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Marine News

Volume 35 • Number 11

NOVEMBER 2024

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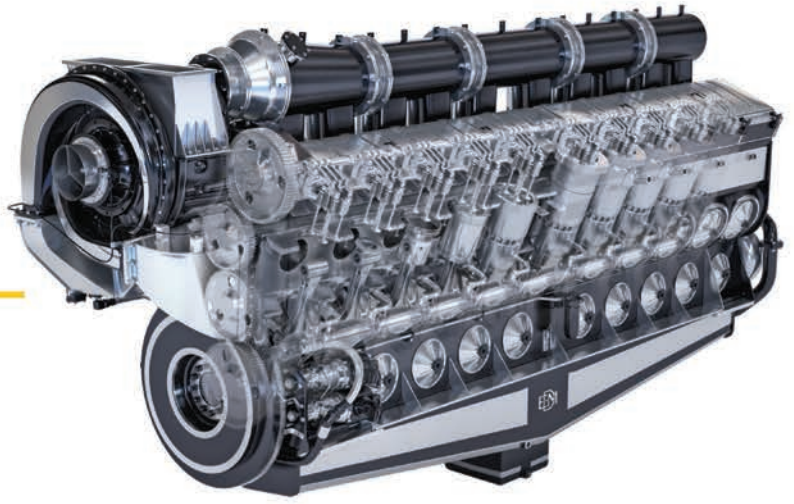

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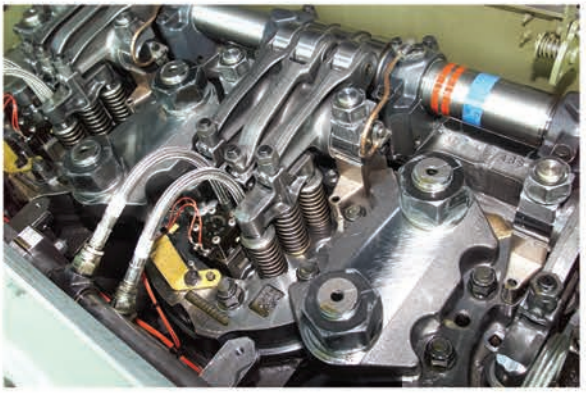

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Sergii / Pexels

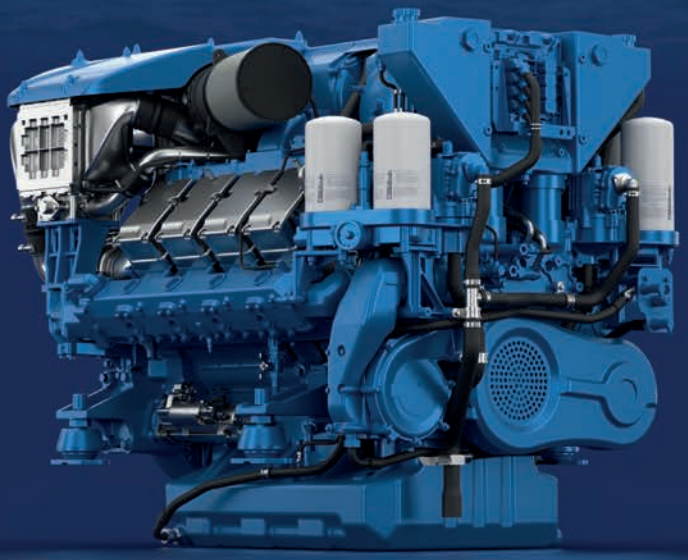
Eureka Naval Craft

Blount Boats

On the Cover

U.S. shipyards are constantly churning out vessels that are notable in one way or another. This month, *Marine News* highlights some of the best deliveries from 2024.

BUILT TO NAVIGATE



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Editor's Note

Eric Haun, Editor,
haun@marinelink.com

As I sit to write this note for my final issue as editor of *Marine News*, I find myself reflecting on the incredible journey I have had as part of the New Wave Media team. Over the years, this magazine has been more than just a publication; it has been a vibrant community of voices, ideas and stories, bound by a common tie: the commercial maritime industry.

Throughout my time as editor, I have been driven by a passion for storytelling and a desire to highlight the remarkable individuals and issues that shape this vital sector. It has been a privilege to share the stories of the people, companies and technologies steering the maritime industry through uncharted waters. Each page reflects the dedication of our talented team, and I am endlessly grateful for their hard work and support.

As I prepare to pass the torch, I am filled with both nostalgia and excitement for the future. *Marine News* remains backed by one of the best and most respected publishers in the maritime B2B space. I know that the magazine remains in great hands, and I look forward to seeing how it evolves. I encourage you, readers, to embrace this next chapter with the same enthusiasm you've shown me over the years.

Thank you for being part of this journey.

With heartfelt gratitude,

Eric Haun

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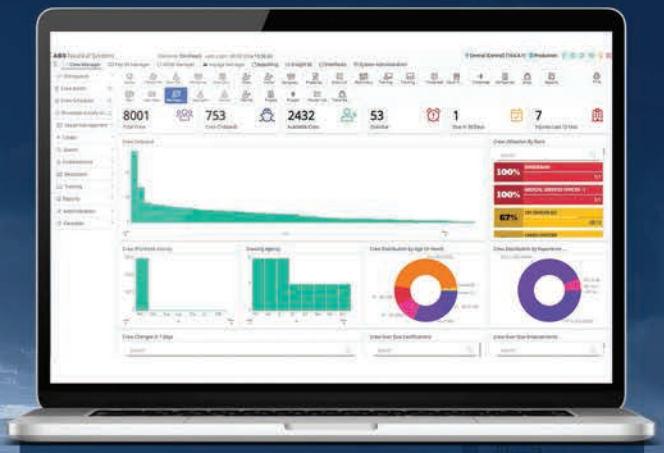

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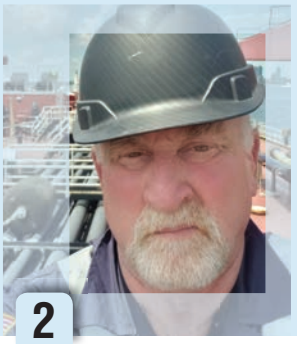
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By the Numbers

Fierce Competition Drives Down the Cost of US Dredging Projects

Heavy competition within the U.S. dredging sector helps to save American taxpayers hundreds of millions of dollars each year, as highlighted by a recent industry report.

According to the "U.S. Dredging Report: An Analysis of the FY23 U.S. Federal Dredging Market", compiled by dredging industry insider Michael Gerhardt, highly competitive U.S. dredging companies saved taxpayers $707 million for contracts awarded by the U.S. Army Corps of Engineers (USACE) in FY 2023 alone.

The USACE awards a diverse array of dredging projects, ranging from maintaining and deepening ports and navigational channels to environmental restoration and shoreline protection. These projects are essential for ensuring safe and efficient maritime transport, flood risk reduction and ecosystem health.

In total, 56 different companies were awarded USACE dredging work in FY23, including 21 large and 34 small businesses. Each project, including both unrestricted and small business set-aside projects, as well as hopper dredge projects, received an average of three bidders, helping to keep costs low.

"The private sector U.S. dredging industry continues to be highly competitive, innovative and saves the country hundreds of millions in tax payer dollars," said William P. Doyle, CEO of the trade group Dredging Contractors of America (DCA).

The industry low bid compared to the Government Estimate (GE) and Government Estimated Awardable Range (GEAR) accounts for the following:

- 135 of the 163 projects have available industry bid/GE comparisons and were not sole-sourced: 85 of the 135 (63%) had a winning bid lower than the GE; and 126 of the 135 (93%) had a winning bid lower than the GEAR.
- Of the 85 projects where industry was lower than the base GE, 63 projects were cheaper by more than 10%; 32) projects by more than 25%; 11 by more than 40%; and four by more than 50%.
- The savings to the United States is $707,332,283. This is an average savings of tax payer dollars of 35% per project when compared to the GEAR.

FY23 was also a record year in terms of contracts awarded, with nearly $2.1 billion in USACE dredging contracts awarded, a 39% increase from FY22 and 20% above the $1.7 billion seven-year average.

According to Doyle, this record demand is leading the Jones Act dredging industry to invest heavily in its fleet.

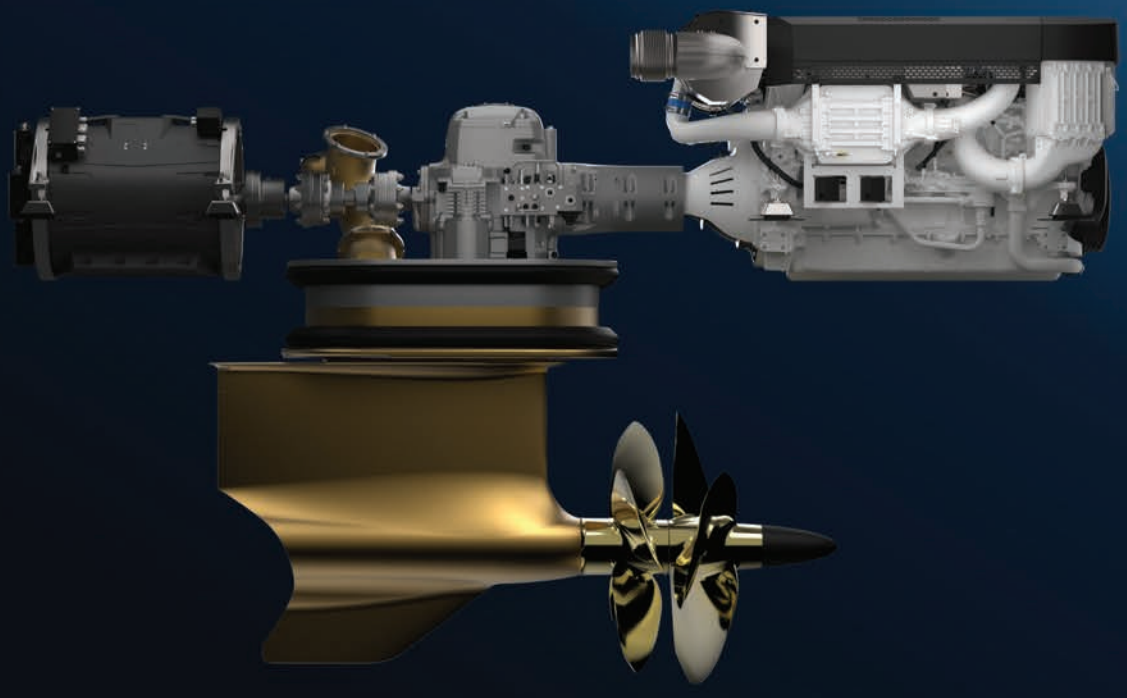
In addition, more USACE dredging projects are incorporating beneficial use of dredged material, Doyle added, noting the Corps has a set a goal of reusing 70% of dredged material for beneficial uses by 2030.

Reusing dredged material excavated from the seafloor, river and lake bottoms is known as beneficial use of dredged material. Such uses include rebuilding barrier islands, fish and wildlife habitat creation and restoration, beach nourishment, landfill cover, human recreation and land site remediation. Beneficial use of dredged material in a harbor can have a significant impact on improving the condition of the harbor while also alleviating existing demand for development and use of new disposal sites.

In FY23, 66% of the overall federal dredging program totaling 107 projects incorporated the use of dredged material for beneficial purposes, compared to 59%, a total of 87 projects in FY22.

"The industry is recapitalizing its fleet of dredges and equipment and helping the Army Corps of Engineers meet its 70% goal of reusing dredge material for beneficial projects like shoreline stabilization, barrier island restoration and securing fish and wildlife habitat," Doyle said.

VOLVO PENTA



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VOLVO PENTA

Peter Duclos

Co-president, Gladding-Hearn Shipbuilding, Duclos Corporation

To start, will you please share your personal journey in the shipbuilding industry and what led you to your current role?

Gladding-Hearn Shipbuilding Inc. was started by Preston Gladding and Richard Hearn in mid-1955. My father, George Duclos, joined them as a minority partner in late 1955, and for $900 owned 20% of the company. Fast forward to 1984, my parents bought out the Gladding and Hearn families and formed Duclos Corporation. Gladding-Hearn was kept as a d/b/a trade name. My brother John joined the company in 1984 with a naval architecture degree from University of Michigan. I joined the company in 1987 with a mechanical engineering degree from UMass. Our sister Carol joined the company in 1999 with a MS degree in finance from Boston College. Although we each officially joined the company at different times, we all grew up immersed in the shipyard. Our Dad was very fond of saying, "We had shipyard for dinner every night."

Since 2000, the business has largely been run by John, Carol and me, and in 2010, the assets were officially transferred from my parents. We all worked at the company at various times as teenagers, including cleaning the office after hours. Between the three of us, we have done every job in the company. The transition from our parents running the company to our generation was a natural progression.

How would you describe your leadership philosophy?

We are all very much hands on and team-oriented. It's a small family business, so we need to have a full understanding of everything that goes on. The three of us have our areas of responsibility, but we work together as a team. We are involved from the initial customer contact, through design, project management, construction, trials and delivery. If there is an issue with one of our boats, whether it's a month old or 40 years old, John or I will usually get the first call and manage it from there.

Photo: Greg Trauthwein

Will you please give an overview of recently completed, active and upcoming projects, including both newbuild and repair?

We try to maintain a good mix of new construction and refit/repair work. We've been able to do this in the past three years. On the new build side, we are fortunate to have several pilot boats to build ranging in size from 40 to 70 feet for repeat customers. We also have a 35-meter catamaran ferry starting soon. We recently delivered our first crew transfer vessel (CTV) to the offshore wind market. On the refit side, we did a major overhaul on a 38-year-old steel ferry and two 19-year-old pilot boats.

Gladding-Hearn is known for its expertise in pilot boat, passenger vessel and now CTV construction. How did the company become a leader in these sectors? What are the hallmarks of a Gladding-Hearn-built vessel?

Regardless of the type of boat we are building, I think it comes down to good design, service and execution, and in each case looking after our customers' best interest.

A big part of our success is that we have long-term partnerships with designers Ray Hunt Design for our pilot boats and Incat Crowther for ferries. We have a full in-house engineering and naval architecture staff, but it's invaluable to bring in the expertise of both of these design firms. And it's also invaluable to have done so many projects together. This long-term relationship has allowed us to develop standard designs that can be customized for different customer requirements. Building small "custom" commercial vessels is very difficult. The expectation is that it will be perfect, and we only get one shot at it. This is not mass production like automobiles or airplanes where they build prototypes prior to production. We have to look for every opportunity to create flexible, standardize design details that we can use in many applications. Using standard design details, materials and components gives us confidence in performance, reliability, cost, weight, etc. In custom boat building there is always a balance between giving the customer what they want, developing new ideas/products and using tried and true details you can rely on.

As far as CTVs go, I would not say we or any other builder at this point is a clear leader. It's such a new market. We've only delivered one CTV; and while we are confident it will prove itself in time, it's still early days.

What are the biggest challenges currently facing Gladding-Hearn (or the U.S. shipbuilding industry in general), and how is your company addressing them?

The past four years have been extremely challenging. We successfully managed our way through COVID, when we were hit by inflation of material, labor and overhead costs. We are able to mitigate some of the effects of inflation because we have flexible, standardized design details. We also have a talented workforce.

Inflation has been real challenge. Consider that we are just now finishing boats that we priced two years ago. We are able to mitigate some of the effects of inflation because we have flexible, standardized design details. We order the major equipment much earlier in a project than before and we need to consider the cost of shipping when making purchases much more than ever before.

In addition, like many businesses, we have not been able

to grow our workforce as quickly as we would like. The learning curve for custom boat building is steep, so we continue to develop in-house training for our newer workers.

We have both short- and long-term solutions that aim to address workforce gaps. In the short term, we have used subcontractor labor companies to provide skilled trades people. In the long term, we are more aggressively reaching out to local trade schools, attending local job fairs etc. Trade schools are over-capacity in Massachusetts, but I am encouraged to see our state is investing to expand many of them across the Commonwealth. We created a dedicated welder training and testing center, and have a full-time certified welding trainer. We have also used other outside organizations for training and certification in other trades such as electrical and painting. With the help of a state of Massachusetts grant and a local community college, we've also invested in companywide workforce development. We have found that repair and refit work are also excellent training tools for new employees. Seeing the finished product before you have to create it from scratch is a great way to learn.

How has the shipbuilding industry changed since you first entered the business? And what has remained the same?

What hasn't changed is that Gladding-Hearn continues to build high performance, reliable commercial vessels. What has changed dramatically is the communication process to get to the end result. When I started in the business, the fax machine was a new invention. There were no cell phones, we didn't have email or the internet. We mailed or faxed letters, spoke on the phone and we got the job done. Today the capacity to communicate has increased thousands of times, especially in the past four years. Before 2020, we did not use Zoom or Teams. Today we may have two or three remote meetings a day without having to travel. We are never really out of the office when we can

Gladding-Hearn earlier this year delivered the first of two Chesapeake-class pilot boats undergoing a comprehensive refit for the Boston Pilots.

Gladding-Hearn Shipbuilding, Duclos Corporation

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communicate by phone, email, text or Teams. We have access to our server remotely to look at drawings, send and receive photos, research something on the internet, etc. It has really enhanced our customer service response.

Despite advances in technology in all aspects of the marine industry, custom boat building continues to require skilled people to complete the project. We are always looking for ways to improve efficiency with technology, but the actual production takes people. Therefore, one of our main focuses is on training our employees and making sure we have a safe workplace.

Regulatory oversight has become a much bigger part of every aspect of the business in the past 30 years. While the oversight adds a significant cost to running a business, much of the oversight has had positive impacts, especially regarding safety and environmental issues.

Another big change is the addition of a dedicated Quality Control department. This small, but mighty department has helped us improve our construction standards and the quality of our end product.

How is Gladding-Hearn investing—in people, facilities, etc.—to ensure future success?

We are always looking for opportunities to provide training and advancement opportunities for our employees as discussed above. We have made some recent investments in facilities. In 2020, we purchased a new plasma cutting machine. We have done plasma cutting in-house since 1998. The new plasma cutter provides more accuracy and has the ability to mark the plate. With the help of a MARAD small shipyard grant, we just replaced some inefficient bi-fold doors with sliding hanger type doors on one of our large fabrication buildings. We purchased a self-propelled yard transporter for small to mid-sized vessels. We also just completed a covered plate storge yard, so we can store plate out of the weather. All three investments will allow us to utilize our limited climate controlled internal space and our railway more efficiently.

What is your vision for Gladding-Hearn Shipbuilding in the next 5 to 10 years?

I don't see further expansion in the near future, rather continually improving our current operation. The new-build passenger vessel market has been very slow, but I am encouraged by recent enquires that this is changing. I also think we will continue to see companies opting for major overhauls and repowers given the increasing cost of new builds.

Gladding-Hearn is building a new 300-passenger, high-speed catamaran for Key West, Fla.-based Yankee Freedom, for passenger service between Key West and the Dry Tortugas National Park.

Incat Crowther

Column

Towboats, Tugs & Barges

AWO at 80:

Looking Back and Looking Forward on Safety, Security & Sustainability

By Kelly Teichman, executive chairman of the T&T Group of Companies, and AWO chairman of the board; **Patrick Sutton,** senior vice president of fleet development and strategy for American Commercial Barge Line, AWO vice chairman of the board

This year, AWO marks its 80th anniversary as the tugboat, towboat and barge industry's advocate, resource and united voice for safe, sustainable and efficient transportation on America's waterways, oceans and coasts. As we celebrate this milestone, we not only recognize and reflect on 80 years of advocacy for our industry as a key driver of the U.S. economy, but also 80 years of vital work as a safety and sustainability leader and security partner – protecting mariners, communities and our waterways from harm.

At a time when the men and women of America's essential workforce, the resiliency and sustainability of the global supply chain, and our nation's intensifying geopolitical rivalry with China are top of mind for Americans, marine transport's role in ensuring safer, more sustainable maritime commerce and a more secure United States is as vital as it has ever been. Over the past 80 years, led by member companies of all sizes operating in all regions of the country and all sectors of the industry, AWO has built a strong foundation of steady and ongoing progress in these areas, which positions us well to tackle the evolving safety, security and environmental priorities of the future.

Our industry's commitment to safety is rooted in our determination to build a culture of continuous improvement that goes above and beyond regulatory requirements. That culture led to the establishment of the Coast Guard- AWO Safety Partnership, now in its 29th year – a non-regulatory, data-driven, cooperative framework dedicated to advancing safety on the waterways. The partnership in turn laid the groundwork for Subchapter M, which raised the safety bar across our industry, and acknowledged important past progress by recog-

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Column
Towboats, Tugs & Barges

nizing the AWO Responsible Carrier Program as an accepted safety management system and focusing the Coast Guard's finite resources where they were needed most. And AWO's development of its Safety Statistics Reporting Program (SSRP) reinforced these milestones by creating a mechanism for our industry to continuously measure and benchmark our collective safety performance. The latest Coast Guard-AWO Annual Safety Report illustrates the results of these efforts, showing that in 2023, the towing industry recorded its second-lowest crew fatality rate in nearly thirty years.

Building on these results for the future will require focusing our safety work on forging and strengthening partnerships, facilitating the safe flow of commerce on our waterways, and continuing to expand mariner safety efforts beyond preventing job-related injuries. AWO's ongoing work with the Oil Companies International Marine Forum to apply our experience with SubM to OCIMF's SIRE program, and with the Maritime Administration to apply knowledge gained from the SSRP to MARAD's near-miss-reporting framework; our collaboration with the Coast Guard and Army Corps of Engineers to ensure safe and efficient navigation during hurricanes, low water, and other weather events; our newly-established AWO Bridge Event Recording Program to identify and address issues with bridges on the inland river system; and our efforts to improve mariner mental health and continue providing work environments safe from sexual assault and sexual harassment, are all major areas of safety focus for AWO moving forward.

Through AWO, our industry has also played a key role in protecting our national and homeland security. Our work over several decades educating policymakers on the security benefits of the Jones Act – as an indispensable asset in maintaining American control over our domestic supply chain; as a force multiplier that ensures a pipeline of qualified American mariners to support military sealift operations; and as a safeguard against foreign operators navigating on our domestic waterways and further complicating the Coast Guard's homeland security mission – has resulted in consistently strong, bipartisan support for this vital law. Alongside our Jones Act advocacy, AWO has also fought for thoughtful, risk-based policies that strengthen maritime security while prudently allocating finite government and industry resources, whether through Coast Guard approval of the industry-developed AWO Alternate Security Program, or introduction of a TSA online renewal process for TWIC holders to eliminate the need for mariners to travel to renew a TWIC.

Looking forward, among our country's most prominent national security challenges will be China's maritime expansionism, which will require a strong American maritime industrial base to act as a counterweight. This means expanding support for the Jones Act and educating the next generation of policymakers on the law's importance will remain critically important. And as the marine transportation system continues to be targeted by increasingly sophisticated and high-impact cyberattacks, AWO will be sharply focused on ensuring that vessel operators are well prepared and working closely with the Coast Guard to address these threats, as well as advocating for practical, risk-based regulations that recognize one size does not fit all.

As we have focused on making our industry safer and our nation more secure, AWO and its members have also led key efforts to continuously improve our environmental performance and bring our industry's perspective and expertise to the global discourse on sustainability. Publication of AWO's Environmental Stewardship Best Practices set a high bar for sustainability across our industry; and the Coast Guard-AWO Safety Partnership has not only yielded positive results in mariner safety, but has also led to a significant decrease in oil spills over time, with 2023 marking the fourth-lowest tank barge oil spill rate since 1995.

Meanwhile, looking to the future, AWO's CEO Sustainability Task Force has charted a visionary course for engaging policymakers and the public on sustainability. The task force's recommendations include effectively telling our industry's positive sustainability story, emphasizing our environmental advantages over other modes of freight transport; and advocating for policies that encourage demand for marine transportation, secure investment in waterways infrastructure to reduce congestion, and prevent adoption of regulatory patchworks or infeasible requirements that would harm the efficiency and resiliency of the marine transportation system, while supporting companies in innovating and investing to further improve the sustainability of their operations.

For decades, the American tugboat, towboat and barge industry has been an outsized contributor in safety, security and sustainability while delivering prosperity to our nation. Guided by our diverse and dynamic membership, AWO looks forward to navigating the challenges and seizing the opportunities of the next 80 years.

Column

Shipbuilding

Has U.S. Shipbuilding Reached an 'Atlas Shrugged' Moment?

By Robert Kunkel, President, Alternative Marine Technologies & First Harvest Navigation

Each year, as we prepare for the largest U.S. based maritime industry conference in New Orleans, we tend to look back on the state of the industry and initiatives that were announced from the conference that took place the year before. 2023 provided us with plenty to talk about. In September of 2023, while the International Maritime Organization (IMO) and the global shipbuilding industry were fixated on "emissions" and alternative fuels, U.S. Secretary of the Navy Carlos Del Toro held the opening meeting of the Government Shipbuilders Council. Announced with a new tag line of "Maritime Statecraft", the GSC was created to address American ship acquisition, fleet maintenance, government spending and strategic development as a response to a recognized reduction in the nation's maritime power. There is confusion, however, about whether the action was developed to propel military or commercial vessel construction.

U.S. warship builders are not suffering. At naval shipbuilder Ingalls, an award for six Arleigh Burke-class guided-missile destroyers was confirmed in 2023. With the Navy's decision to continue with the destroyer class, the yard's long-term order book is full into 2030. The Navy has also provided a $9.6 billion deal with Ingalls to keep the San Antonio amphibious fleet program alive despite previous contract cancelations. With 24 ships currently on order, the Mississippi yard has invested in large facility improvements and entered 600 trainees into its "shipbuilding training facility".

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Let's look at Austal, the latest entry into U.S. Naval shipbuilding. Passing on comments about the LCS class construction, Austal USA is now busier than any time in its history with 23 vessels on order and a roughly $450 million dollar facility upgrade. National Steel and Shipbuilding Company (NASSCO) in San Diego—a U.S. yard no longer completing commercial construction—recently won a $6.7 billion contract to build eight T-AO205 fleet replenishment oilers. Considering the Newport News and Electric Boat "niche" we will stop the short list here. Our shipyard capacity for naval construction can be counted on one hand, and it's booked.

The mainstream media reports indicate a Rip Van Winkle wake up call. China has contracted more than 2,000 new buildings in 2024 alone, including both commercial and military vessels. Most of the tonnage coming out of China is large containerships and liquefied natural gas (LNG) carriers, and at levels never before experienced. More importantly, much of this tonnage is capable of dual use to support military activity and increase a country's energy potential. The numbers for the U.S. orderbook (both military and commercial) fall well behind that claim. We are well short of commercial capability and significantly below "war capacity".

With the maritime statecraft initiative, SECNAV Del Toro has considered partnerships with key foreign shipbuilders, yet none of the Navy contracts above involve a foreign entity or equipment. A recent visit and photo opportunity at Hyundai, South Korea praised the technology and ability of the largest shipyard in the world. Following that report and SECNAV's foreign shipyard investment request, we read Hanwha agreed to purchase Philly Shipyard in a $100 million offer.

The foreign technologies and precision processes discussed in the SECNAV attendance reports have been available in South Korea for over 30 years, and more importantly, have been used to develop commercial shipbuilding, not military.

Column
Shipbuilding

Rarely do we hear reports of South Korea's military deliveries or contracts. Global capacity concerns are not limited to the U.S industry. South Korea is also concerned with the rise of Chinese commercial shipbuilding to levels never before witnessed. With that, they are looking at opportunities outside of Korea, and the level of contract price of both domestic and military construction in the United States is a target.

With all the Navy fanfare, understand that foreign "ownership", collaboration and partnership has been available in U.S. shipyards for decades. Hyundai, DSME, Keppel, Samsung, Austal and Fincantierri all operate within the existing commercial yards in some fashion of purchase or legal collaboration. Our inability to compete globally reaches far beyond a foreign partner, and truth be told their involvement has not worked to lower the cost of U.S. building to date. In fact, it continues to rise to levels that are becoming unhealthy and will affect domestic markets from energy to household goods.

The problem is not the cost of labor. It is our inability to build infrastructure that supports ship manufacturing. And with that, the path forward needs to be a fresh start with greenfield locations and new technology in commercial shipyards surrounded by a manufacturing base that supports the effort. Importing equipment and material needed to complete the "build" is one of the simplest issues of "cost". If you analyze the South Korean model and have attended their major shipyards, you will understand they are surrounded by a manufacturing base from propulsion engine to pipe, nuts and bolts. This unlocks a logistical cost savings that works toward their competitiveness. China has multiplied that model by 10. And make no mistake, the Maersks and COSCOs of the world build 23,000 TEU containerships with the understanding that U.S. manufacturing has not recovered and imports will grow.

We are seeing interest from American technology and investment capital as we address questions from investors asking if we can move ship manufacturing to a "Space X" model. Is it possible to 3D print a vessel or provide new technology to redefine "ship manufacturing"? Can we move toward a full production line similar to the auto industry? Can this manufacturing process be operated by robotics to ease the reported labor shortages and train a new shipbuilding work force. The labor problems reported in U.S. shipyards also exist elsewhere. Korea, Japan and Europe are experiencing the same labor shortages. It is a generational problem and can only be solved by offering new job descriptions to meet the new generational digital and AI interests.

The pandemic and current geopolitical events of the past three years are driving many of these conversations. It ranges from terrorism in the Red Sea to military activity in the Far East. Similar geopolitical events influenced our shipbuilding base decades ago in Europe. We are writing this piece prior to the National elections, and the results of that election will affect many of these future decisions. That said, SECNAV needs to look at history. I big part of our success in supporting Europe in World War II was building commercial tonnage to deliver fuel, supplies and troops.

We now recognize the U.S. flag no longer has that capability, and that is where the change must begin in a rebirth of commercial shipbuilding. Our success will be providing tonnage that is competitive in global markets, and it can begin along our coasts. Supporting the Navy with supplies is a market. Understanding the commodity requirements to rebuild our infrastructure and reestablish the manufacturing base is a market. The movement to alternative fuels, chemicals and energy is a market. To engage the Flag in those markets will require years and enormous private capital to reach global competitive levels. It is an investment that must be made now.

U.S. domestic shipping cannot be compared to global operations at this point in time. Our U.S. flag domestic container fleet has selected LNG propulsion as a transition fuel for the next 25 years. The latest Matson dual fuel LNG containership contract supports that decision. The LNG transition will continue with propulsion upgrades to existing tonnage, cargo authority modifications and a continued use of fossil fuels with energy savings devices employed to reduce emissions. The investment cost comparison at this time is simple: new construction cost, or cost to achieve life extension and remain competitive when entering those new markets until such a time when shipyard capacity and technology can be developed. Meanwhile, the foreign builders and fleets are chasing alternative fuels, and with that, new construction costs will climb as we understand that global fuel infrastructure is years away from support. Ask not if the Hyundais of the world will look to U.S. investment. Provide a future plan and U.S. technology base that will demand their involvement to maintain their global position and give us a position of strength at the negotiating table.

It is called "Yankee Ingenuity", and it is time for our "Atlas Shrugged" moment.

Column
Green Tech

How Propane Can Help Ports Meet Emissions Goals

By Jim Bunsey, Director of Commercial Business Development, Propane Education & Research Council

Ports can't afford to slow down, and stricter environmental regulations and emissions standards are pushing port authorities to balance operational efficiency with reducing their carbon footprint. By replacing traditional gas and diesel as an energy source, propane can help ports reduce emissions and air pollution without sacrificing power or efficiency. Let's explore how.

Reduced emissions

Propane is nontoxic and won't contaminate soil or water. A byproduct of natural gas processing and sometimes crude oil refining, propane is recognized for its lower emissions profile compared to fuels like gas and diesel. In fact, propane is listed as an approved alternative fuel under the Clean Air Act. When used in engines to power port tractors, forklifts,

Propane Education & Research Council

light- and medium-duty vehicles, and more around port terminals, propane emits significantly fewer greenhouse gases, nitrogen oxides (NOx), and particulate matter than diesel and gas.

Here are some examples:

Propane port tractors

In terminal tractors and light-duty vehicles, propane produces 12% fewer greenhouse emissions than gasoline.

Terminal tractors produce 99% less particulate matter than diesel tractors.

Propane forklifts

Propane forklifts reduce greenhouse gas emissions by up to 16% compared with gasoline-fueled forklifts.

Propane forklifts produce up to 94% fewer nitrogen oxide (NOx) emissions than diesel.

Propane forklifts produce up to 76% fewer sulfur oxide (SOx) emissions than electric-powered forklifts when well-to-wheel emissions are considered.

Renewable propane

Propane is an even cleaner fuel source when made from renewable sources. Renewable propane is made from a variety of feedstocks, including camelina plant oil, vegetable oil, animal fats, used cooking oil, soybean oil, and animal tallow.

At the point of combustion, the carbon intensity score of renewable propane is four times lower than conventional propane and five times lower than diesel. In fact, it is net carbon neutral and does not contribute to elevated atmospheric carbon levels. Coupled with being affordable and efficient, renewable propane is helping ports meet environmental goals now.

Reliability and affordability

Propane's sustainability is only one part of the picture that port operators need to consider. Even the most environmentally friendly energy sources will fall flat if they are not reliable and affordable. Propane has a proven track record of reliability, used for decades across industries that cannot afford downtime. Propane is portable and can be stored on site without degrading over time, ensuring it is always accessible regardless of severe weather or power grid interruptions.

As domestic propane production continues to grow rapidly, prices are also expected to be consistently lower on average than gas and diesel prices. Propane can beat diesel on price per gallon by as much as 50%, and the U.S. produces more than enough propane to meet demand.

Propane: A path forward

As sustainability becomes a bigger focus for port authorities, and as environmental regulations continue to become more stringent and complex, a mix of various clean energy sources will be required. Propane can help to maintain port operations' efficiency and reliability, while meeting emissions standards. Propane is a clean-burning alternative to gasoline and diesel that can address energy challenges now and into the future.

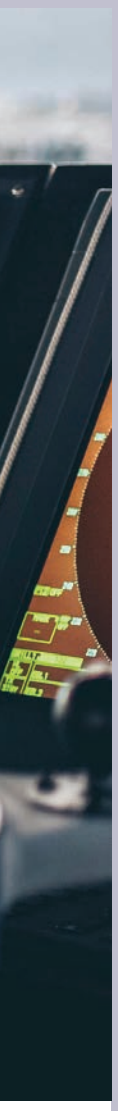
Propane Education & Research Council

Source: Ibrahim Boran / Pexels

THE DIGITAL REVOLUTION:

How Technology is Making Commercial Vessels Safer, Cleaner and More Efficient

By Rhonda Moniz



The maritime industry is witnessing a technological revolution that is fundamentally changing how ships operate, improving safe and efficient performance and reducing emissions, all to meet increasingly restrictive environmental standards. Adopting cutting-edge digital technologies enables ship owners and operators to optimize fleets, boost safe and efficient performance and reduce emissions while satisfying ever-developing environmentally beneficial requirements. Digitalization lies here and on the horizon of commercial vessel operations, the forward impetus of a new era characterized by enhanced, safe and efficient performance.

Predictive maintenance

One of the transformative and cutting-edge approaches in the digital revolution is the implementation of predictive maintenance systems. These systems – based on artificial intelligence (AI) – leverage sensor data from an onboard system to predict failures in equipment before they occur. With AI learning from hundreds of machine samples on average, it can analyze the trends of a particular metric over a specific time frame and then conclude the probability of a failure before it happens based on those samples. This approach reduces unplanned downtime and allows operations to avoid costly breakdowns. Not only does this save money, but it also makes a vessel safer by ensuring that vital systems don't fail. These systems are facilitated by the Internet of Things (IoT), which uses sophisticated sensors to monitor fuel consumption, engine performance, hull conditions and more. This type of predictive maintenance allows operators to tackle growing problems before they become full-blown issues, improving efficiency and safety in day-to-day operations.

Data-driven fleet optimization

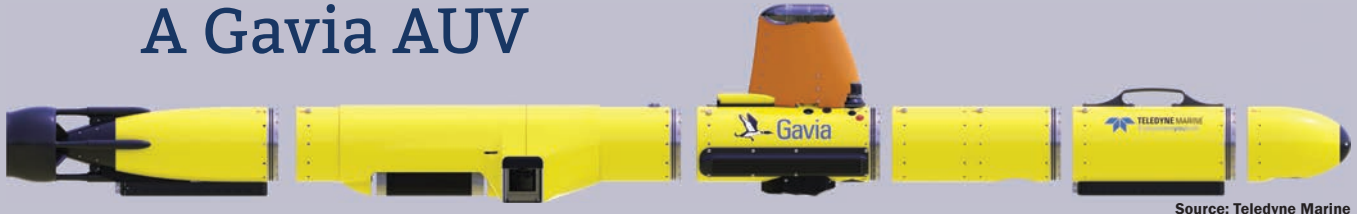
Data analytics is also reshaping the maritime sector. By collecting real-time data on vessels' performance, fuel efficiency and route optimization, operators can improve their fleet management and decision-making process. Data on fuel consumption and decision-making helps in route optimization, thereby saving both fuel and the impact of operations on the environment, which is critical as ships aim to bring down their movement-related greenhouse gas emissions. Examples include shipping companies already complying with two international regulations: the Carbon Intensity Indicator (CII) and the Energy Efficiency Existing Ship Index (EEXI). Additionally, a single point of contact through cloud-based platforms for data storage and analysis allows operators to maintain close control over entire fleets. Access to performance data from a central hub facilitates quicker, more informed onshore and onboard decision-making, boosting operational efficiency while simplifying regulatory compliance.

Uncrewed vessels and remote operations

Uncrewed vessels and remote operations have been and continue to be an integral part of the digital revolution in making commercial vessels safer, cleaner and more efficient. Interventions such as digital analysis and camera-based observations of ports are just the beginning. Autonomous ships and automated drone platforms serve a vital role and are constantly being refined with new advancements and innovations in technology. Multibeam echosounders mounted on board autonomous underwater vehicles (AUV) are at the forefront of digitization's impact on shipping and port security. This includes using these solutions to precisely map ports and waterways for safe navigation in increasingly congested shipping areas. These systems are ever more critical in detecting and mapping hazards along shipping routes and in congested harbors. AUVs provide real-time surveillance capabilities, such as scanning for submerged threats, including unauthorized vessels or explosives, and provide high-resolution images of underwater infrastructure and bathymetric mapping data.

One of the companies leading the way in using underwater drones to support the digitalization of the shipping

A Gavia AUV



Source: Teledyne Marine

industry is Teledyne Marine. "We offer a full spectrum of sea and subsea technologies for maritime and shipping applications," said Arnar Steingrimsson, vice president of sales, marine vehicles, Teledyne Marine. "An example is our series of Teledyne RESON SeaBat multibeam echosounders fitted on our Gavia AUV and Z boat USV [uncrewed surface vessel] systems. These provide accurate seafloor mapping with high-resolution data vital to improving port safety. Cost-effective, accurate, timely hydrographic data collection ensures greater navigational safety and threat detection for increasingly dynamic port security efforts."

Teledyne Marine recently acquired ChartWorld, a leading worldwide supplier of digital navigation systems and ECDIS [Electronic Chart Display and Information System] solutions. "This will provide the shipping industry with enhanced capabilities for the operation and efficiency of their business and improved compliance with ever-changing regulatory requirements," Steingrimsson said.

Sustainability through digital solutions

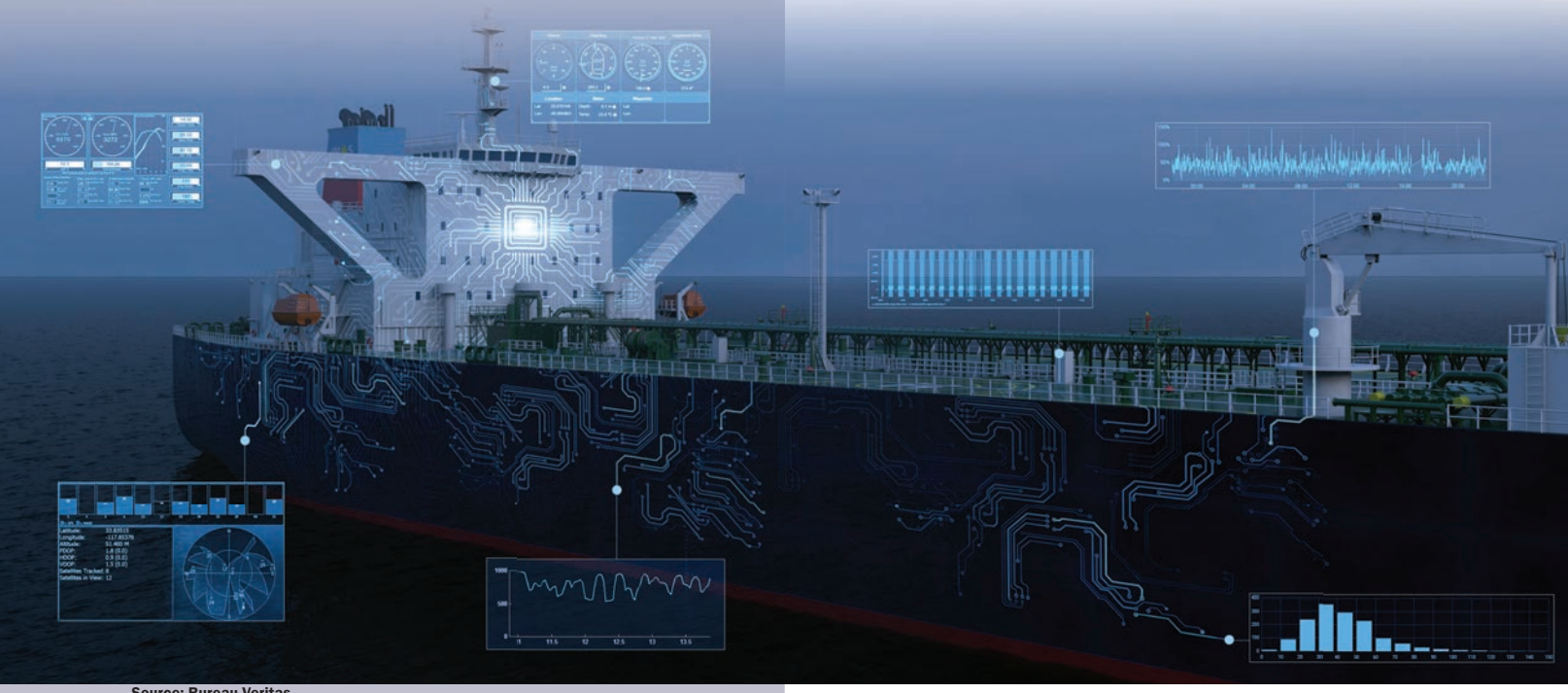
Digitalization plays a vital role in reducing the carbon footprint of shipping. Its primary contribution to sustainability lies in optimizing fuel consumption through real-time data on vessel speed, fuel usage and weather conditions. This approach helps minimize fuel consumption and emissions at any given moment.

Advanced emissions monitoring systems provide real-time feedback on greenhouse gas outputs during operations, enabling operators to adjust their routes to avoid exceeding regulatory limits. By leveraging digital solutions, shipowners and operators can effectively address global decarbonization goals. With new regulations in place requiring reduced shipping emissions, these digital tools allow operators to track emissions and enhance fuel efficiency.

Blockchain and cybersecurity

Digital systems are becoming an increasingly integral part of vessel operations, and blockchain is proving to be a critical tool in delivering a more transparent and secure maritime supply chain. Unlike paper documents, where original records can be lost, altered or falsified, blockchain technology has been proven to withstand tampering attempts. It provides a web-like ledger of transactions that can be securely maintained and updated so that the integrity of the underlying data remains uncompromised – an invaluable quality across various industries where reliable record-keeping is paramount for operational performance.

However, cybersecurity is a growing risk in the digita-



Source: Bureau Veritas

lization of vessels. The need for greater connectivity also increases the likelihood of piracy and potential cyberattacks that could impede communication, endanger crew members and property, or steal sensitive data from the correlated digital infrastructure. For this reason, shipping and logistics companies are investing in modern cybersecurity technologies and practices for cyber security to defend against potentially disruptive cyberattacks.

Embracing the digital future

Ship operations are at the cutting edge of a digital transformation that promises to reshape commercial shipping operations. Focusing on safety, environmental performance and efficiency, maritime digitalization encompasses a wide range of digital innovations to make operations safer and greener and to drive whole-fleet optimization – from optimizing cargo and crewing to increasing asset utilization using predictive maintenance to using onboard and digital ship-to-shore applications to improve remote operations and various sustainability initiatives.

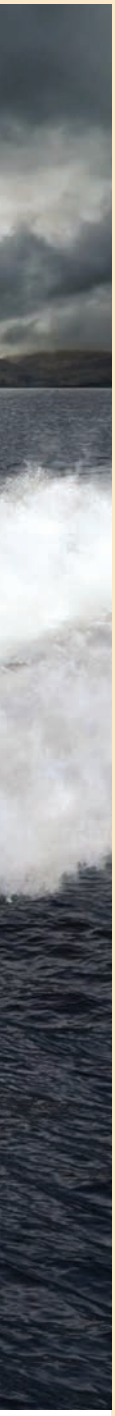
Laurent Hentges, Vice President – Digital Solutions & Transformation at Bureau Veritas Marine & Offshore, talks about embracing digital technology with clients, "Bureau Veritas supports maritime stakeholders in embracing digital technologies that enhance safety, efficiency, and sustainability. Our digital classification framework — featuring 3D Classification, Remote and Augmented Surveys, and Predictive Schemes — uses the power of data, digital twins, and AI to enhance safety, reduce costs, and optimize asset monitoring. Our MOVE platform enables digital collaboration with our clients and partners to simplify operations and enable quick, informed asset compliance and performance decisions. Through partnerships like OrbitMI, we provide data-driven solutions with insights that streamline operations and reduce the industry's carbon impact, facilitating the sector to thrive in the evolving digital landscape."

The future of digital shipping has never looked brighter. With the extensive embedding of cutting-edge technologies set to continue, we can expect digitalization to propel sustainably stronger safety and efficiency performance that complements the global roll-out of green shipping. In a world where supply chains are more crucial than ever, the maritime sector's maritime tech ethos shows that the way forward to achieving new levels of operational performance lies firmly in the power of digitalization.

All images in this article courtesy Eureka Naval Craft

Eureka Naval Craft is Adapting High-speed AIRCAT Surface Effect Ships for Military Missions

By Edward Lundquist



Eureka Naval Craft is introducing its suite of high-speed AIRCAT (air cushion catamarans) surface effect ships (SES), already in use with the offshore energy industry, to the defense market.

According to Bo Jardine, CEO of Eureka Naval Craft, a newly formed U.S.-based naval defense company, the versatile suite of AIRCAT naval vessels can serve as a patrol craft, rescue craft, medical evacuation vessels, heavily armed small combatants and landing craft.

The AIRCAT SES has both an air cushion, like a hovercraft, and twin hulls like a catamaran.

Eureka's AIRCAT Bengal variant is a military version of the proven commercial AIRCAT 35 Combi, with the same hull as the AIRCAT 35 Crewliner as designed by their partner ESNA Naval Architects. These commercial vessels are in use supporting the offshore energy business, including oil and gas as well as wind operations.

"Working in the offshore business, I learned about the importance of a fast and stable platform to get our crews and equipment out to the rigs quickly, safely and comfortably," Jardine said. "We've taken the commercial AIRCAT design, turned it gray and brought it into defense."

The advantages of such a craft for the offshore energy industries are the same advantages the military wants: higher speed to weight ratio; lower fuel consumption; lower emissions; and probably the most important, improved comfort. Comfort for people means better accuracy with weapon systems, less wear and tear on sensors, weapons and other sensitive payloads, and longer endurance for crews.

AIRCAT Bengal is well-deck capable and can be carried inside amphibious ships. They are also equipped with a full galley and can make their own water for extended sorties.

"Our AIRCAT Bengal combatant craft can cruise 38 knots for 1,000 nautical miles with a top speed of 47 to 50 knots, depending upon what we carry onboard, with seven to 21 days endurance," Jardine said. "They are manned with a crew of between five and seven, mission depending" and "can carry 22 personnel in comfort; and when I say in comfort, they are probably better accommodations than our Sailors and Marines are used to—practically everyone has their own bathroom. We can carry two 20-foot containers on the back deck, and they can be used for cargo, or payloads such as missiles, mines, torpedoes, drones or mine countermeasure (MCM) systems."

The **AIRCAT** vessels feature deck space for containers, mission modules or cargo.

The commercial hull design is the same as the one the company is using for the defense version, and was evaluated extensively in model testing in Norway.

The design out-performed catamarans, trimarans, outrigger style hulls and even other surface effect ships in energy major evaluation and model testing, Jardine said.

"We are a U.S. company," Jardine said. "The first three AIRCAT commercial vessels are being built in Singapore at Strategic Marine. We are going to license these defense designs out to shipyards globally. Ultimately, we hope to also build them at shipyards in the U.S., Europe and Asia."

Jardine said the vessels can easily be built at a number of different tier 2 and 3 shipyards in the U.S. and abroad. "We could scale up with a number of yards to build them quickly and in large numbers."

The vessels are completely non-ITAR, although the combat systems—sensors, weapons, communications and integration—placed on board by defense OEMs may, themselves, have ITAR restrictions. (The International Traffic in Arms Regulations (ITAR) are regulations established by the U.S. Department of State that govern the export of defense and military technologies. Their primary purpose is to protect national security and promote foreign policy goals.)

"We have collaborated with many global defense OEMs on a full range of systems that can be installed and integrated by these OEMs, to include guns, drones, missiles, anti-submarine warfare (ASW) weapons and soft-kill systems," Jardine said. "AIRCAT Bengals can also be equipped with radar and optronic sensors which can provide remote targeting for other ships and aircraft."

"We have the margin to bring on new combat capabilities as they are developed," Jardine said.

SES evolution

Over the years there have been issues with SES vessels, such as problematic lift fans and difficult skirt replacements. Jardine said there has been an evolution with SES vessels. "We now have much more reliable lift fan system, as well as an activated damper system. We can now replace the skirts with the boat in the water. We don't need to go into a dry dock to do this type of work."

There is a high degree of automation. "These vessels are more or less like fly by wire on water," he said. "I say that because we essentially have computer controls to run things that used to take four people to do when the SES first came out. It's a smart system where it automatically varies the air bag to the conditions, which increases the reliability and improves the ride characteristics."

Jardine said the boat runs very smoothly at 47 knots. "It has great performance. And this is a real-world boat; not a concept or a PowerPoint presentation."

The computerized ride control system uses high-speed actuators to correct changes in pitch and heave. The active dampers reduce vertical acceleration significantly.

"When it goes on cushion, it takes out the motion," Jardine said. "For weapons and things like that, it makes a big difference, just like it does for people."

The system is in use now in the offshore wind business for crew transfer vessels (CTV) and very soon will begin service in oil and gas, where customers value reduction in motion for a safer, smoother ride. "In some sea environments you have rough seas, and moving people to and from platforms and rigs encounters a lot of seasickness," Jardine

said. "This vessel has a huge reduction in cases of seasickness."

When translated to defense, it means a more stable platform for weapons, drones, counter-drone systems and other capabilities.

Jardine said the vessels can be optionally designed to operate without crews in an unmanned remote and/or autonomous mode.

"AIRCAT Bengal can be a terrific counter-drone platform, as well as a MEDEVAC vessel," Jardine said. "We can sail our vessel up on to the beach in a contested littoral area to pick up wounded personnel, provide care on board and quickly move the injured troops to a higher level of care. We can set up spaces for medical triage and treatment, and the doors and corridors are wide enough to accommodate a stokes litter."

SES is not a new technology. The U.S. Navy and Norway have a lot of experience with SES vessels, and the U.S. Coast Guard has also used them. "We think this kind of vessel is ideal for the Coast Guard's high-speed interdiction missions," Jardine said.

"Our craft are an evolution beyond the Norwegian Navy's Skjold-class corvettes. However, they have some of the same combat systems on board, including Rheinmetall's MASS naval self-defense system," Jardine said.

Eureka's defense vessels have similar SES hulls as the fully tested commercial hulls in service, and the company's commercial partner AIRCAT will soon unveil other commercial variants for use in offshore energy, including their AIRCAT 25 CrewLiner and AIRCAT 25 WindFarmer.

Eureka's vessels rely almost entirely on commercial-off-the-shelf systems which have existing OEM global support networks for parts or servicing. They are also highly customizable and can be outfitted in line with end user needs.

Eureka envisions making its vessel designs available for build in multiple shipyards to maximize production in a contingency, much like Andrew Jackson Higgins did with his landing craft and PT boats, which were built in very large numbers, during World War II. "Those boats were built quickly and efficiently, and they were based on proven commercial technology. We want to bring in the next generation of these types of vessels. We've taken our hulls and turned them into what I would call the modern-day equivalent of Higgin's PT boats and landing craft. We even have an autonomous variant than can operate with or without a crew." Jardine said. "Furthermore, our boats draw very little water and are highly maneuverable in shallow littoral waters and can go where rigid-hull inflatable boats (RHIB) operate."

Eureka's forming partners include AIRCAT Vessels of Bayonne, France; ESNA Naval Architects, Kristiansand, Norway; 1852 Solutions Ltd, Houston, Texas; and Trident Offshore Projects, Houston, Texas.

Naval Surface Effect Ships are not new

The U.S. Navy began its work on surface effect ships in 1960, commissioning the first SES test vessel, the XR-1 in 1963, followed by the XR-3 in 1967, and the XR-5 in 1973.

The U.S. Navy later operated the Bell SES 100A and SES 100B during the 1970s and '80s, the latter of which was capable of 91.9 knots and which also successfully launched and hit a surface target 6 miles away with a missile, all while traveling at 60 knots.

U.S. Navy SES 200 was acquired in 1984 for testing, and later transferred to the Coast Guard for evaluation.

After successful evaluation, the U.S. Coast Guard ordered three Bell Halter 110 SES cutters (WSES 2-4) comprised the Key West-based Coast Guard Surface Effect Ship Division, which was established in 1982 and operated until 1994. Between 1986 and 1994 these SES cutters accumulated more patrol hours per hull than any of the other class of cutter then in service with the U.S. Coast Guard.

Two 1,000-ton Navy Bora Class guided-missile corvettes were delivered to the Soviet Navy between 1989-2000. One still operates with Russia's Black Sea Fleet.

Nine ships of the Royal Norwegian Navy Oksay/Alta Class of mine-countermeasures ships were built in the mid-1990s. Four of these vessels are still in service.

The Norwegian Navy Skjold Class corvettes are capable of achieving speeds up to 60 knots. The first of six in the class was commissioning in 1999. These vessels are all still in service and have undergone life extensions/upgrades from 2022 to present.

Seven 200-ton Nongo Class fast guided-missile boats have been built by North Korea, first appearing in 2015, these SES vessels form the core of the modernized North Korean Navy. All are in active service.

Photo: Greg Trauthwein

‘IT’S IN OUR BLOOD!’

Left to right: **Julie Blount and Marcia Blount**

Blount Boats Celebrates *75 Years*

By Eric Haun

Seventy-five years in business is no small feat, especially in an industry that is tougher than most: shipbuilding. Blount Boats is celebrating the impressive milestone this year.

Established in 1949, the Warren, R.I. shipbuilder is led today by founder Luther H. Blount's daughters: president and CFO Marcia Blount and executive vice president / human resources Julie Blount, who see their roles as more than a career. "It's our vocation," Julie said. "It's in our blood!" the sisters said nearly simultaneously.

An entrepreneur and inventor by nature, Luther H. Blount formed Blount Boats after building a small twin hull raft built of 55-gallon drums used for transporting oyster and clam shells across Narragansett Bay, prompting requests to build larger steel vessels.

Luthor's first commercial build was a 77-foot steel catamaran, followed by a fuel oil service vessel using a similar design he called the "twin tube," featuring two cylindrical floats. This success led to the development of larger and more complex monohull vessels, and over time, the shipyard expanded.

Marcia and Julie became fully immersed at a young age. "We grew up right in the middle of the shipyard watching the boats being built," Marcia said. "Our garden was next to the shear shed."

"And not only that, but we took trips on boats that my father built for his leisure," Julie added. "We'd go out sword fishing, we would take trips up to Canada. We were on boats all the time. That was how we grew up."

Today, Blount Boats is a full-service shipyard offering design, newbuild and repair for vessels up to 220 feet in length. Its diverse customer base is comprised of a variety of commercial and government entities including private and public vessel operators.

To date, Blount Boats has delivered more than 379 hulls and counting, including passenger and vehicle ferries, stern trawlers, offshore supply vessels (OSV), dinner boats and small cruise vessels. In recent years Blount has built U.S. flagged crew transfer vessels (CTV) for the offshore wind sector.

Marcia emphasized Blount Boats' focus on quality, ingenuity and practicality. "We are famous for the quality of our boats," she said. "Our boats last for years and years, and the clients have very few issues with them. One reason for the quality of the vessels is that we have very skilled craftsmen that have been with us for many years."

Marcia and Julie highlighted the experience and expertise of their engineering department as one of the yard's strengths. This team includes their nephew, Luthor Blount, who is the third generation to work at Blount Boats.

"Our engineering department has designed vessels that we have actually run; we have actually operated vessels," Marcia said in reference to the value of hands-on experience in vessel operations.

Julie said, "Our engineering department works closely with our clients to help them understand what is truly needed to build a boat that functions well. And they give extremely good advice to possibly change some of the plans

After Luther Blount built his first boat, a 77' steel catamaran, he bid and won a job to construct a fuel oil service vessel using the same catamaran concept based on two cylindrical floats which he dubbed the "twin tube." This design was succeeded by a progression of larger and more complex vessels resulting in a quantum expansion of the shipyard.

One of the most famous vessels built at the shipyard was the 130-foot, 600-passenger Miss Liberty. Built in 1952, this boat carried over 60,000,000 passengers from Manhattan to the Statue of Liberty for the Circle Line.

In 1955, the "Blount 65" made its debut and was an immediate success with ferry, commuter and excursion operators. During the course of 50 plus years, the shipyard has built over forty 65' passenger vessels that have been delivered world-wide.

During the late 1950s, Blount designed the Botruc for the offshore oil and gas industry in Southern Louisana. The Botruc series, as the name implies, bears a strong resemblance to a standard pick-up truck with the cab forward and a cargo space behind the cab.

Images this page courtesy Blount Boats

to make the boat better."

The Blount team brings decades of experience and valuable expertise to their partnerships with clients. Their goal is always to build the best vessel possible. "It's a very collaborative effort with our clients. We have our own designs, and we also build from plans of naval architects. But we often modify some of those plans to make them more practical and workable," Marcia said. "Our men say there's the right way, the wrong way, and the Blount way. They believe they know how to build a good boat, and they're going to build it."

This approach has worked well for Blount Boats, even in the early days. "Often with my father, a client would come in and would tell my father what he wanted, and then my father would stop him and say, 'Well, what's the run of this boat? Where is she going? How fast do you want to get there?' And then my father said, 'Well, this is the boat that I'm going to build for you.'" Marcia said. "'This is what you need.'"

In the end, the vessels that are built are distinctively Blount. "Because we've been around so long, there are a lot of people that are familiar with and have operated our boats. And what they always say is that [our boat] was their favorite to operate and how it was definitely a Blount boat," Julie said. "That's a testament to the type of boat that we build."

"People often comment that we're synonymous with quality, longevity and low maintenance," Marcia added.

Drawing on decades of experience, Blount Boats skillfully combines proven design and shipbuilding practices with a trailblazing approach. "My father was really open to innovation," Marcia said.

"Over the years, [my father] designed and built some iconic boats that actually launched industries in themselves," Julie said. "For the fishing industry, for the offshore gas and oil business down in the Gulf, the dinner boat business, the small cruise boats—boats that really changed the way things happened."

Luthur passed away in 2006, but Marcia and Julie have continued to lead the company with their father's spirit, always with an eye on new horizons. "We look for opportunities the same way my father would," Marcia said.

Blount Boats was the first shipyard to construct a purpose-built CTV for the emerging U.S. offshore wind sector, and it has since built several more. The company is preparing to deliver its next CTV in the coming weeks.

As technologies evolve, Blount Boats is exploring opportunities in areas such as alternative fuels and uncrewed and autonomous vessels.

"We're carrying on my father's legacy," Marcia said.

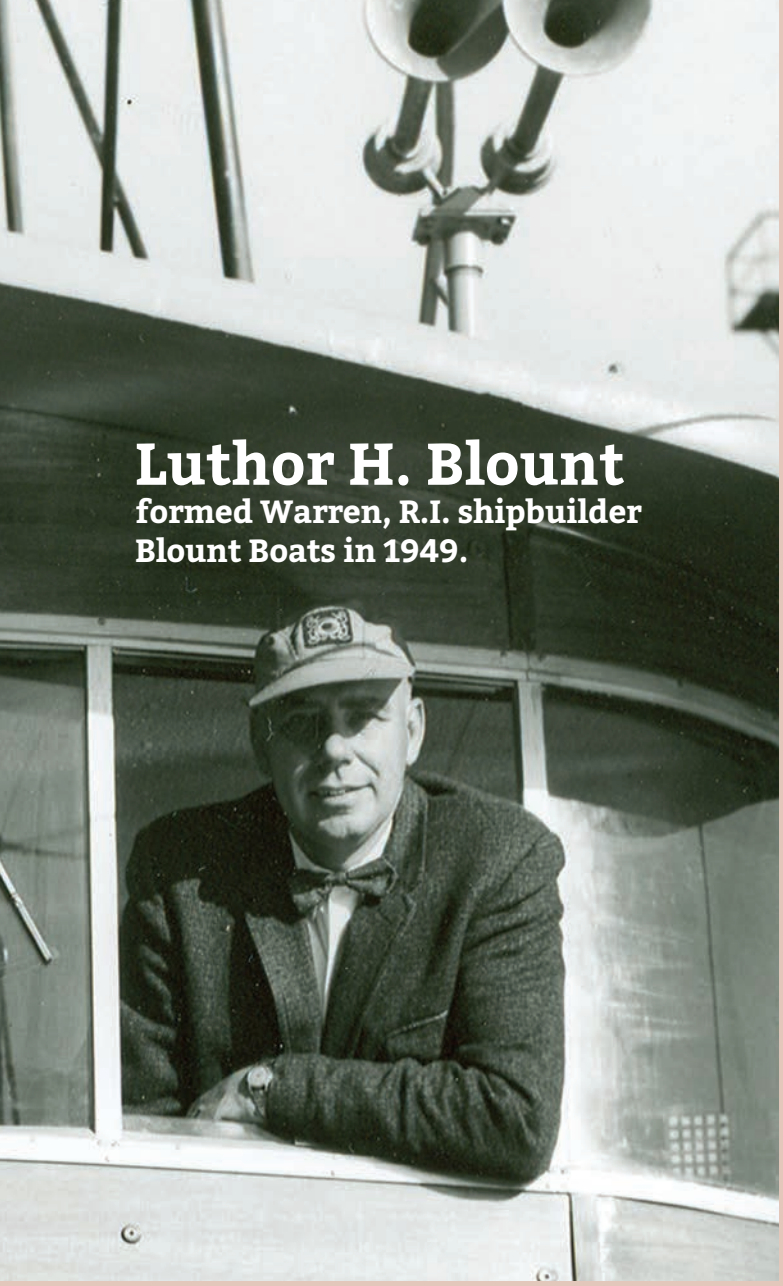
Blount designed and built America's first commercial stern trawler, the Narragansett, in 1962 with the goal to enter the New England fishing industry market.

In the 1970s Blount designed and built offshore supply vessels for the U.S. oil industry. The largest of these vessels at 192 feet long were equipped to carry 3,900 cubic feet of drilling mud in six tanks, 350,000 gallons of drill water and had a deck cargo of 640 long tons.

The Le Bateau dinner boat, built in 1972, is believed to be the first to operate in the U.S., launching the excursion dinner boat segment of the cruise industry in America. During the 1980s, a group of "Spirit Class" dinner boats were constructed with three decks designed for cruising major U.S. harbors.

In the 1990s, three small ship cruise vessels, each carrying up to 100 overnight guests, were built for Blount family sister company, Blount Small Ship Adventures (BSSA), a niche cruise operator. Blount designed and engineered retractable pilot houses to permit low bridge clearance, bow ramps to allow beach landings, and glass bottom boats.

Images this spread courtesy Blount Boats



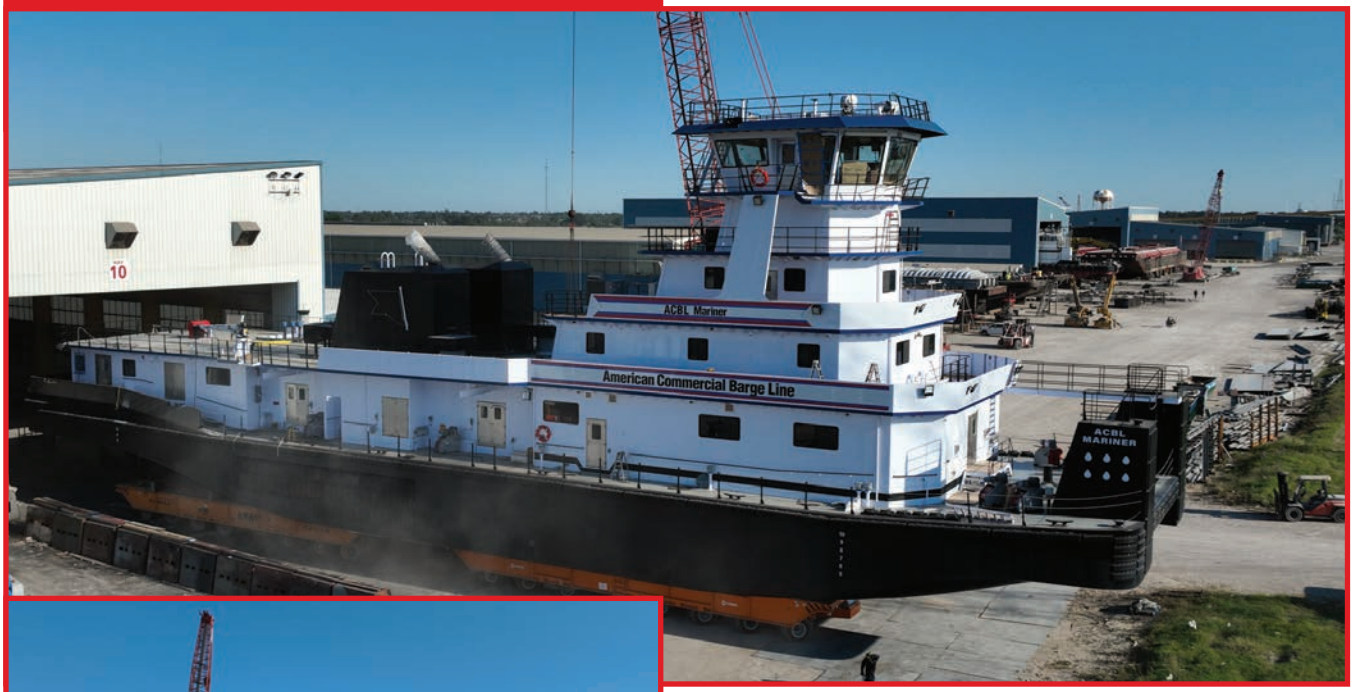
Luthor H. Blount
formed Warren, R.I. shipbuilder Blount Boats in 1949.

In 2016, Blount completed Atlantic Pioneer, the first U.S. flagged CTV for Atlantic Wind Transfers to service the U.S. offshore wind industry.

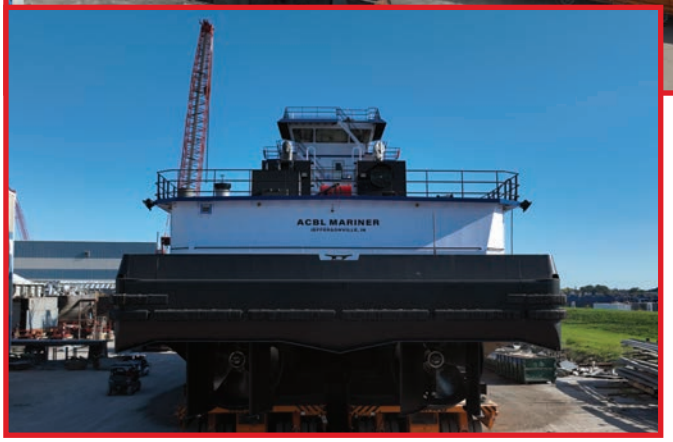
Gripper is a 30-meter CTV delivered earlier this year to service Orsted and Eversource offshore wind projects.

Top Vessels

ACBL Mariner



ACBL



ACBL

Jeffersonville, Ind. based American Commercial Barge Line (ACBL) is gearing up to welcome its new flagship, the mighty 11,000-horsepower (HP) towboat ACBL Mariner. The vessel will be christened during a ceremony in New Orleans this November.

Designed by Portland, Maine-based CT Marine and built by Belle Chasse, La. shipyard C&C Marine and Repair, the twin-screw towboat measures 200 feet long, with 54-foot beam and 11-foot operating draft.

The new towboat adds considerable pushing power to the ACBL fleet, running on two Louisiana CAT-supplied Caterpillar C280-12 main engines that together produce approximately 11,000 HP. The engines are paired with two Reintjes WAF 6755 reduction gears from Karl Senner, LLC, while generator power comes from three Caterpillar 275-kilowatt (kW) generators. The towboat is outfitted with CT Marine CT28-SL nozzles housing 124-inch diameter stainless-steel, five-blade fixed pitch propellers (the industry's largest) and features Twin-DIFF flanking and steering rudder systems.

"To have this much horsepower with only two engines and still be able to push the largest tows in the industry, that's a huge advantage because it brings the operational cost down," said Randy Chamness, ACBL's vice president of vessel operations. "In an era where there's intense focus on cost, the unitized cost is looked at much differently. And when you look at it at cost per ton mile and cost per operating hour, there's no vessel in the industry that will be able to match what this boat will be able to produce for what it's going to cost to operate."

Upon entry into service, the newbuild will operate on ACBL's mainline network with the capability to push approximately 75,000 tons of cargo. It will push up to 46 loaded barges southbound and 56 barges northbound, and later

on, ACBL plans to expand the northbound tows to 64 barges under the right navigational conditions, Chamness said.

ACBL Mariner marks a pivot from what has been the industry norm over the last decade or so: towboats in the 6,000-horsepower range with Z-drives used for mainline operations.

"ACBL thought outside the box here," Chamness said. "We need ultimate productivity, but we also have to have efficiency to go along with it; and some have thought you just can't do that with a high horsepower boat. . . ACBL Mariner is going to prove that you absolutely can have maximum productivity and efficiency. When you break that down into cost per operating mile, I think this boat would be unchallenged by any other in the industry."

"When comparing this 11,000 HP class towboat to smaller 6,000 HP class towboats frequently used for mainline operations, this larger horsepower vessel will increase efficiency by 20% or more on both a cost per ton mile and CO2 emission per ton mile basis due to the increase in tow size and tonnage capacity," said Patrick Sutton, ACBL senior vice president of fleet development and strategy. "Our investment in this new towboat not only benefits our customers but also reflects our commitment to promoting a more sustainable and low-carbon future for our marine supply chain."

ACBL Mariner also features the "latest and greatest" in vessel monitoring technology, which allows ACBL to both enhance operational efficiency in real time and optimally plan preventative maintenance before issues arise—a "game-changer", according to Chamness.

"We are investing in our future by building on the strength of our industry-leading mainline operations. The addition of this new towboat is an example of our continuous efforts to modernize ACBL's fleet and offer more innovative marine transportation solutions to our customers," said ACBL's CEO Mike Ellis. "Not only is this boat high-powered and highly capable, but it will also feature all the latest innovations in technology, crew comfort, safety and efficiency."

The barging industry, just like many others, has struggled to recruit and retain the workforce it needs. To recruit crews effectively, "you have to have and offer the same level of [onboard] crew comforts and modern amenities that you would have at home," Chamness said. "This boat does that better than any other that I've seen. So, it's easy to recruit people to work on a boat like this."

With accommodations for a crew of up to 12, the vessel incorporates a floating, spring-mounted superstructure for additional onboard comfort. Its pilothouse eyeline will be 47 feet above the water.

Tony Cibilich, president of C&C Marine and Repair—one of the nation's leading builders of towboats, sees the ACBL Mariner as a trendsetter. "This vessel is the first of several that we hope to construct, as there is a need for vessels with this kind of horsepower in the market," Cibilich said. "We are proud to lead this project and know that it will contribute greatly to both ACBL's customers and the capacity of the inland shipping industry once in operation."

Top Vessels

Vaneta Marie

DSC Dredge

Muddy Water Dredging's new cutter suction dredge (CSD) Vaneta Marie "represents the future of dredging technology", according to Bill Wetta, senior vice president, and chief technology officer of DSC Dredge, the Reserve, La. based company that built the dredge.

Christened during a ceremony in New Orleans earlier this year, Vaneta Marie is a fully customized Marlin Class dredge that measures 371 feet long, making it one of the longest in its category.

Boasting the capability to dredge a 400-foot-wide cut with an 80-degree swing arc, it sets a new standard for operational efficiency, enhancing productivity by 5.9%. Furthermore, its customizable design features a detachable carriage barge, enabling seamless adaptation to various working environments.

"Vaneta Marie was specifically built for a certain set of projects in the Gulf Coast area, primarily the Calcasieu River, although it will actually work from Galveston all the way to Pensacola," Wetta said. The dredge will perform "mostly navigational maintenance-type work, where material is not that deep, but it tends to be more in the corners of the channel, where movement becomes really important."

"[Muddy Water Dredging] wanted to be able to dig depths to the new Panamax ships. This dredge can dig pretty deep, so it could actually dig container ports that went as deep as Panamax vessels."

With Vaneta Marie, the DSC team was able to match "unparalleled performance with forward-thinking designs", Wetta said. Notably, the dredge features DSC's survey-grade DSC VISION package and Dredge Rx remote monitoring system for enhanced precision and performance.

"DSC Vision is a multi-beam sonar that's attached to the dredge, and sonars typically don't really work unless there's movement. . . We use the motion of the dredge to create the motion for the sonar. So we're actually looking at a line perpendicular to the center of the dredge, maybe 100 feet forward of where the cutter head is, and all the way back behind where the ladder pivots at the trunnion. We look at that line, and as the dredge pivots from left to right, that line becomes a plane and it paints what the bottom looks like.

"When an operator shows up on a Corps job, before they start digging, they can make a pass to the left and a pass to the right, and basically, they can see everything on the bottom, real time, that's in front of them and behind them and they know if the job that they're going on even resembles what the plan was. Then as they start digging, it's real-time updating so they can see the changes they're making in the channel. They can also see what's caving in behind them. So, if the dredge advanced a hundred feet and the whole bank caved in, they would be able to see that real-time, back up and fix that, rather than having to wait for a survey crew to come on board."

Sometimes advanced technologies can complicate operations, but Wetta stressed that's not the case with Vaneta Marie. "There are a lot of computers on the dredge, and for traditional dredge operators, that can be scary," he said. "But when you sit in the chair of the dredge, there's basically two screens and eight buttons. One screen looks like a video game, and that's DSC Vision: a rendering of what the bottom looks like in a 3D-colored map. The other side [are the] gauges that the operator looks at to control the dredge. The operator doesn't have to be aware of everything around him [as that's] handled with the automation system. If there is a problem, he and the chief engineer will be notified."

Another standout feature of the Vaneta Marie is its dual diesel-electric power package, delivering 9,621-horsepower of total installed horsepower. "The [Wabtec] engines are the only in this class that can be [EPA] Tier 4 without a bunch of post-treatment or diesel exhaust fluid," Wetta said. "Looking at the exhaust, it's pretty clear you don't get any black smoke with the engines. It sips fuel compared to some of the higher speed engines."

The diesel-electric setup also unlocks other capabilities. "Because it's diesel-electric, can take power from the grid; so this machine could run strictly off of an umbilical cord. It's also designed, because we're in a hurricane area, where we can export the power off these engines in a disaster event, and we could power a city or a plant. So, it's basically an eight-megawatt power plant that becomes a dredge."

Top Vessels

eWolf

Port of San Diego

Crowley Maritime Corporation's eWolf is an innovative harbor tug that stands out as the first fully electric tugboat in its fleet and the first of its kind in the United States. Unlike traditional tugs powered by diesel engines, eWolf operates entirely on batteries, producing zero emissions and minimal noise.

As regulations tighten and environmental concerns rise, the maritime industry is increasingly investing in cleaner technologies. Crowley's drive to develop an electric tug began amid global developments in electric propulsion, "When we started this journey, the concept of an electric tug was just starting to kick off," said Paul Manzi, vice president of ship assist and escort at Crowley. "There was some work going on in New Zealand and in Europe, and we began to think it was possible to do it here as well."

In 2021, as part of its commitment to achieve net-zero emissions by 2050, Crowley's engineering division unveiled the eWolf design. The company partnered with ABB as the systems integrator and engaged Master Boat Builders in Alabama to construct the vessel.

The 82-foot-long eWolf is designed to meet ABS class standards and U.S. Coast Guard Subchapter M regulations. It was officially delivered in January 2024 and traveled from Alabama to San Diego under its own power, where it is now stationed at the Tenth Avenue Marine Terminal.

Externally, eWolf resembles a conventional tug, but its interior is a technological leap. "A tug is a tug in a lot of ways," said Garrett Rice, president at Master Boat Builders. "The eWolf's hull and structure are very similar to those of some other tugs we've built and we'll continue to build. But once we got into the outfitting stage, everything changed real quick."

While electrical systems are not new to commercial vessels, installing them in a compact tug like eWolf presented unique challenges due to limited space for high-voltage cables and components, Rice added.

eWolf features an integrated electrical propulsion system by ABB, a 6.2 MWh Orca battery energy storage system, two 2,100 kW RAMME motors, and Schottel azimuthing thrusters. Emergency generators are also included for added reliability.

Bruce Strupp, vice president of marine systems for U.S. and Canada at ABB Marine & Ports, described the key pieces of technology that are core to an ABB solution

for hybrid and zero-emission vessels. "The first is our Onboard DC Grid architecture. All the power sources integrate into the Onboard DC Grid, which distributes them to all the consumers throughout the vessel," he said. "Our DC grid is a closed-bus configuration because it allows for more operational redundancy and safety for the vessel.

"The architecture that layers on top of that is the automation system, our Power and Energy Management System (PEMS). It basically controls the flow of all the power feeding into the DC grid, and then also all the power that's swung to all the consumers," Strupp said.

The project proved to be a valuable learning experience for all involved, emphasizing the need for early collaboration among design, engineering, and construction teams.

The eWolf represents a significant financial investment for Crowley, reportedly costing double that of a conventional tugboat. Funding for the project included substantial grants from several organizations, including the San Diego County Air Pollution Control District and the U.S. Environmental Protection Agency, aimed at supporting cleaner maritime operations.

"This tug becomes somewhat commercially viable because of the grant process," Manzi said. "Unlike a ferry service that's paid for by tax dollars, we have to collect fares and tariffs from the shipowners. Right now, the technology is out over market. So, we're working to true that up."

"The big driver [to produce the eWolf] was the reduction in emissions," Manzi said, noting that in 10 years' time, Crowley expects the eWolf will have saved 178 tons of nitrogen oxides, 2.5 tons of diesel particulate matter and 3,100 metric tons of carbon.

Captain Josh Ferguson, who now commands eWolf, noted the differences in operating an electric tug compared to traditional vessels, particularly the absence of engine noise and vibration, leading to a smoother experience. The tug can perform tasks with a bollard pull capability of 70 tons, operating on a three-person crew.

Looking ahead, Crowley envisions evolving roles for crew members as technology advances. Currently, eWolf's systems do not include autonomous functions, but it is equipped with technology that allows for future autonomous operations. This includes sensors and cameras that enhance situational awareness and facilitate safe navigation.

As Crowley and ABB develop the eWolf further, they aim to navigate the regulatory landscape to integrate higher levels of autonomy while ensuring crew safety. This project not only sets a precedent for electric tugs but also positions Crowley at the forefront of maritime innovation, paving the way for a more sustainable future in marine operations.

Top Vessels

ECO Edison

Ørsted

It's not too often that a true first-of-its-kind vessel comes along in the U.S, and Edison Chouest Offshore's (ECO) new service operations vessel (SOV) ECO Edison checks multiple boxes.

The groundbreaking newbuild is the first-ever American-built, -owned and -crewed offshore wind SOV, christened and quickly sent to work earlier this year. ECO Edison will play an integral part of the operation and maintenance of Ørsted and Eversource's South Fork Wind, Revolution Wind and Sunrise Wind projects as the U.S. offshore wind industry continues to ramp up in the U.S. Northeast.

Built at ECO's in-house shipyards in Louisiana, Mississippi and Florida, the 262-foot-long liveaboard SOV will serve as a floating, year-round homebase for 60 of the first American offshore wind turbine technicians, who will work at-sea over the life of the wind farms, servicing and maintaining the wind turbines.

ECO Edison is powered by two U.S. EPA Tier 4 certified Cat 3512E engines from Caterpillar Marine. The U.S.-flagged, Jones Act qualified vessel features a walk to work motion-compensated gangway that allows technicians to easily and safely access the wind turbines. The SOV's smaller daughter craft, Tee Ed, can be deployed to maneuver crew across the wind farms.

"The Gulf Coast region is playing a huge role in the growing U.S. offshore wind supply chain, using their decades of experience to deliver more homegrown American energy and serving as one example of Ørsted's more than $20 billion of investments into the United States," said David Hardy, Group EVP and CEO Americas at Ørsted.

"We're incredibly proud that our shipyards, engineers and more than 600 shipbuilders have now delivered a U.S.-first vessel that will support offshore wind energy for years to come for our trusted partners at Ørsted," said Gary Chouest, President of Edison Chouest Offshore. "Just as several of our vessels supported the construction of the first utility-scale offshore wind farm, South Fork Wind Farm, so too will the ECO Edison lead the way as this first-ever American-made offshore wind SOV."

Resilience

Incat Crowther

The Pacific Northwest National Laboratory's (PNNL) new hybrid research vessel, Resilience, will greatly enhance and expand the laboratory's marine research activities in the Sequim Bay region of Washington state.

Constructed with funding from DOE's Water Power Technologies Office, the 50-foot aluminum catamaran was designed by Incat Crowther and built by Snow & Company in Seattle as the Energy Department's first hybrid electric-diesel research vessel. The boat has a 16-foot beam and 4-foor draft.

"RV Resilience is a truly bespoke vessel, designed specifically to the PNNL's operational requirements and was a true collaboration between our team of digital shipbuilders, our partners at Snow & Company as well as the team at PNN," said Grant Pecoraro, Incat Crowther's U.S. managing director.

While Resilience can travel at speeds of up to 23 knots on its two Volvo Penta D8-510 main diesel engines, it can quickly transition to a silent, all-electric mode capable of speeds of up to 7 knots. The vessel is equipped with 113 kWh of Spear Trident batteries, Danfoss electric motors and Twin Disc gearboxes. This silent, all-electric mode will allow the PNNL researchers to conduct their activities with minimal noise pollution, allowing for enhanced research capabilities when taking sensitive acoustic measurements. It is less intrusive for studying fish and other wildlife and also reduces air pollution and carbon dioxide emissions. These batteries can be charged with the diesel engines, at any marina or through a rapid charging station at the PNNL-Sequim campus dock, where it is stationed.

Resilience's 28-square-meter main deck is equipped with an A-frame, boom crane and movable davit in addition to a foldable swim platform. Designed to support the work of six scientists, the USCG Subchapter T vessel also features multiple research workstations and convertible sleeping arrangements for multiday assignments. Sustainability and operational flexibility have been enhanced via the vessel's advanced parallel hybrid electric propulsion system.

According to PNNL, Resilience "enables future research and testing to support ocean-based renewable power, as well as advance long-term opportunities for energy innovation and decarbonation of marine transportation."

"This first-in-class electric hybrid vessel will greatly expand our R&D and testing capabilities and help us build new partnerships," said Christian Meinig, division director for PNNL's Coastal Sciences Division. "The large working deck and heavy lift capability will allow us to deploy and recover larger instruments and uncrewed vehicles to rapidly develop technology and deliver impact to our sponsors."

Top Vessels

Esperanza "Hope" Andrade

Texas Department of Transportation

Earlier this year, the Texas Department of Transportation (TxDOT) christened its first new ferry in over a decade, ushering a new era of vessel efficiency and reliability for the busy Galveston Ferry service.

Named for the first female chair of the TxDOT and first Latina Secretary of State, Esperanza "Hope" Andrade, the vessel was designed by the The Shearer Group and built by Gulf Island Fabricators in Louisiana.

Stretching 293 feet, the double-ended ferry showcases cutting-edge propulsion technology and pioneering battery energy storage systems. It is said to be the first ferry to operate under U.S. Coast Guard Subchapter H with installed battery storage.

The ferry is outfitted with four 799-hp Caterpillar C18 EPA Tier 3 diesel engines and Siemens Energy's BlueDrive PLUSC power and propulsion system, which reduces fuel consumption by regulating speed, shifting control from port to starboard as necessary, and operating the diesel engines as minimally as possible. The ferry's electric motors drive Voith Schneider Propeller (VSP) units. Siemens Energy's BlueVault Energy Storage System uses an advanced lithium-ion battery designed to maximize life, performance and safety. The system can store surplus power while the ferry is in operation and dispatches it on-demand. This efficiency boost translates to improved fuel economy, reduced operational costs, and increased sustainability for the Esperanza 'Hope' Andrade.

"By installing our BlueDrive PLUSC power and propulsion system, we have reduced fuel use, minimized emissions and made the Esperanza 'Hope' Andrade quieter and more comfortable," said Jana Nythruva, Vice President of Industrial Electrification, Automation and Digitalization Solutions in North and South America for Siemens Energy. "This ferry has a suite of other Siemens Energy technologies including our BlueVault Energy Storage System which further increases its reliability and efficiency."

Capable of accommodating 70 passenger vehicles or eight 18-wheelers per trip, the 495-passenger ferry services ensure seamless flow of goods, services and people between Galveston and Port Bolivar. Operating around the clock, seven days a week, weather permitting, the Galveston Ferry remains a linkage for Texas's transportation network, with each voyage averaging 18 minutes.

WindServe Frontier & Gripper

Senesco Marine

A-O-S

To date, there are more than 20 crew transfer vessels (CTV) in service or on order in the U.S., according to data from Intelatus Global Partners. In the years ahead, it is expected that dozens more will be built in the U.S. to support the construction and long-term service of a pipeline of new wind farms slated to sprout up in the waters off of the country's East Coast.

Among the U.S.-built CTVs delivered this year are American Offshore Services' (A-O-S) Gripper and WindServe Marine's WindServe Frontier, both of which are "hybrid-ready" aluminum catamarans purpose-built to serve the emerging offshore wind industry on the U.S. East Coast.

Gripper is the first CTV to enter into the fleet of A-O-S, a joint venture formed in 2020 by leading European CTV operator Northern Offshore Services (N-O-S) and U.S.-based investment firm OIC.

Gripper was built by Blount Boats in Warren, R.I., to ABS class and is based on N-O-S' 30-meter G-class design. The newbuild features a 11.2-meter breadth and 1.9-meter operational draft, and it is equipped with Volvo Penta's IPS propulsion system (4x D13-700 DST, 4x IPS900 Q2 props) and is said to be "hybrid-ready", meaning it was built with space reserved for all the required components for future upgrade to hybrid propulsion.

The vessel will support Ørsted and Eversource's portfolio of offshore wind farms in the Northeast, including the Revolution Wind project in Rhode Island and the South Fork Wind and Sunrise Wind projects in New York. The vessel will be berthed at Ørsted's Operations Hub at Quonset Point, and it has capacity to transport up to 24 technicians.

Launched in August, WindServe Frontier was built by Kingstown, R.I. shipbuilder Senesco Marine, a sister to WindServe Marine in the Reinauer Group of companies. The BMT-designed vessel is 29 meters long with a 9-meter beam and 1.7-meter draft.

WindServe Fronteir is the fifth CTV in the WindServe Marine fleet, but notably, it is the first that has been built as hybrid-ready. It is equipped with Volvo Penta D13 main engines (515kW at 2,300 RPM) and a Volvo Penta IPS 900 propulsion system. Its service speed is 24.5 knots, with top speed capabilities of 27 knots.

The USCG Subchapter L vessel is built to ABS class and features a pair of Kohler Marine generators, Toimil T-12505M/2 forward deck crane, Hercules AAW-150 anchor windlass, First Electric automation system, Reygar BAREFleet vessel monitoring system, Starlink internet, DirecTV satellite television and KPM suspension seating. The vessel has capacity for up to six crew members and 24 passengers.

Top
Tech

Exhaust-sucking Barges Slash Ship Emissions in Port

STAX Engineering, based in Long Beach, California, has experienced significant growth since launching its innovative emissions capture and control technology earlier this year.

Available as a land- or barge-based solution, the company's mobile, flexible exhaust capture system is designed to fit all ships without modification, removing 99% of particulate matter (PM) and 95% of nitrogen oxides (NOx) from all exhaust funneled into its system before the exhaust is released as purified gas.

The idea for the solution comes from seasoned inventor and engineer Bob Sharp, STAX Engineering founder and CTO. "He had the vision for a mobile emissions capture and control system that could modernize existing infrastructure for a cleaner future," said Mike Walker, STAX Engineering CEO. "His technical expertise laid the foundation for the company's core technology."

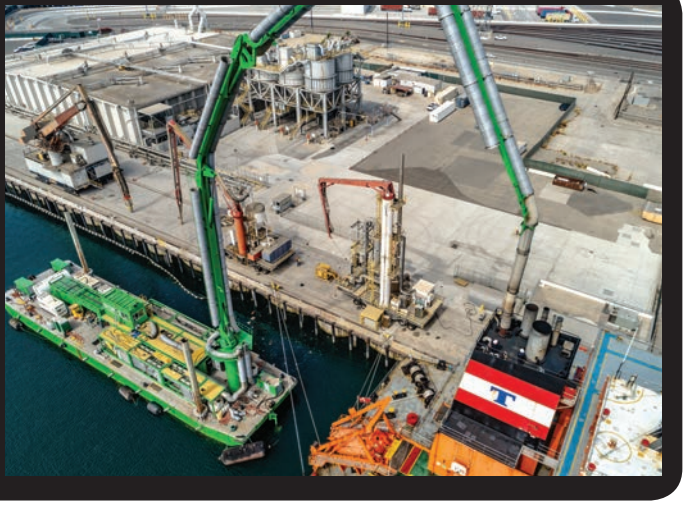
Facing stricter emissions regulations and growing market pressure to reduce its environmental impact, the maritime industry has become a primary focus for Stax. California in particular presents a significant opportunity due to its regulations aimed at improving air quality and public health by minimizing pollution from docked ships. The California Air Resources Board (CARB) 2020 At-Berth Regulation mandates that oceangoing vessels at California ports reduce emissions by using shore power, emissions containment devices or cleaner fuels while at berth.

"We realized the industry couldn't wait for long-term solutions like alternative fuels and infrastructure upgrades, which would take years and massive capital investment," Walker said.

"Port communities worldwide face well-documented air quality challenges due to emissions from vessels at berth, which contribute to health concerns like respiratory issues and cardiovascular diseases. STAX offers a practical solution to this ongoing issue," Walker explained.

In addition to filtering out PM and NOx from vessel exhaust, Stax is actively expanding its system to include carbon capture, Walker said, noting that he anticipates rollout in 2025. "Once integrated, STAX will be able to trap and permanently store converted carbon dioxide, making any vessel using STAX services virtually emissions-free."

For STAX, market acceptance has come relatively



STAX Engineering

quickly, and Walker said momentum is building. "Since our launch, we've mobilized multiple barges along the California coast, with eight more in various production stages to meet the market's growing needs."

"We're looking forward to the arrival of our third STAX barge in the Port of Hueneme in late October 2024. Two more will be in service by the end of the year, and we're on track to have 25 barges servicing the ports of California by the end of 2025," Walker said.

"Our biggest challenge today is keeping up with the industry's demand for a solution like STAX. As regulations tighten and extend to more vessel types, we've seen a significant surge in demand. Managing our fleet of barges across U.S. ports has become an operational focus," Walker said. "We're hiring rapidly and growing fast to keep pace, building the team needed to help solve this emissions problem at scale."

Today, STAX maintains a dedicated pier and production space in the Port of Long Beach, but the company aims to expand to other port sites. "As we grow, our approach to barge manufacturing will become even more region-specific. We aim to build STAX barges in the regions they will service, ensuring the most effective, efficient and sustainable production process wherever we expand globally." Walker said.

Barge operations

Depending on port preference, STAX barges can be moved by tugboats or using the company's patented self-propelling technology—one of many innovations the company has developed, accounting for two of STAX's 11 secured and pending patents, Walker said. "Once the vessel is positioned correctly, our team simply pulls up, raises the boom and begins the filtration process."

Each barge measures 40 by 160 feet, and the boom, along with its pedestal, can extend up to 279 feet. "The system is designed to connect to all ship designs without modification, and with its flexible configurations, STAX can operate even in the most congested ports," Walker said.

"Each barge operates with two crewmembers onboard at all times—a systems operator and a deckhand—who are responsible for placing the emissions collection device, monitoring and adjusting the system, and operating the spuds. The entire operation is connected online, allowing technology, engineering and maintenance teams to remotely manage the system's health and performance."

Walker said STAX barges adhere to regulations set by the CARB and Occupational Safety and Health Administration (OSHA). "We've secured multiple CARB Executive Orders (EO) to treat emissions from auxiliary engines on various vessel types, including containerships (EO G-23-294) and auto carriers/ro-ros (EO G24-054), and we're in the final steps of securing an EO for tankers," he said. "As we expand beyond California, we'll continue collaborating with local authorities to ensure compliance with all necessary certifications and regulations."

STAX Engineering

Top Tech

All-electric Seagliders for Coastal Transit

REGENT

North Kingstown, R.I. based **REGENT Craft**, the innovative developer of all-electric seagliders, announced the commencement of hardware and systems integration for its full-scale prototype, the Viceroy. This significant milestone follows extensive testing of subsystems and the successful operation of the company's quarter-scale prototype.

REGENT's journey began in 2020, culminating in the design and operation of a quarter-scale prototype over 18 months, during which they achieved the world's first seaglider flight. Following the unveiling of a full-scale mockup last spring, the company has focused on rigorous testing of seaglider subsystems using advanced digital twin technology.

The upcoming integration phase will see the assembly of key structural components and the installation of vital onboard systems, including motors, batteries, and vehicle control software. REGENT plans to launch sea trials with human passengers later this year, marking a historic step towards realizing regional coastal mobility.

"We're moving more quickly than any other advanced electric mobility platform to create the world's first passenger-carrying seaglider," said Billy Thalheimer, Co-Founder and CEO, REGENT. "We've proven seagliders can successfully float, foil, and fly — the integration phase is a major moment that brings us closer to experiencing float, foil, and fly firsthand. I'm looking forward to getting onboard myself."

Recently, REGENT received approval from the U.S. Coast Guard for its Navigational Safety Risk Assessment, allowing testing in Narragansett Bay and Rhode Island Sound. The prototype will undergo testing in three operational modes: floating, foiling, and flying, while maintaining a safe proximity to the water's surface, REGENT said.

With growing global interest, REGENT has secured more than 600 orders for its seagliders, valued at more than $9 billion, signaling strong demand from airlines, ferry services, and freight operators worldwide. As the company moves forward, the anticipation for human flights on the revolutionary seaglider builds.

AI Tech Assists MOB Detection & Recovery

Zelim

Zelim, based in Edinburgh, Scotland, has developed ZOE software, an artificial intelligence (AI)-supported detection and tracking solution designed to provide automated person overboard detection and alerts. Developed in collaboration with the U.S. Coast Guard, Zelim's ZOE is said to improve the probability of detection of people in the water with 96.8% accuracy in water from 337 meters. When optical zoom is applied the distance increases, the company claims.

ZOE offers instant detection of passengers/crew who fall overboard, tracking them through the fall and on the sea surface, providing geo-location information of the person in water to support rescue coordination.

In the incidence of a person overboard, ZOE transmits an automatic alert to the radio operator, who can see a 10-second clip of when the alert was triggered whilst simultaneously viewing live footage, according to Zelim. ZOE continues to track the person in the water, thereby increasing their chances of successful rescue.

The system logs the position of the vessel and the person overboard at the point of detection for mayday call geo-location, as well as providing the radio operator with a mayday script and actions checklist, ensuring fast and accurate reporting under stressful circumstances.

The ZOE software was installed on board the Valaris Stavanger drilling rig in February 2024. Zelim collaborated with the Texas-based offshore drilling contractor Valaris to customize the solution for the specific requirements of jack-up vessels. Following an initial trial period, Valaris will evaluate the suitability of the system for use on other assets in its fleet.

In addition, Zelim, in partnership with TEDGAR Consulting LLC was recently awarded a U.S. Navy Phase I SBIR contract, marking Zelim's first deployment in a defense application.

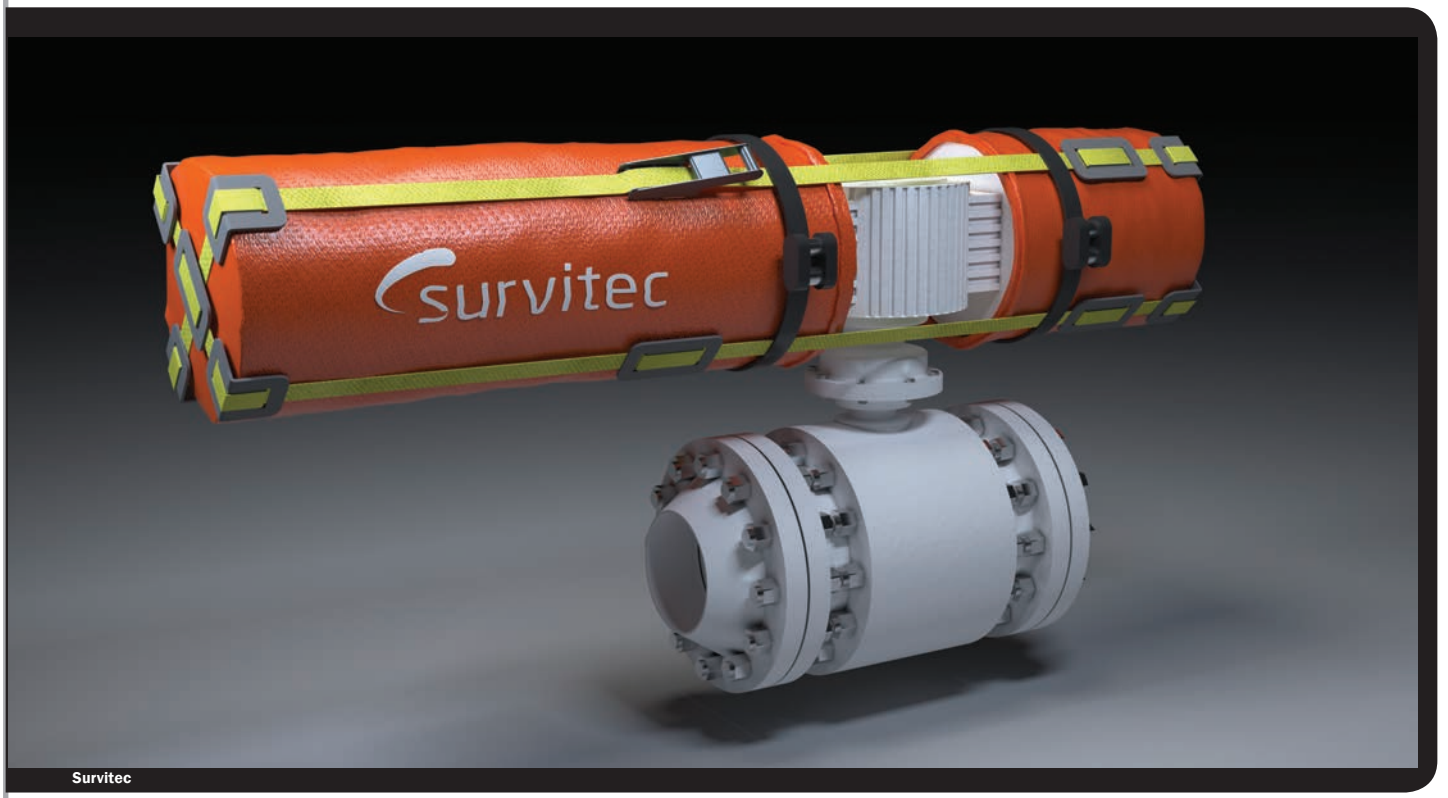
Top
Tech

Protecting Offshore Crews & Assets from Valve Actuator Failure

As offshore oil and gas infrastructure ages and the ever-present risk posed by equipment failure looms, new solutions are required to help keep crews and assets clear of harm's way. One of these solutions is Survitec's Gauntlet, an innovative safety containment system designed to mitigate the risks associated with valve actuator failures in offshore environments.

Paul Gwynne, Sales and Contracts Manager (Energy), Survitec, describes the Gauntlet as a cutting-edge system that provides comprehensive 360-degree protection in the event of a catastrophic valve actuator failure. Utilizing advanced para-aramid materials with a yield strength 10 times that of steel, the Gauntlet can withstand tremendous forces to ensure that in the event of an actuator failure high-velocity projectiles are contained and dissipated harmlessly—similar to a bulletproof vest.

The technology, originally adapted from aerospace applications, can be designed to accommodate and be compatible with any valve actuator, and represents a significant leap forward in safety protocols for offshore fa-



Survitec

cilities, Gwynne said.

The Gauntlet's inventor, Andrew Mackay, CEO, Infinity Oilfield Services Ltd., explained that the system's origins are rooted in a clear industry need. "There was a definite demand from clients in the North Sea, particularly Total and Shell," Mackay said, recalling incidents and near-misses that highlighted the vulnerabilities of existing safety measures. Traditional methods like steel clamps or scaffolding boards proved inadequate in containing the potential hazards posed by actuator failures, necessitating a more robust solution, he said.

The issue of valve actuator failures, predominantly caused by internal corrosion in aging equipment, poses a significant challenge, Mackay emphasized. "We've encountered hundreds of actuators in a degraded state," he said, noting internal corrosion can be nearly impossible to detect without dismantling the actuators. With offshore assets often exceeding three decades in service, the prevalence of degraded actuators underscores the critical need for proactive safety measures like the Gauntlet.

"It's very hard to predict when [a failure's] going to happen and how quickly it's going to happen. [The Gauntlet] adds a layer of safety, particularly for personnel that are not aware, working in the area, working on other items," Mackay said.

Gwynne elaborated on the current safety protocols and the Gauntlet's impact on industry standards. He said safety protocols over these particular issues are ambiguous, noting that authorities have advised duty holders and operators to take responsibility to make their work areas safe. "The Gauntlet offers a step change in safety controls," Gwynne emphasized, highlighting its certification and rigorous testing in collaboration with Lloyd's Register. This approval ensures that operators now have a reliable solution to effectively manage and mitigate the risks associated with actuator failures.

Since its introduction, the Gauntlet has received positive feedback and adoption by major and supermajor operators across the U.K. and North Sea. Gwynne noted, "There's been significant implementation of the Gauntlet system, which has overnight provided immediate resolution to what would be a considerable hazard and risk to personnel and plant." This widespread acceptance underscores its role as a critical component in safeguarding offshore operations.

David Montgomery, Head of Sales UK, Survitec, said the Gauntlet aligns with the company's broader strategy for safety enhancement. Survitec's existing lineup of safety solutions includes lifeboats, life rafts, marine evacuation systems, fire systems, life jackets, immersion suits, etc.

"Survitec has been providing safety solutions to protect lives and reduce risk for well over 100 years. We've always been at the forefront of safety innovation, and take immense pride in being a global leader for critical safety equipment and survival solutions," Montgomery said. "It is crucial that the working environment is as safe and risk-free as humanly possible, and the Gauntlet supports Survitec striving towards this goal."

As assets continue to age and risks escalate, the Gauntlet represents not just a solution but a pivotal advancement in ensuring safer working environments offshore.

"The risk of actuator failure will increase as assets age, increasing the risk to lives and equipment. Currently, the Gauntlet is the only approved safety solution to address the risk. And as such, forms a key part of our strategy for safety enhancement in the industry," Montgomery said.

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g. Copies not Distributed (See Instructions to Publishers #4, (page #3)) ▶			288	84
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18. Signature and Title of Editor, Publisher, Business Manager, or Owner
Kathleen Hickey
Date: 9/18/2024

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Top Tech

Methanol-to-power

PowerCell

In June, Sweden-based **PowerCell** introduced its Marine System 225, which it describes as powerful, yet compact and advanced maritime power generation system. Designed with the company's fuel cell stack platform, the new Marine System 225 builds on the success of the Marine System 200, which has been ordered for hydrogen ferries in Norway, for example.

The Marine System 225 is suitable for a wide range of marine vessels, PowerCell said, citing "enhanced power output", "improved operational efficiency" and an "industry-leading installation footprint".

In September, PowerCell received approval in principle (AIP) from DNV for its new cutting-edge Methanol-to-Power solution, which integrates the PowerCell Marine System 225 with a methanol reformer from RIX Industries.

As the maritime sector faces mounting pressure to reduce emissions, methanol has emerged as a viable alternative fuel alongside hydrogen, particularly as it is readily available in many major ports worldwide. This innovative system converts methanol into hydrogen for use in a fuel cell, offering a clean and efficient energy source.

DNV's approval affirms that the design meets rigorous safety standards, paving the way for more sustainable operations in the maritime sector, as both companies strive to support the industry's transition toward decarbonization.

Ammonia-powered Tugboat Sets Sail

Amogy

A 67-year-old tugboat converted to run on **Amogy's** cleaner-burning ammonia-to-power technology has set sail for the first time in upstate New York.

The 105-foot tug, originally built in 1957 and recently renamed NH3 Kraken, is the first vessel globally fitted with the innovative, carbon-free power system, developed by Amogy to reduce emissions from hard to abate sectors such as maritime.

The conversion project was carried out at Feeney Shipyard in Kingston, N.Y. and involved a comprehensive overhaul of the tugboat's original diesel generators and electric motors, integrating the Brooklyn startup's 1-megawatt ammonia-to-power system.

Amogy's onboard solution feeds liquid ammonia through its cracking modules integrated into a hybrid fuel cell system that will provide zero-carbon power to the vessel's electric motors. Ammonia, which does not emit CO2 when used as a fuel, has been gaining interest in the maritime industry as stakeholders explore options to decarbonize vessel operations. Green ammonia produced with renewable energy results in zero well-to-wake greenhouse gas emissions.

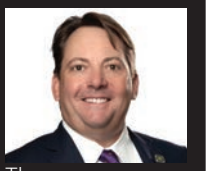
The demonstration sailing, performed on a tributary of the Hudson River, upstream from New York City, proves both the viability of Amogy's technology and marks a significant step toward reducing global carbon emissions and moving the maritime industry closer to the International Maritime Organization's (IMO) target of net-zero emissions by 2050, Amogy said.

Having already proven its technology on an aerial drone (5 kW), tractor (100 kW) and semi truck (300 kW), Amogy said the NH3 Kraken trial is the final technical demonstration ahead of product commercialization. The company has several agreements in place to supply its technology for other vessel types worldwide.

Seonghoon Woo, CEO and co-founder of Amogy, said, "By demonstrating our technology on the water for the first time, we've gained invaluable knowledge that will help us move quickly to commercialization and real-world applications."

People & Companies


van der Wurff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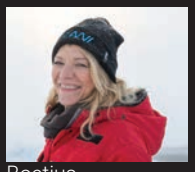
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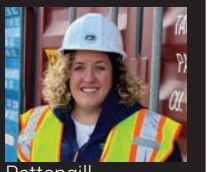
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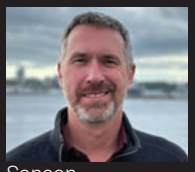
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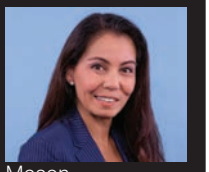
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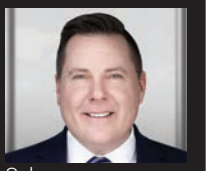
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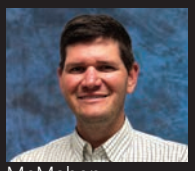
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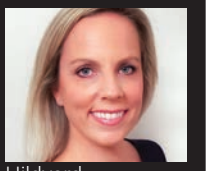
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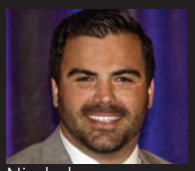

Niederhauser


Bennett

YANMAR Marine Taps New CEO

YANMAR Marine International B.V., a subsidiary of Yanmar Holdings, announced it has appointed Wouter-Jan van der Wurff as chief executive officer, effective October 1, 2024.

Thomas Appointed Port NOLA Board Chair

Louisiana Gov. Jeff Landry has appointed Michael A. Thomas as chairman of the board of commissioners of the Port of New Orleans for a five-year term.

Boetius to Lead MBARI

Prominent deep-sea polar biologist Antje Boetius will take over as president and CEO of MBARI, succeeding the retiring Chris Scholin.

Pettengill Leading Maine Port Authority

Chelsea Pettengill has been selected to serve as Maine Port Authority's interim executive director, taking over for Matthew Burns, who has decided to return to the Maine Department of Transportation in a new role.

LeeWay Marine Hires Sanson

LeeWay Marine announced Bill Sanson will be joining the team as president.

Mason Joins Hornblower

Hornblower Group has named Michelle Mason as its new chief people officer.

HII Promotes Bell

HII has promoted John Bell to chief technology officer (CTO) for its Mission Technologies division.

Schwarz Joins Siemens Energy

Siemens Energy has hired Ed Schwarz as its new head of maritime and offshore Americas.

DSC Dredge Promotes McMahon

DSC Dredge promoted Stephen McMahon to vice president of product support. He succeeds John "Sonny" Lightsey, who dedicated over 29 years to DSC.

Hildyard Takes VP Role at Raymarine

Raymarine has named Michelle Hildyard as its new vice president of operations.

Phoenix Hires Niederhauser

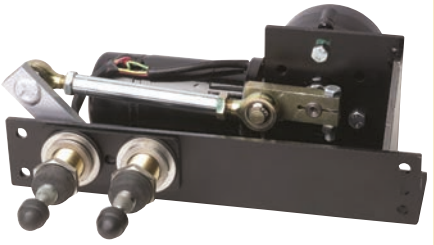
Phoenix International has appointed Travis Niederhauser to the position of General Manager–Pacific Region.

Bennett Joins RRDA Board

The Ports of Indiana Commission has appointed Dr. Tony Bennett to the Board of Directors for the River Ridge Development Authority (RRDA).

Products

1 In-Mar Solutions



2 VETUS Maxwell

3 Furuno

4 Danelec

1. In-Mar Solutions: Wynn Marine Pantograph Heavy Duty Window Wipers

Wynn Marine Pantograph window wipers are the ultimate solution for applications where complex window shapes need to be wiped effectively and economically. The wipers can be applied to anything from large commercial vessels to small and military vessels on land and at sea.

Pantograph wipers are available in a range of sizes from 2Nm of torque up to 110Nm with a wide variety of control systems and switch options. In addition, they can be supplied with heated arms and spray-jets.

www.inmarsystems.com

2. Heavy Duty Windscreen Wiper

Heavy-duty wiper has a thermal cut-out in case of excessive operating temperature. Self-parking on either side, 2 speeds/2 shaft lengths. Fully adjustable wipe from 62º - 92º. Stainless steel parts and meet EMC requirements. 12 or 24 VDC.

https://vetus.com/usa/

3. FAR2XX8MK2 Radar

Furuno has launched the FAR2XX-8MK2 Radar series, aimed at improving bridge operations and enhancing maritime safety and reliability. This new series delivers clearer and more accurate radar images while reducing ownership costs through simplified maintenance. High-quality images are processed directly in the antenna unit, converting analog information to digital signals before reaching the below-deck processor. The redesigned gearbox and antenna minimize aerodynamic drag, lessening environmental impact and wear. Additionally, the brushless DC motor allows for extended operation with less frequent maintenance, making it a reliable choice for commercial vessels.

4. FUTERRA Compressor Oils

RSC Bio Solutions has introduced FUTERRA Compressor Oils, synthetic lubricants designed for the industrial and marine sectors with a focus on sustainability. Made with a sustainable base oil, FUTERRA offers excellent thermal stability, extended service intervals (up to 8,000 hours), and biodegradability, making it suitable for rotary screw and reciprocating compressors in sensitive environments. This lubricant helps companies comply with environmental regulations while enhancing equipment performance and reducing operational costs. Its renewable base oils support decarbonization efforts, making FUTERRA a vital solution for industries prioritizing both performance and environmental responsibility.

5. Remote OPT

The newly launched Remote Operational Performance Test (OPT) service from Danelec enables ship operators to perform mandatory voyage data recorder (VDR) operational performance tests remotely. The new Danelec Remote OPT is a software-as-a-service solution designed to simplify the workflows required of ship owners under the Operation Requirement Resolution MSC.333(90) and IEC 61996-1 ed.2, which states that all VDRs installed after July 1, 2014, must support an OPT. This test, usually performed by the onboard engineering team annually or after sensor and VDR maintenance work, is intended to ensure all VDR data is recorded correctly.

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- Dredging Report
- Training & Education
- Safety Equipment

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CMA Shipping 2025
PVA Maritrends

Podcast:
Mega Machines – Cruise Ship Systems

02 | February 2025
Ad close Jan. 21

Innovation in Vessel Design & Construction

E-Magazine Edition

Podcast:
The Cutting Edge in Shipbuilding

03 | March 2025
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Offshore Energy

- Hybrid & Electrification
- Research & Survey Vessels
- Navigation

Events
IPF Wind 2025
Offshore Technology ConferencE

Podcast:
Maritime University Leadership

04 | April 2025
Ad close Mar. 21

Maritime Workforce Development

E-Magazine Edition

In partnership with MaritimeJobs.com

Podcast:
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