels and inlets throughout Dare County. "There's about 1.2 million cubic yards of sand that move across the inlet every year, and removal of it is paramount," said Oregon Inlet Task Force Chairman and Dare County Commissioner Jim Tobin. "This really affects our recreational fishing and especially our commercial fishing business. We virtually have lost just about all of our commercial fishing fleet because of the shoaling issues."

Tobin said an economic impact study revealed the value of an open inlet to be about $500 million a year, plus or minus, depending on the year, while a fully opened could be up to $1 billion per year, meaning investing to address the shoaling problem would deliver a big payback.

In May 2019, the Dare County Board of Commissioners unanimously approved a contract for the construction and operation of a new split-hull dredge that could be used mostly in maintaining Oregon Inlet, as well as in Hatteras Inlet and other state waterways. Funding for the project came from a public-private partnership with the state of North Carolina, in which the legislature allocated $15 million from the Shallow Draft Navigation Channel Dredging and Aquatic Weed Fund for the purchase of the dredge.

"With the arrival of the Miss Katie, we look forward to providing an open and navigable channel for the waterways in the region," said Jordan Hennessy, vice president of EJE Dredging Service, the private partner that owns and operates the 156-foot-long dredge. "The Miss Katie has been specifically developed and designed to ensure she will be able to safely navigate the channels and inlets of North Carolina. The split-hull configuration will allow spoil discharge in shallow waters, thus preventing the vessel from grounding on her own hopper load."

Designed by Jensen Maritime, the ABS-classed dredge will be able to operate up to 12 hours a day, weather permitting, providing strategic dredging in area waterways. Miss Katie's operations will be managed by the Oregon Inlet Task Force, whose members will be responsible for scheduling, planning and monitoring the success of the dredging efforts that are undertaken.

"I can't tell you how excited I am to stand here with Miss Katie behind me," said Tobin. "Having access to this dredge and having a dredge here full time is going to be huge because we're going to be able to be there right after a storm hits all the hotspots going in and out the channel and just constant maintenance, which it's never had."

Tobin highlighted the fact that the public-private partnership that was formed to develop the dredge is the first of its kind—and an endeavor that many people across the country have been closely watching unfold since day one. "We went out and did a public-private partnership—the first one in the United States," said Tobin. "There are many, many other people watching what we did. Every time we'd go to one of these meetings—we just got back from a meeting in Wilmington—and people asked about this particular vessel and how we did it."

"The completion of Miss Katie and her long-awaited arrival here on the Outer Banks is a historic moment and will be a game-changer for watermen in Dare County," said Dare County Board of Commissioners Chairman Bob Woodard. "Commercial and recreational fishing are not just enormous economic drivers in our community; they've also been a way of life for thousands of folks here in Dare County for generations. It's absolutely critical that we have the resources in place to properly dredge our channels and inlets that these watermen depend on as their highway to get to work every day—and thanks to the county's partnership with EJE Dredging and the arrival of Miss Katie, we'll be much better equipped to do just that."

Great Vessels of 2022

Vane Brothers

CHARLES HUGHES

Owner: Vane Brothers
Builder: Chesapeake Shipbuilding
Designer: Chesapeake Shipbuilding

Baltimore-based Vane Brothers earlier this year welcomed the final boat in a series of four 3,000-horsepower Salisbury Class push tugs. Named the Charles Hughes, Vane's newest addition has entered service in the Northeast United States as the 20th Maryland-built towing vessel to join Vane Brothers' fleet since 2008.

Designed and constructed by Chesapeake Shipbuilding shipbuilders and naval architects of Salisbury, Md., Vane's Salisbury Class push tugs have a molded depth of only 10.5 feet, making them well suited for working in confined, shallow-draft waterways.

Capable of running speeds around 10.5 knots, the new push tug is equipped with Caterpillar 3512 main engines, conventional shafts, rudders and flanking rudders. Each main engine produces 1,500 hp at 1,800 rpm and is connected to stainless steel Hung Shen troost-style five-blade propellers through Twin Disc MGX-5600 gears with 6:1 ratios. The vessel is also equipped with Fernstrum box coolers as well as 65-ton Patterson winches and JonRie InterTech capstans.

A roomy pilothouse features both Simrad and Furuno electronics, as well as dual Rose Point electronic charting systems. Down below, the vessel accommodates up to seven crewmembers in large private and semiprivate quarters.

The Charles Hughes' three sister tugs, the Salisbury, Annapolis and Rock Hall, were delivered in 2019, 2020 and 2021, respectively. Along with providing exceptional crew comfort, reliability and operational efficiency, all four Salisbury Class push tugs comply with federally mandated, U.S Coast Guard-enforced Subchapter M safety standards.

According to Vane Brothers president C. Duff Hughes, "Vane Brothers takes pride in providing our customers and crews with vessels constructed to the highest standards. The Charles Hughes is another powerful, peak-performing tug that maximizes maneuverability where it is needed most."

To create the Salisbury Class design, Chesapeake naval architect John Womack worked in collaboration with Vane Brothers port captain Jim Demske, who has overseen construction of 48 tugboats for Vane over the last two decades. "Chesapeake has such a talented group of shipbuilders right in our backyard," Demske said. "Each tug capitalizes on safety, comfort and productivity."

The tug Charles Hughes is named in honor of the late Charles F. Hughes, former Vane Brothers Chairman of the Board and the father of Vane's current President, C. Duff Hughes. A previous push tug Charles Hughes, built in 1975 and rated at 1,800 horsepower, was acquired by Vane Brothers in 1991 and sold in 2019. The classic-looking nameboards from the first Charles Hughes were refinished and are now mounted on the new vessel.

All American Marine

SWIFTSURE

Owner: Puget Sound Express
Builder: All American Marine
Designer: Teknicraft Design

Bellingham, Wash. shipbuilder All American Marine (AAM) this summer delivered the new whale-watching vessel Swiftsure to Puget Sound Express (PSE). Modeled after the AAM-built and Teknicraft-designed Saratoga delivered in the Spring of 2018, the new larger 77-foot Swiftsure maintains performance while adding space to PSE's whale watch and eco-tourism business.

The vessel's design offers passengers a smooth ride and comfort as the hull provides a cushioned effect when encountering waves, AAM said. The 150-passenger, semi-displacement catamaran hull for this vessel was developed by Nic de Waal of Teknicraft Design in Auckland, New Zealand. The design integrates the signature Teknicraft symmetrical and asymmetrical combined hull shape, bow wave piercer and a dynamic hydrofoil system. This advanced hull shape was custom-designed using digital modeling and computational fluid dynamics (CFD) analysis. The hull design is complemented by Teknicraft's signature integration of a wave piercer positioned between the catamaran sponsons to break up wave action and ensures reduced drag while enhancing passenger comfort.

PSE co-owner Peter Hanke said, "The Swiftsure is the third boat that we have had the opportunity to build with All American Marine. Once again, this vessel has exceeded all performance expectations while incorporating EPA Tier 3 engines. Despite numerous supply chain challenges during the construction process, All American still delivered this exceptional vessel on time and on budget. They listened to us, and as they did on the first two vessels, met or exceeded our needs."

The USCG Subchapter T certified high-speed catamaran has two asymmetrical semi-planing hulls, and an adjustable aluminum midship hydrofoil plus two aluminum aft foils, which allow the boat to achieve top speeds of 40+ knots. This design, coupled with finely tuned, wave-piercing eco bows, enables the boat to travel through both calm and rough water at full cruising speed, while keeping underwater noise to a minimum, AAM said.

The Swiftsure was designed from top to bottom for low fuel consumption at high speeds, a critical factor to the success of the daily whale watch tours originating out of Edmonds, Wash. The vessel also utilizes four Hamilton Jet HJ364 water jets, complete with the Hamilton Jet control system. "We've done many years of research to develop a vessel design that's particularly low-wake, due in large part to our unique hydrofoil system that doesn't displace as much water and create waves as is the case with traditional hull design," said designer Nic de Waal.

The vessel is powered by four Scania Di 16 082M engines with a rating of 800 mhp at 2,300 RPMs. The soundproofing details in the engine room ensure that the passenger cabin is quiet and comfortable throughout the ride. The interior of the vessel is finished with cutting-edge materials, including recyclable Ayres aluminum honeycomb wall panels and recyclable Dampa aluminum ceiling tiles with acoustic insulation that span the main cabin as well as the interior cabin on the second deck. Other amenities include ADA-friendly accommodation spaces, comfortable Beurteaux seating, three restrooms, and an extended galley complete with a full-service bar for passengers. The Swiftsure is also equipped with seven HDTVs and a premium sound system with speakers inside and out for a fully immersive experience throughout the vessel's journey.

Great Vessels of 2022

Moose Boats

San Francisco-based Westar Marine Services this year put into service its first ever newbuild, the 75-foot crew and cargo transfer vessel Madison Lynne, from Vallejo, Calif. boatbuilder Moose Boats. The new vessel offers improved performance that ultimately allows Westar to expand its cargo and passenger carrying capabilities for its wide and varied customer base.

Founded in 1976, Westar is today a women-owned and -operated company offering marine construction services, escort and towing, barges, water taxis and stores deliveries to the San Francisco maritime community 24/7 from their home dock at Pier 50.

The company's new Incat Crowther-designed aluminum catamaran will be used for passenger and cargo transfers in the San Francisco Bay. Operated by a crew of two or thee, it has carrying capacity of more than 15,000 pounds of cargo and a passenger capacity of 28. At 75 feet long, the vessel is the largest ever built by Moose Boats.

While Incat Crowther in Lafayette, La. provided naval architecture services for the final design and USCG Subchapter T compliance, Moose Boats designed the cabin superstructure and general arrangement in-house with collaborative input from Westar. Engine, steering and joystick maneuvering controls in both the raised pilothouse and the upper level aft steering station provide captains with optimal visibility for bow and stern operations.

A Volvo Penta IPS (Integrated Propulsion System) ensures improved fuel efficiency, speed and maneuverability compared to other vessels in Westar Marine Services' fleet. Twin Volvo D13 turbo diesel engines with Volvo IPS3 drives provide efficient propulsion for the aluminum catamaran achieving a service speed of 25 knots and exceptional close quarters maneuverability.

"This build was a great collaborative effort between Westar, Incat Crowther, Helmut's Marine, Volvo Penta and Moose Boats," said Moose Boats' general manager, Steve Dirkes. "To see a boat of this size walk sideways without any bow thrusters is pretty incredible and a testament to the Volvo Penta IPS drives.

"We appreciate Westar choosing us for this build and hope they are as happy with their new boat as we are to have built it."

TOBIN

Owner: U.S. Army Corps of Engineers
Builder: Silver Ships
Designer: Silver Ships

A new marine surveying vessel is custom designed for the U.S. Army Corps of Engineers (USACE) to hydrographically map the mouth of the Mississippi River, allowing researchers to accurately and effectively obtain and document data on the rapidly changing waters in the mighty river.

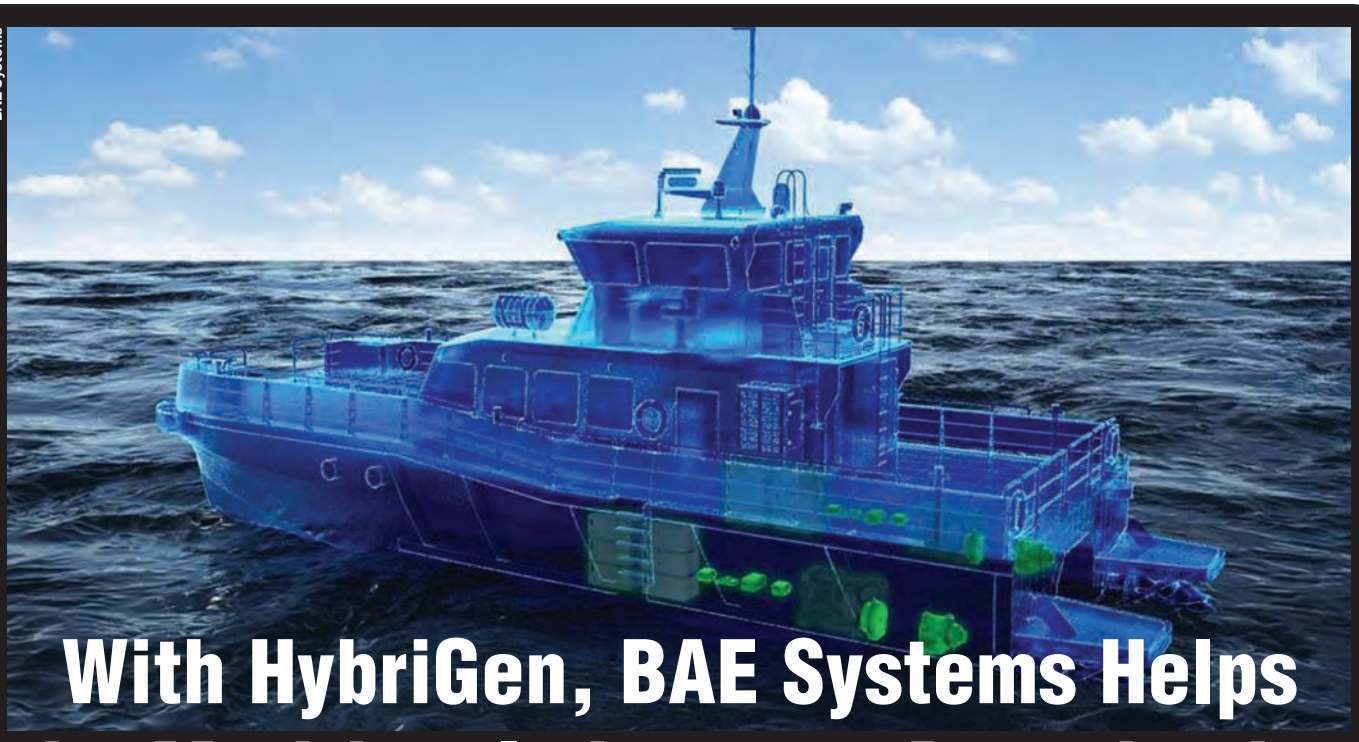
Delivered by Alabama shipbuilder Silver Ships to USACE's Venice Sub Office in Venice, La. earlier this year, Tobin is equipped to handle challenging river terrain as it conducts condition surveys of the river to further the safety of marine operations by helping to keep waterways open and prevent obstructions to marine navigation. "Tobin [joins] a fleet of vessels operating out of the USACE Venice Sub Office that works year-round to provide river condition data to vessel operators," said Jason Powers, Director of Business Development for Silver Ships. "This data is essential to the safe and efficient transportation of goods up and down the Mississippi River."

The 49-foot Tobin is the latest expansion in Silver Ships' Endeavor series of workboats and is the largest marine surveying vessel of its series. The vessel is powered by twin Caterpillar C18 Tier 3 engines making 800 hp each to reach speeds of 28 knots. The single Caterpillar C2.2 Tier 3 genset provides 25 ekW of electric power for Tobin's air conditioning, echo sounder and other electrical needs onboard.

Richard Tremayne, Thompson's Marine Business Manager, said, "Together our engineering teams have designed and built significant boats like Tobin over many years. High-performance power installations are always fun puzzles to solve with talented companies like the Silver Ships team."

Tobin operates with MGX5136RV Twin Disc marine gears, Michigan Wheel propellers, Furuno navigation and communication systems, Delta 'T' Systems engine room ventilation, Arid Bilge Series 4 system and Ayres paneling. Additionally, Tobin is equipped with state-of-the-art technology including the Teledyne Marine EchoTrac E-20 survey system, which uses a single-beam transducer that charts river depths and monitors water changes that could be potentially hazardous to marine navigation.

This vessel's name honors Thomas G. Tobin who worked for the USACE New Orleans District for more than 30 years. As a capable engineer and brilliant programmer, Tom developed systems that automated the processing and mapping of daily navigation condition surveys collected. He was a part of the Engineering Division Channel Improvement team and he achieved success with their automated design functions that ensure successful operations of the Mississippi River. Mr. Tobin passed away in February 2016, at the age of 54, after a battle with cancer. Mr. Tobin dedicated his skills to the Corps mission and made a broad, lasting and meaningful impact on the entire district and the citizens of south Louisiana.


BAE Systems

With HybriGen, BAE Systems Helps the Maritime Industry to Decarbonize

By Eric Haun

As the maritime industry continues along its emissions reduction journey, one company helping to lead the way is BAE Systems, a firm that's been involved with electric and hybrid propulsion for over 25 years.

"We're all about helping maritime operators get to zero emissions, and it doesn't matter if it's all-electric, a hybrid application or even fuel cell. We have the technology to help operators achieve lower emissions and keep operating just as they're used to with conventional based propulsion," said Joe Hudspeth, BAE Systems' Director of Business Development, Global Marine.

BAE Systems' HybriGen power and propulsion system is designed to help improve power and efficiency, reducing, or even eliminating, fuel burn and emissions in the process. The latest version, launched toward the end of 2021, uses smaller and lighter components, and its modular accessory power system (MAPS) and modular power control system (MPCS) allow for a scalable, tailor-made solution to fit the specific power and propulsion requirements of a range of vessels, from passenger ferries to tugs.

Hudspeth said BAE Systems has seen the industry's interest in the system build over recent years, especially for passenger vessels, ferries and research vessels, and more recently, harbor craft as well as crew transfer vessels (CTV) for offshore wind. "We definitely see momentum building right now for hybrid, electric and even fuel-cell-based propulsion," he said, noting that the industry has been shifting from a "learning environment" and wanting to know what the technology is all about, to now "accepting hybrid and electric technology as a viable propulsion source. . . Now they're asking how they can incorporate that technology on their boats."

"When you think of harbor tugs or pilot boats, patrol boats, these are vessels that spend 90% of their time at

Senesco Marine

BAE Systems' HybriGen Assist system will be installed on a new hybrid-electric passenger vessel for the Maine Department of Transportation's Maine State Ferry Service (MSFS).

less than 50% of their installed power—a lot of loitering time. And that loitering time leads to excess and unnecessary emissions," Hudspeth said. "So why not do that with all-electric emissions-free power?"

Another key area of opportunity for BAE Systems' HybriGen is in the CTV segment. "We see North America really gearing up to get into the offshore wind industry," Hudspeth said. "If you're going to a green form of power generation for our homes and businesses, certainly the vessels that are out there tending to those wind farms should also have similar low emissions, low carbon footprint propulsion systems as well."

Among the most noteworthy applications for the HybriGen system is the Sea Change, America's first hydrogen fuel cell powered vessel. And BAE Systems has secured a number of notable orders across the globe in recent months. In the U.S., it was tapped to supply its solution to deliver reduced and zero-emission operations capability for a new hybrid-electric passenger vessel being built by North Kingstown, R.I. shipyard Senesco Marine for the Maine State Ferry Service (MSFS).

"For this particular project, we're using a parallel-based hybrid propulsion system," Hudspeth said. "It has a conventional propulsion power plant installed on board the vessel, which is supplemented by electric propulsion. We actually use all-electric, zero-emissions propulsion for the vessel to be at the dock while the cars and passengers are loading. It's done completely emissions free. And this particular boat, the vessel needs to hold itself against the dock and have propulsion remain engaged. And we can do that completely quiet, vibration free and emissions free. And then when the vessel departs the dock and leaves the harbor, it also can do that under all-electric propulsion until it gets underway at the full cruise speed. Then it will use conventional based propulsion. And that's all done through a seamless transition. The captain just needs to focus on driving the boat. Everything is fully automated."

The system will also be able to provide a boost when power needs surpass what the conventional propulsion can supply. "Our electric propulsion can work in conjunction with that diesel propulsion and provide boosting power even to higher horsepower ranges," Hudspeth said. "That's a unique feature of a parallel-based hybrid propulsion system."

In addition to the parallel-based hybrid propulsion setup, HybriGen can also be used in full electric applications or even hybrid applications that use serial hybrid propulsion. The scalable system can be customized to provide all necessary power for both propulsion loads and auxiliary power hotel loads. "It really is a modular and flexible platform and gives us a lot of capability," Hudspeth said. "We can even use this same system to facilitate all of the charging for the batteries."

While HybriGen's modularity and scalability help BAE Systems to tailor the system for a wider range of vessels and operational profiles, these characteristics also help the company to cater to customers at all stages of the decarbonization movement. "We realize this is a journey. Not everyone is ready to get to zero emissions today," Hudspeth said. "We can offer a hybrid solution that uses diesel as a source for power generation. Or we can use that same HybriGen technology for all-electric, simply add more batteries. The great thing is people can start out with a hybrid solution today and very quickly in the future, tran-

Among the most noteworthy applications for the Hybrigen system is the Sea Change ferry, America's first hydrogen fuel cell powered vessel.

All American Marine

sition to all-electric, simply by adding more power through batteries or tapping into shoreside charging infrastructure to recharge those batteries."

Of course, a number of challenges come with the territory for hybrid and electric vessel projects, as is the case for the adoption of any "new" technology. For battery-electric vessels in particular, Hudspeth said, "One of the main challenges is many of the piers and docks in which these vessels operate have not been properly set up to accommodate the infrastructure for shore side charging. . . It's going to take some time for this infrastructure to develop, but we think that there are solutions that are available today that can help people get into operations with lower emissions."

Another challenge, according to Hudspeth, is upfront costs that are typically higher than traditional propulsion options. "The cost typically is at a premium, but if you look at the total cost of ownership, you will find that considering hybrid, electric or even fuel-cell-based propulsion certainly does have a payback. And that payback is both in the form of tangible lower operational costs, but intangible benefits as well. . . We can help walk through operators while they're considering the total cost of ownership and showing them what they can expect with an alternative propulsion system."

Hudspeth noted lower noise, decreased vibration and the ability for vessels to operate safely in sensitive coastal environments among key benefits. The HybriGen can also be used with geofencing technology that allows vessels that may be using hybrid propulsion to go into an all-electric emissions-free mode anytime they enter into a specific GPS defined boundary, Hudspeth said. "There is no need to push buttons or pull levers. It's done automatically and you can ensure that the vessel is operating with a lower carbon footprint in those sensitive coastal environments."

Tech
File

Best New Tech

Methanol to Hydrogen Generator

e1 Marine's M-series methanol to hydrogen generator serves as a link allowing easy-to-handle methanol—a top commodity globally, located in bunker quantities at more than 100 ports—to be converted into power-dense and clean hydrogen on board, in real time. It is a key piece of technology on board the Hydrogen One towboat being built Intracoastal Iron Works for Maritime Partners and its customer American Commercial Barge Line (ACBL).

"In simplified terms, we turn methanol to hydrogen as needed," said Robert Schluter, Managing Director at e1 Marine. "As the fuel cell, which is the engine in this case, needs hydrogen, we just operate the fuel delivery system to provide the hydrogen as it's needed."

"The process is robust in design with very few moving parts, requires minimal maintenance and offers outstanding longevity."

According to Schluter, here's how it works:

First, methanol (CH_3OH) and water (H_2O) are mixed at a roughly a two-thirds/one-thirds composition to create the feedstock, which is pumped into a heat exchanger to cool the product hydrogen, preheat the feedstock and obtain optimal thermal efficiency for the generator. Then, the pre-heated feedstock flows into the reactor "hot box", where it is converted into a vapor before being directed into a catalytic reactor to convert the feedstock into a syngas, a mixture of hydrogen, carbon monoxide (CO) and carbon dioxide (CO_2), Schluter said.

Next, hydrogen is separated from the syngas using e1 Marine's membrane purifier, the heart of the system. The small amount of remaining hydrogen-depleted gas from the purifier is directed back to the reactor and combusted to generate the heat for the steam reforming reaction. Exhaust from the raffinate combustion is sent to the atmosphere, and the only new emissions produced by the hydrogen generator are

e1 Marine

Cavotec

carbon dioxide and water vapor.

"The hydrogen goes to a small buffer tank, and then the fuel cell pulls off that buffer tank as needed," Schluter said. "It's a very small quantity of hydrogen. Less than half a kilogram actually exists at any one time."

Megawatt Charging System

Cleantech engineering company Cavotec unveiled its ultra-fast Megawatt Charging System (MCS), a turnkey DC charging solution with grid-to-inlet functionality, capable of providing up to 3MW of power from a single connector to support the decarbonization of vessels and industrial vehicles.

"MCS enables the safe and quick connection of heavy-duty vehicles and ships to electrical power in a reliable, ergonomic unit. As the most powerful system on the market, MCS significantly reduces typical charging times, thereby minimizing downtime," said Jörn Bullert, Vice President Product Management, Charging Solutions.

MCS is a modular solution, featuring either manual or automated connection to the vehicle inlet, and providing up to 3MW charging power with a single MCS connector. The MCS has been designed for use with e-vessels such as ferries, as well as all kinds of heavy-duty vehicles used in a variety of sectors, including agriculture, construction and mining.

Armach Robotics

Melding advanced software, intelligence, robotics and navigation, Armach Robotics – a spinoff of Greensea Systems – leads a step change in ship hull cleaning and maintenance with its Robotics as a Service model. The company offers a complete, proactive in-water cleaning solution for ships and ship hulls based on autonomy, data fusion and intelligence.

So is Armach Robotics a product company, a service company, or both? "Neither, actually. This is a Robot as a Service (RaaS) company," said Ben Kinnaman, CEO, Greensea Systems. "We are providing resident vehicles to ships, resident vehicles to ports and harbors and vehicles to establish service providers on a monthly subscription basis. What we are offering ship owners is a very simple product: a constantly clean hull for a basic subscription fee."

Anyone adopting this is going to realize a number of value propositions, including the fuel savings and emissions benefits that come with having a clean hull with less drag, as well as operational efficiency, maintenance cost savings and fleet readiness.

Armach Robotics

Tech File

Variable Speed Marine Gensets

A new range of variable speed marine generator sets, now a standard part of the Volvo Penta marine offering, is expected to be a key enabler for electric propulsion for marine vessels as the industry's transformation toward sustainable marine propulsion continues to gain momentum.

According to Volvo Penta, the move toward modular propulsion enables operators to invest in new vessels with the peace of mind that they are built ready and adaptable for emerging alternative energy sources. "By making our Volvo Penta variable speed marine generator sets more widely available, it takes us further forward in our journey towards more electric- and fuel-cell propulsion for the marine industry," said Johan Inden, head of the Volvo Penta marine business. "Now, more vessels will be able to install modular hybrid propulsion systems ready to be adapted to future energy choices, meanwhile delivering important sustainability and fuel efficiency gains from day one."

With the technology now working efficiently in real-world applications, Volvo Penta is offering the range with models starting from D8, 190 kWe and running up to 545 KWe for the D16. The variable speed marine gensets make it possible to build vessels with smaller battery banks and charge them while on the move, which makes the switch to hybrid-electric marine propulsion more cost-efficient and accessible. A typical installation sees a modular series of variable speed marine gensets installed to power electric drives with or without battery packs. This direct current (DC) grid system is easy to upgrade with alternative power sources and has fewer components, weighing less – especially when compared to batteries as the sole energy carrier – making the vessel more efficient.

Rogue ET 200iP PRO

ESAB Corporation said its new Rogue ET 200iP PRO HF TIG/Stick inverter is designed to give exceptional TIG performance and full-function digital controls at an affordable price. The unit weighs just 21.2 lbs. and delivers a 200A TIG output at 25% duty cycle. With a welding output range of 10 – 200 amps, Rogue ET 200iP PRO offers the arc control required for delicate welds and the power to run 5/32-in. "Rogue will cause the industry to re-think its perception of power, performance and price in the compact TIG/Stick inverter category," said Bartosz Kutarba, Global Product Manager – Light Industry Equipment, ESAB. "Other welders with its features can cost twice as much."

Volvo Penta

ESAB Corporation

Vessels

Waterways Commerce Cutters

Birdon Group

The U.S. Coast Guard has awarded Denver-based Birdon America, Inc. a contract for the detail design and construction of its new river buoy and inland construction tenders.

The deal is part of the Coast Guard's Waterways Commerce Cutter (WCC) Program to replace its aging fleet of 35 inland tenders that support the service's aids to navigation (ATON) mission in federal inland waterways. The WCC fleet is approaching obsolescence, with an average vessel age of over 57 years and with ships still in service at 78 years old.

Birdon America's initial $28.49 million award is an indefinite-delivery, indefinite-quantity firm fixed price contract with economic price adjustments. It includes options for the construction of a total of 16 river buoy tenders and 11 inland construction tenders, and the total contract value is estimated at $1.19 billion if all line items are exercised.

Methanol-hybrid Tug

Naval architecture firm Glosten and global technology company ABB have joined forces to develop a methanol-hybrid ship assist tug design intended as path to carbon-neutral operations while minimizing operating costs. Referred to as the SA-100, the 100-foot ASD harbor tug is propelled by two methanol-compatible CAT 3512E gensets powering electrically driven L-drives. The gensets are complemented by battery banks for zero-emission operation when transiting, peak shaving during general operation, and as boost for achieving the tug's peak bollard pull of 90 short tons. The SA-100 was also designed to measure under 100 gross registered tons.

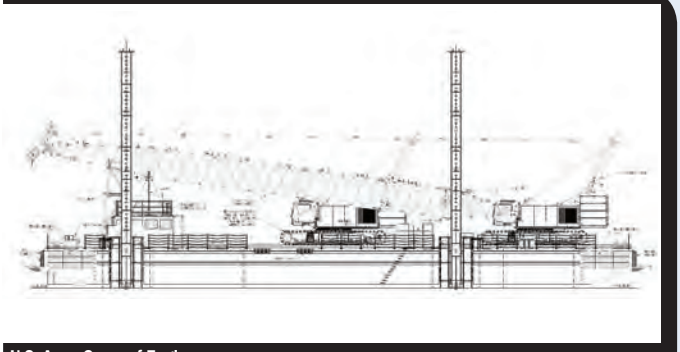
Glosten

Imua

All American Marine

All American Marine has been awarded a contract to build a research vessel for the University of Hawai'i at Mānoa and the University of Hawai'i Foundation, on the behalf of the Hawai'i Institute of Marine Biology. This research vessel, with construction already underway in AAM's facility on Bellingham Bay, is a 68.5' x 25' semi-displacement aluminum catamaran hull that was developed by Nic de Waal of Teknicraft Design in Auckland, New Zealand. The vessel will contain proven design elements found in the recently commissioned and successful research vessels Blue Manta and Shearwater built for BlueTide Puerto Rico and Duke University, respectively.

USACE Crane Barge



U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers, Detroit District in concert with the Philadelphia District and the Marine Design Center awarded a $11.4 million contract to Southwest Shipyard in Houston for a new crane barge on the St. Marys River.

"The new crane barge will perform critical lock and hydropower facility maintenance at the Soo Project Office (Soo Locks)," said Justin Proulx, Chief of the St. Marys River Section. "Additionally, the new vessel will support channel maintenance and will be ready to respond to critical maritime incidents on the St Marys River, such as vessel groundings and anchor drags."

The new crane barge will be 150 feet in length, have a beam of 50 feet, and a 10-foot molded depth, supporting a 220 U.S. ton lattice boom crawler crane. Southwest Shipyard intends to construct the barge at its Brady Island shipyard with delivery expected in Fall of 2024.

MSV(L)

U.S. shipbuilder Vigor launched the first in a series of modernized landing craft for the U.S. Army at its fabrication facility in Vancouver, Wash.

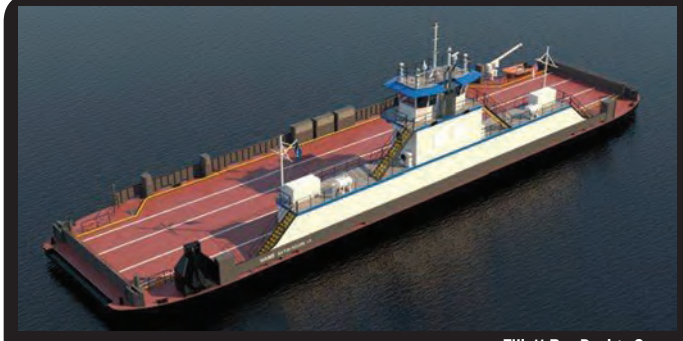
The Maneuver Support Vessel (Light), or MSV(L), will replace the Landing Craft Mechanized-8, (LCM-8,) a Vietnam-era watercraft that is unable to transport some of today's equipment due to the weight of modern combat vehicles. Designed with increased payload capability, increased speed and maneuverability and improved draft, the MSV(L) will improve the speed and effectiveness of the Army's dynamic force repositioning in inter-coastal areas, rivers and inland waterways, and in anti-access/area-denial environments.

The Army awarded Vigor in late 2017 a 10-year contract for the development and production of up to 36 of the new watercraft. The current Army Acquisition Objective is to build 13 vessels, according to Wolfgang Petermann, project manager, Transportation Systems, PEO CS&CSS.

Vigor

Builder's trials are slated for completion in November, followed by extended acceptance trials. A low-rate initial production decision on the Maneuver Support Vessel (Light) is targeted for early 2023. The prototype is slated for delivery to the Army Mariner community headquartered at Joint Base Langley-Eustis in early 2024.

Cameron Ferries



Elliott Bay Design Group

The Louisiana Department of Transportation and Development (DOTD) received an apparent low bid from Houma, La. based Thoma-Sea Marine Constructors for the construction of two new ferry boats for the Cameron crossing in Cameron Parish. The bid was $49,706,865. Construction of the two new ferries is expected to begin early next year with an estimated completion in mid-2025.

Designed by Elliott Bay Design Group, the new boats will be 190' x 50' x 13' and will replace the M/V Cameron II, which was built in 1964. The boats will be end-loading vessels in order to load and unload large commercial vehicles. Two boats will be built so that ferry service will continue uninterrupted when one vessel undergoes required dry docking as per U.S. Coast Guard regulations. The two new vessels will use battery-powered electric thrusters charged by diesel generators on board, and they can be upgraded to fully electric in the future.

Offshore Patrol Cutters

Austal USA

Mobile, Ala. shipbuilder Austal USA has been cleared to begin the second stage of the U.S. Coast Guard's (USCG) Heritage-class offshore patrol cutter (OPC) build program following the withdrawal of an award protest filed by an unsuccessful bidder, the USCG said.

In June, Austal USA was awarded a $208.26 million contract for detail design and long lead-time material for one OPC, with options for production of up to 10 additional vessels. The deal could be worth up to $3.33 billion if all options are exercised.

Shortly after in July, Eastern Shipbuilding Group, based in Panama City, Fla., under contract to build the first four OPCs for stage one of the program, filed a protest with the Government Accountability Office (GAO), citing unfair competitive advantage and conflict. The group claims Austal had access to non-public OPC information that gave it an advantage toward securing the highly-contested shipbuilding project.

With its protest now withdrawn, Eastern will reportedly continue to pursue the issue in federal court as it proceeds with its existing OPC program.

Austal USA, which recently opened a new $100 million facility that gives it steel shipbuilding capabilities, is expected to start OPC construction in 2023. The first Austal-built OPC will be named Pickering.

People & Companies


Edvardsen Haugan

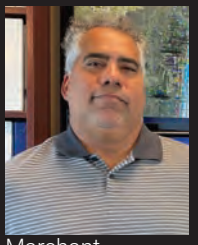

McCarthy


D'Aoust


Hellström


Rodriguez


Borkey


Marchant

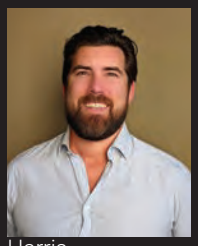

Minten


Atkinson


Smith


Maldonado


Brown


Harris

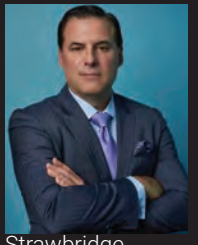

Cox


Kostos


Myers


Harris


Hentschel


Strawbridge


Jensen

Haugan Named President at Kongsberg Maritime

Cut Lisa Edvardsen Haugan

Lisa Edvardsen Haugan was appointed as the new President of Kongsberg Maritime, the largest business area of Kongsberg, replacing Egil Haugsdal starting in November 2022.

McCarthy the New CEO at Seaspan Shipyards

Canadian shipbuilding and ship repair company Seaspan Shipyards named John McCarthy as CEO, succeeding Mark Lamarre, who assumes a new role as president and CEO of The Washington Companies

D'Aoust Leading American Queen Voyages

River cruise operator American Queen Voyages has named Cynthia "Cindy" D'Aoust as its next president, effective October 3, 2022.

Hellström Takes the Helm at Echandia

Maritime battery and fuel-cell systems company Echandia said it has appointed Fredrik Hellström as its new CEO.

Manson Hires Rodriguez as CFO

Jon Rodriguez assumed the role of chief financial officer at Seattle-based marine contractor Manson Construction Co., effective August 15.

People & Companies

HII Names Borkey CTO

Defense and technologies company HII has promoted Todd Borkey to executive vice president and chief technology officer.

Port Everglades Promotes Marchant

Port Everglades has promoted Chris Marchant to the role of Chief Harbormaster, guiding maritime services for Broward County's 2,190-acre seaport.

Marine Travelift Promotes Minten

The Marine Travelift/Shuttlelift/ExacTech, Inc. family of companies has promoted the longest tenured employee in Marine Travelift history, Kurt Minten, to Executive Vice President.

Crowley Names Atkinson Sustainability VP

Crowley has promoted Meaghan Atkinson as Vice President of Sustainability as the company drives to decarbonize across its operations and value chain to reach net-zero emissions by 2050.

Smith Named VP at St. Johns

Palatka, Fla. shipyard St. Johns Ship Building has named Justin Smith to the position of Vice President of New Construction.

Callan Taps Maldonado as VP

Galveston, Texas based dredging and marine construction contractor Callan Marine said it has named Joey Maldonado as Vice President of Construction Estimating.

Brown Named US Sales VP for Carboline

Coatings manufacturer Carboline announced it has named Rick Brown as Vice President of Sales USA.

Harris Joins Foreship

Naval architecture and marine engineering consultancy Foreship appointed Brendan Harris as Director, Project Management Services in the U.S.

WAGO Promotes Cox

WAGO, a developer of connection systems in electrical engineering and electronics, named Jesse Cox as Director of Automation Sales Engineering and Development.

Spear Promotes Kostos

Spear Power Systems, a U.S.-based manufacturer of lithium-ion energy storage systems, announced it has promoted Ryan Kostos to Applications Engineering Manager.

Myers Joins Propspeed

Propspeed, an innovator of underwater foul-release coatings, has hired Chris Myers as Vice President of Sales Americas.

WSP USA Hires Harris as Navy Program Director

WSP USA, an engineering, environment and professional services consultancy, has hired Charles "Chuck" Harris as Navy program director for the firm's Federal Programs national business line.

TSCG Hires Hentschel

Ryan Hentschel has joined naval architecture, marine engineering & marine surveying firm The Shearer Group, Inc. (TSGI) as a naval architect.

Strawbridge Elected AAPA Chairman

Trade group the American Association of Port Authorities (AAPA) elected a new Chairman of the Board of Directors, Sean Strawbridge, CEO of the Port of Corpus Christi.

Jensen Elected Port NOLA Chairman

The Board of Commissioners of the Port of New Orleans (Port NOLA) elected Jack C. Jensen, Jr. to serve as Board Chairman, succeeding Charles H. Ponstein, whose term as Chairman ended.

THE MARITIME NETWORK

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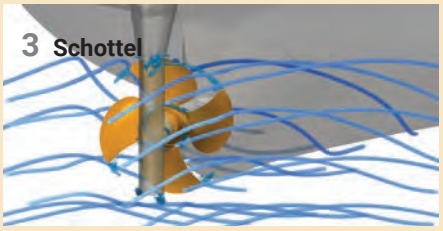

4 Volvo Penta

1. NLPHD Series Waterlocks from VETUS

The heavy-duty NLPHD series of waterlocks from VETUS can handle extreme conditions above 500 °F. Known for extraordinary noise reduction, these waterlocks feature rotating bodies and hose connections and are a cost-effective option for light-duty commercial vessels.

https://vetus.com/usa/exhaust-systems

2. In-Mar Solutions: Alu Pilot Chairs & Deck Rails

In-Mar Solutions offers a complete line of Alu Design & Services Marine Pilot Chairs and Deck Rails. There is a standard line in addition to the option for custom designs to suit specific needs. Sleek, modern design and maximum utility and comfort are emphasized.

www.inmarsolutions.com

3. Quiet Propulsion

SCHOTTEL was granted funding within the Government of Canada's Quiet Vessel Initiative, which supports the development of new quiet vessel technologies, designs and operational practices, leading to less underwater noise from vessels. SCHOTTEL will assess the noise reduction achieved by the installation of a redesigned propulsion system by measuring underwater noise. The propulsion system will feature an optimized propeller design for the vessel's adapted operation profile. This data will enhance the accuracy of underwater noise prediction methods and be used to develop a prototype for a real-time onboard noise monitoring system.

4. Dual-fuel Hydrogen Engines

Volvo Penta and CMB.TECH are working together to accelerate the development of dual-fuel hydrogen-powered solutions, with the aim to establish dual-fuel hydrogen technology as a low-carbon interim solution before suitable zero-emissions alternatives become viable. The partnership will cover pilot projects and small-scale industrialization of a hydrogen dual-fuel solution for selected customers. The design and testing of the hydrogen-injection system will take place at CMB.TECH's Technology and Development Centre in Brentwood, U.K., where Volvo Penta engines will be tested to optimize the hydrogen-diesel injection strategy for maximum reliability and emission savings.

5 ZF Marine

5. ZF Pod Propulsion

Marine driveline specialist ZF premiered its new 4600 POD Propulsion System for large vessels for the first time in North American market. Engineered for large recreational and commercial vessels with planing and semi-displacement hulls measuring from 80 up to 130 feet, the 4600 POD Propulsion system had been unavailable outside of European markets until now. The system is compatible with all main OEM engines up to 1,700 hp at a maximum of 2,450 rpm. Commercial applications include pilot boats, supply vessels, small ferries as well as patrol and rescue boats.

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Managing Editor (Name and complete mailing address)

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f. Total Distribution (Sum of 15c and e) ▶	13679	14560
g. Copies not Distributed (See Instructions to Publishers #4, (page #3)) ▶	517	580
h. Total (Sum of 15f and g)	14196	15140
i. Percent Paid and/or Requested Circulation (15c divided by 15f times 100) ▶	98.2%	97.7%

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a. Requested and Paid Electronic Copies ▶	13387	14186
b. Total Requested and Paid Print Copies (Line 15c) + Requested/Paid Electronic Copies (Line 16a) ▶	26816	28410
c. Total Requested Copy Distribution (Line 15f) + Requested/Paid Electronic Copies (Line 16a) ▶	27086	28746
d. Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (16b divided by 16c × 100) ▶	99.1%	98.8%

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17. Publication of Statement of Ownership for a Requester Publication is required and will be printed in the issue of this publication: November 2022

18. Signature and Title of Editor, Publisher, Business Manager, or Owner: Kathleen Hickey — Date: 9/20/2022

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Marine News 2023 Editorial Calendar

January 2023

Ad close Jan. 4

E-Magazine Edition:

U.S. Offshore Wind:

Shipbuilding, Ports & Logistics

February 2023

Ad close Jan. 20

Power & Propulsion

- Passenger Vessels
- Mariner Training & Education
- Safety Equipment

Event Distribution

PVA Maritrends: Feb 2-5, Long Beach, CA

CMA: Mar 28-30, Stamford, CT

IPF Wind: March 28-30, Baltimore, MD

Ferry Safety & Technology: April 1, New York, NY

March 2023

Ad close Feb. 28

E-Magazine Edition:

U.S. Inland Waterways Transport: Operations, Infrastructure & Dredging

April 2023

Ad close Mar. 17

Towboats, Tugs & Barges

- 2023 Shipbuilding Report
- Navigation Technology
- U.S. Offshore Wind

Event Distribution:

OTC: May 1-4, Houston, TX

SeaWork: June 13-15, Southampton, UK

Inland Marine Expo: May 31-June 2, Nashville, TN

May 2023

Ad close April 21

E-Magazine Edition:

U.S. Maritime Workforce: From Offshore to Inland Waterways & Shipyards

June 2023

Ad close May 19

Combat & Patrol Craft

- Navy & Coast Guard Shipbuilding
- Autonomous Vessels
- Dredging

Event Distribution:

WEDA Dredging Summit: July 17-20, Las Vegas, NV

Multi-Agency Craft Conference: Dates & Location TBD

July 2023

Ad close June 22

E-Magazine Edition:

The Green Marine Annual: New Products & Innovations

August 2023

Ad close July 21

Boatbuilding & Repair

- Naval Architecture & Marine Engineering
- Shipyard Equipment
- Workboat Communications

Event Distribution:

SNAME Maritime Convention : Dates & Location TBD

September 2023

Ad close Aug. 25

E-Magazine Edition:

Fast Craft: Patrol, Fire, Police, Pilot Boats & Ferries

October 2023

Ad close Sept. 18

Offshore Energy

- Vessel Repair & Conversion
- Electrification & Alternative Fuels
- Deck Machinery & Cranes

Event Distribution:

Clean Gulf: November. Dates TBD, Houston, Texas

Electric & Hybrid Marine World Expo: Dates TBD

November 2023

Ad close Oct. 20

The Workboat Edition

- Top Vessels of 2023
- Power & Propulsion Technology
- U.S. Shipyards

Event Distribution:

International WorkBoat Show: Dates TBD, New Orleans, LA

December 2023

Ad close Nov. 30

E-Magazine Edition:

Workboat Technology: Best Marine Technology & Service Innovations of 2023

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37	Blount Boats	www.blountboats.com	(401) 245-8300
65	Clean Gulf	www.cleangulf.org	Visit us online
23	Colonna's Shipyard	www.colonnaship.com	(757) 545-2414
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37	Ebac Systems	www.ebacusa.com	(757) 873-6800
57	Environmental Marine, Inc.	www.envmar.com	(606) 561-4697
19	Gladding Hearn	www.gladding-hearn.com	(508) 676-8596
39	Hilliard Corp.	www.hilliardcorp.com	(607) 733-7121
10,11	Marine Systems, Inc	www.marinesystemsinc.com	(985) 223-7100
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7	Thordon Bearings	www.thordonbearings.com	Please visit our website
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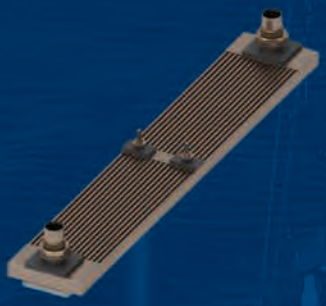

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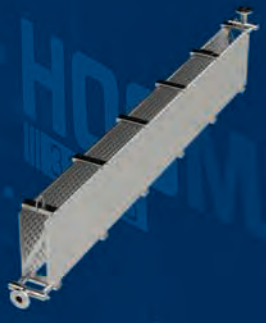

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