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

Marine News

Volume 32 • Number 1

JANUARY 2021

www.marinelink.com

Passenger Vessels

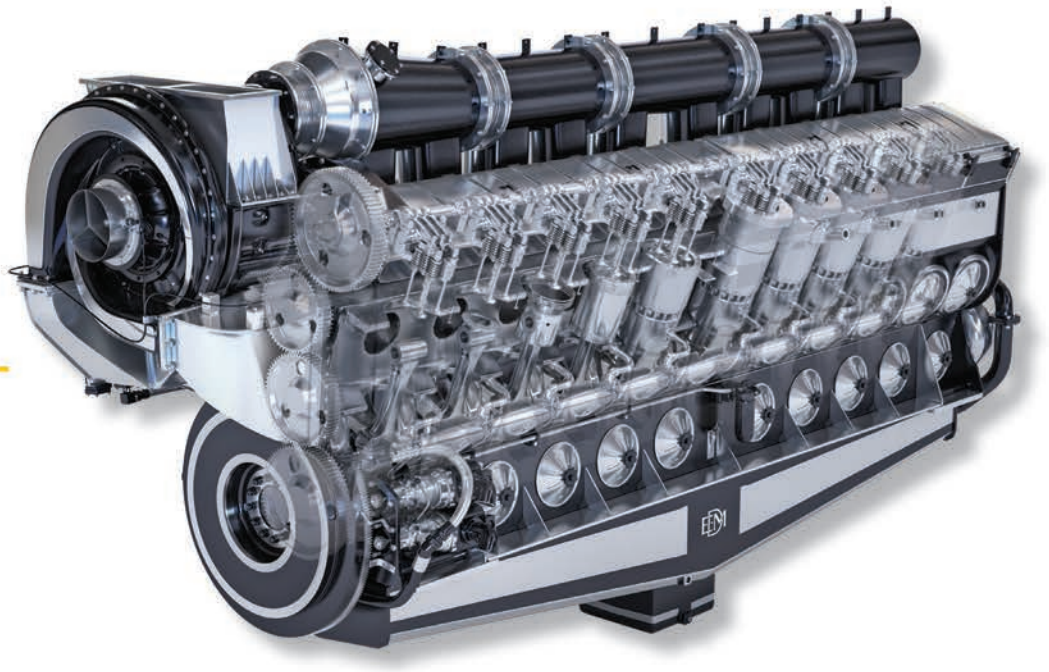
Down but Not Out

Electric Propulsion
The New Generation of Marine Power?

Fireboats
Big, New Challenges Are Here

Dredging
The U.S. Fleet is Growing

Marine Systems, Inc.



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

ABS · BUREAU VERITAS · CCS · DNV·GL

TWO CYCLE ADVANTAGE

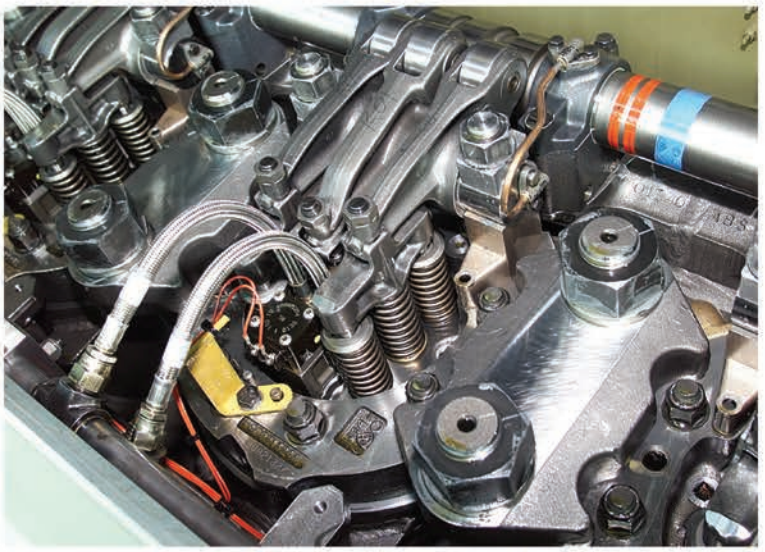
ENDURING DESIGN. LEGENDARY HERITAGE.

BEST IN-CLASS TRANSIENT RESPONSE

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

TOTAL COST OF OWNERSHIP ADVANTAGE

MAXIMUM UPTIME.



PARTS – LABOR – FLUIDS

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

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

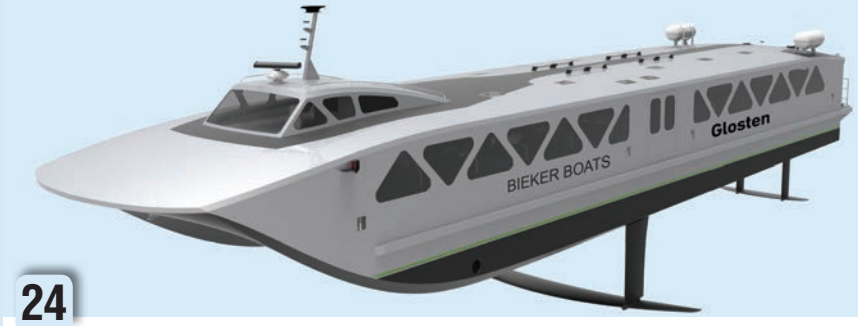
Ph: (985) 223-7100 • www.marinesystemsinc.com

ESI MARINE SYSTEMS, INC. MSI

Contents

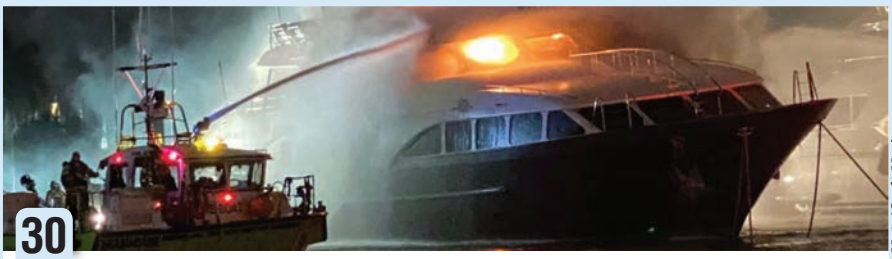
Marine News January 2021 • Volume 32 Number 1

Features

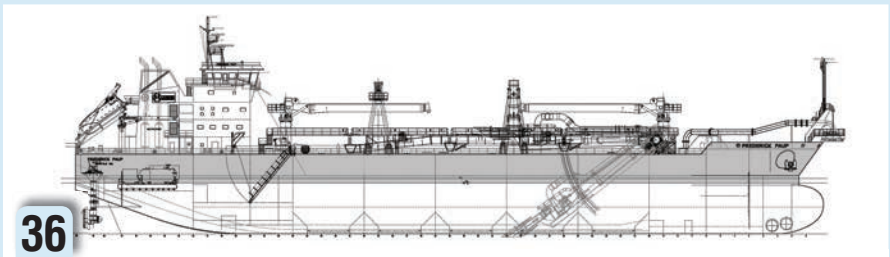


24

Glosten


30

MetalCraft Marine


36

Manson Construction

Departments

Stan Stephens Glacier and Wildlife Cruises

On the Cover

The passenger vessel industry is among businesses hardest hit by the COVID-19 pandemic, but operators are looking to brighter days ahead.

Building the Next Generation

EASTERN SHIPBUILDING GROUP, INC.

Nelson Street Facility
2200 Nelson Street
Panama City, FL 32401

Allanton Facility
13300 Allanton Road
Panama City, FL 32404

sales@easternshipbuilding.com
850-763-1900

www.easternshipbuilding.com

Editor's Note

Eric Haun, Editor,
haun@marinelink.com

At this time last year, the passenger vessel sector was among the strongest in the U.S. maritime industry, and expectations for continued market growth over the year ahead were palpable. Surely, no one could have known what was about to unfold, and that ferries, tour boats, river cruise ships and other passenger vessels would soon empty out as the effects of COVID-19 took hold.

"The reality of the situation is that the passenger vessel industry has been devastated by COVID-19 and our businesses are doing everything possible to survive," writes Colleen Stephens, president of Stan Stephens Glacier and Wildlife Cruises as well as the Passenger Vessel Association, in her column starting on page 20. "Nationwide, vessel operators are constantly adapting to ever-changing state and local requirements as well as unpredictable customer behavior. . . Many companies have lost the entirety of their 2020 operating season. If they are operating at all, most companies have experienced reductions in revenue by as much as 90% and have laid off or furloughed as much as 80% of their employees."

Stephens tells it like it is. For many, the situation has been grim and remains so into the new year. Still, with dedication and perseverance, there's always hope for a brighter future. "I'm choosing to be optimistic and focus on the opportunities ahead. Trust me, that's not easy to say." Stephens writes. "We may be down, but I say don't lose hope."

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

Marine News

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

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

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

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

Contributing Writers
Tom Ewing • Randy O'Neill • Barry Parker

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

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

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

Lucia Annunziata • ***annunziata@marinelink.com***
Tel: 212-477-6700 **ext 6240** Fax: 212-254-6271
John Cagni • ***cagni@marinelink.com***
Tel: 631-472-2715 Fax: 561-732-8063
Frank Covella • ***covella@marinelink.com***
Tel: 561-732-1659 Fax: 561-732-8063
Mike Kozlowski • ***kozlowski@marinelink.com***
Tel: 561-733-2477 Fax: 561-732-9670

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

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

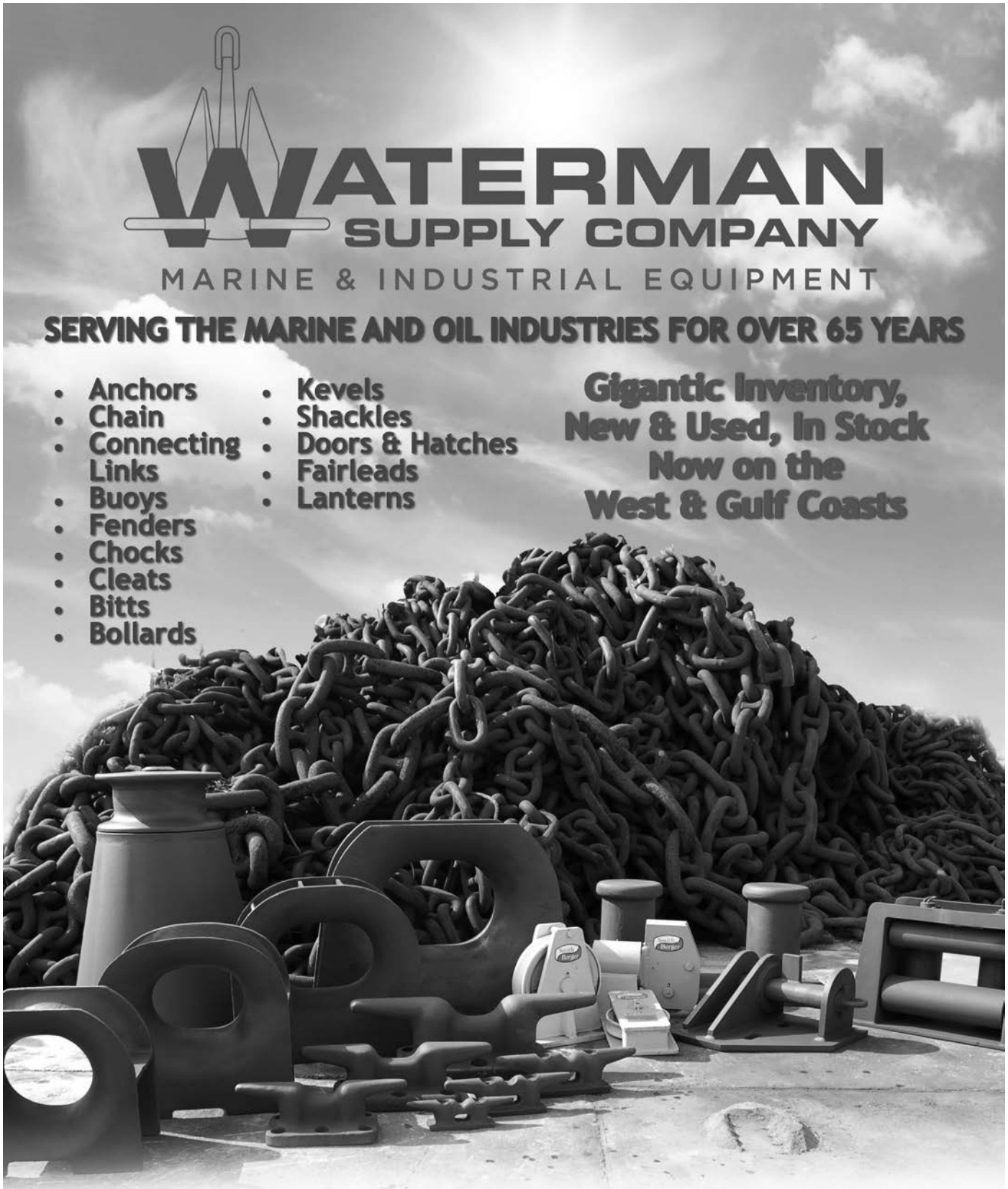
Accounting
Esther Rothenberger • *rothenberger@marinelink.com*
Tel: 212-477-6700 **ext 6810**

Manager, Info Tech Services
Vladimir Bibik

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

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

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


WATERMAN
SUPPLY COMPANY
MARINE & INDUSTRIAL EQUIPMENT
SERVING THE MARINE AND OIL INDUSTRIES FOR OVER 65 YEARS
• Anchors
• Chain
• Connecting Links
• Buoys
• Fenders
• Chocks
• Cleats
• Bitts
• Bollards
• Kevels
• Shackles
• Doors & Hatches
• Fairleads
• Lanterns
Gigantic Inventory, New & Used, In Stock Now on the West & Gulf Coasts
www.watermansupply.com | sales@watermansupply.com | P: (310) 522-9698 | F: (310) 522-1043

Contributors


1


2


3


4


5


6


7

1 Mike Corrigan
Interferry CEO, is a former energy industry executive who joined the trade group in 2017. He spent the previous 14 years in leadership positions at BC Ferries, where he was president and CEO from 2012.

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

3 Alan Haig-Brown
began his career as a commercial fisherman on the B.C. coast and later worked on coastal freighters. He writes about commercial marine subjects worldwide and has published several books, most dealing with commercial fishing history and issues.

4 Sveinung Odegard
VP sales North America, Corvus Energy, has more than 30 years of experience in the maritime industry. He holds a degree in electrical engineering from Western Norway University of Applied Sciences with a major in marine systems.

5 Jim Romeo
is a marine engineer and a freelance writer focused on business and technology topics. He is based in Chesapeake, Va.

6 Colleen Stephens
is the president of the Passenger Vessel Association 2020-2021, and president of her family's business, Stan Stephens Glacier & Wildlife Cruises.

7 Tracy Zea
is president and CEO of the Waterways Council Inc., a national organization that advocates for a modern, efficient and well-maintained inland waterways, including lock and dam infrastructure, and channel maintenance.

15 TO 17 JUNE 2021 | Southampton United Kingdom

sea WORK

Seawork is open for business – all year

Reserve now for 2021. Make the most of marketing & PR support from Seawork and our leading commercial marine magazines, in print, online, eNews and via social media.

Europe's leading commercial marine and workboat exhibition.

Show your latest innovations in vessels, equipment and services to over 7,700 maritime professionals.

12,000m² of exhibition halls featuring 600 exhibitors.

Over 70 vessels and floating plant.

European Commercial Marine Awards (ECMAs) and Innovations Showcase.

Co-located with: M&CCEEXPO Marine & Coastal Civil Engineering

Also returning in 2021 Speed@Seawork

For more information visit: **seawork.com**
contact: **+44 1329 825 335**
or email: **info@seawork.com**

#Seawork2021

mercatormedia magazines|events|online

Supporters: wa The Workboat Association

Media partners: MARITIMEJOURNAL INSIGHT FOR THE EUROPEAN COMMERCIAL MARINE BUSINESS

BOATINGBUSINESS BOATING BUSINESS & MARINE TRADE NEWS

By the Numbers

COVID-19's Impacts on American Infrastructure

It goes without saying that America's vast network of ports and inland waterways are crucial to the flow of maritime commerce, but these vital parts of U.S. infrastructure also play a big role in driving the greater national economy, support quality of life and ensure public health and safety. Still, no matter how clear and obvious the benefits, U.S. infrastructure as a whole (including roads, energy grids and, yes, ports and waterways among others) has fallen victim to underinvestment. It's been this way for decades. In 2019, the U.S. spent just 2.5% of its GDP on infrastructure, down from 4.2% in the 1930s, according to the American Society of Civil Engineers (ASCE). From 2016 to 2025, the country will underinvest in its infrastructure by $2 trillion, according to the 2017 ASCE Infrastructure Report Card.

A tumultuous and challenging 2020 fraught with the widespread and enduring effects of the COVID-19 pandemic has made a difficult situation even more so. It's worth noting that a sizable portion of existing infrastructure systems are supported with user-generated revenue streams. With the onset of the pandemic, commercial water use is down, commuters are staying off the roads and away from transit, and airports are virtually empty. Meanwhile, municipal and state budgets are

© Kirk / Adobe Stock

buckling under unprecedented demands, meaning less support is available for parks, schools and other publicly-owned infrastructure, precisely at the time we should be investing.

ASCE proposes that Congress should make infrastructure investment a centerpiece of its immediate response and long-term economic recovery strategy. "Now is the time to renew, modernize, and invest in our infrastructure to maintain our international competitiveness," it says.

INLAND WATERWAYS

The U.S.' 25,000 miles of inland waterways and 239 locks form the freight network's "water highway." Most locks and dams on the system are antiquated and in need of maintenance, and nearly half of vessels experience delays as a result of malfunctioning locks and dams. Investment in the waterways system has increased in recent years, but upgrades to the system still will take decades to complete.

The latest impacts:

The inland waterways are especially crucial for the U.S. agricultural industry, which relies on waterways to move wheat, soybeans and other goods to domestic and international markets in a cost-effective manner. Waterways are ideally suited to be part of a COVID-19 related relief package – there are currently 18 projects valued at just over $8 billion that are authorized for construction or currently under construction.

Solutions:

ASCE recommends that Congress provide funding to authorized inland waterway projects through the Energy and Water Development Appropriations Act. Robust funding to repair and replace locks and dams will provide nearly immediate value to the economy and ultimately support the U.S. agricultural sector and other industries that rely on the waterways to get goods to market.

PORTS

Some 926 American ports are responsible for $4.6 trillion in economic activity, or roughly 26% of the U.S. economy. As reported in ASCE's 2017 Infrastructure Report Card, the movement of goods through ports supports 23.1 million jobs, and provides $321.1 billion in tax revenue to federal, state and local governments.

The latest impacts:

Americans can follow public health officials' instructions to social distance in no small part due to the continued functioning of our nation's supply chains. Seaports provide gateways to receive medical equipment, food and other critical goods and services. However, the economic downturn stands to cause significant damage to ports overall volumes, to the tune of an estimated decline of 20 to 30% in total annual receipts. Additionally, tourism at ports has all but ceased.

Solutions:

To stem losses in the maritime industry and the ripple effect those losses have on the rest of the supply chain, ASCE recommends Congress provide $1.5 billion to support operations and capital costs at U.S. seaports. Longer-term, Congress should appropriate $4.5 billion for the Corps of Engineers coastal navigation program and $1 billion in supplemental funding for the Port and Intermodal Improvement Program.

Joe Hudspeth

Director of Business Development, Global Marine at BAE Systems, Power & Propulsion Solutions

Joe Hudspeth is the Director of Business Development for Global Marine at BAE Systems in Endicott, N.Y. BAE Systems offers complete, efficient propulsion and auxiliary power systems utilizing electric technology. Hudspeth has been involved with maritime sales, marketing and product development since 2000. He currently serves as a regional co-chairman for the Passenger Vessel Association, is a judge for the Worldwide Ferry Safety Association student design competition, and frequently speaks and writes on maritime and ferry related issues. Hudspeth lives in Bellingham, Wash. and he holds a Bachelor of Arts in Business Administration from Western Washington University. Here he discusses the pace and progress of BAE Systems' HybriGen technology.

Please walk us through the BAE Systems' experience with electrification.

JH: BAE Systems has been aware of the need to address emissions for decades, and this challenge has become one of our valued missions and is the purpose behind our Power and Propulsion Solutions Division located in New York. It's here in America that we proudly build our core technology, the HybriGen system, which has grown out of 20 plus years of investment and innovation. We first demonstrated our success in HybriGen electric power and propulsion systems in the transit bus industry. We've been able to leverage over 20 plus years and 13,000 systems in operation today to bring that over to the maritime sector. During the last five years, we've worked with a variety of boat builders and operators and naval architects to help get people toward zero emissions, and that's really what BAE Systems is about, is getting people closer and closer to zero emissions.

We believe that mitigating emissions through electric systems has a compounding effect, and that not only eases the burden on our precious environment, but it helps people to experience lower noise in their vessel, reduce crew fatigue through less vibration and financially helps the bottom line through reduced fuel expenses and maintenance costs. These are all reasons why it makes sense for people to consider hybrid and electric technology in this path toward getting to zero emissions. One other thing is sometimes it's the small things that get overlooked, but they're really a nice benefit and should be considered into the ROI analysis. For example, an electric ferry, they don't have to go to the fuel dock anymore; and we all know that going to the fuel dock takes time and you have to wait to bunker and it's expensive. But now with an electric ferry, every time you pull into the dock and plug in, you're essentially taking on fuel. That's really an added benefit to help people consider taking on that new technology.

Where has the technology found success in the marine industry to date?

JH: We have found that hybrid and electric propulsion technology makes a lot of sense for applications such as research and survey vessels. Vessels like Norwalk Aquarium, Spirit of the Sound and City University of New York's research vessel, they've been able to promote environmental stewardship while operating on sensitive coastal areas, and they do that with our hybrid and electric technology.

Additionally, tour operators, such as Red & White Fleet in San Francisco, they've been able to conduct quiet and low emissions tours and really ease their carbon footprint in an urban landscape setting, all at the same time they're experiencing and reporting fuel savings of around 30%, which is very significant.

Then if you look at our transportation sector, hybrid and electric technology works there too, and we've seen it demonstrated in Washington's Kitsap Transit passenger ferry, the Waterman that's providing daily commuter service, all with clean improving hybrid technology, and the Harbor Harvest vessel has become a first in America

to demonstrate hybrid technology in the field of short sea shipping. They're able to do crossings across Long Island Sound and bringing refrigerated cargo as well as passengers in a very clean and environmentally friendly way.

The list goes on and on, but I'll leave you with one more application and that's in the inland towboat market. Well, they need extra horsepower that may not make sense for a hybrid or electric propulsion system. We can use a system to generate power off of the main engines and utilize batteries that essentially eliminates the need for a generator. If you can pull the generator out of the equation for those boats, it saves fuel and maintenance costs, and really adds to the bottom line.

So, hybrid is happening. The electric power and propulsion in America is really buzzing, and it's going along cleanly and quietly.

As you discussed, your portfolio is wide and diverse. And no two projects are exactly the same. So, can you discuss how the HybriGen system supports the very needs and requirements of the marine industry? And is there any change in your approach of your system offerings?

JH: We certainly realize that our customers need flexible solutions, and we realize that all craft are different from pilot boats to patrol boats, eco-tour vessels, to high-speed ferries. Each one has different routes, different operational characteristics and performance requirements. Along the way, looking at these applications, we realize that some operators and applications are closer to zero emissions than others. That's where BAE Systems has been able to step in and provide systems that are designed to get people to zero, no matter where they are today. It's a journey and it's a path, and we have solutions that can meet each application no matter where they're at.

We found that the best approach is to develop partnerships, not only with naval architects, but with the operators themselves and with shipyards. We do that right from the start in the initial design phase, all the way through construction and sea trials and getting the certification from the regulatory agency or U.S. Coast Guard. So, if we do that, we can create lasting legacies in the systems that we are supplying.

Just to walk you through this a bit, we first start by identifying the vessel's power needs for both the propulsion power and the hotel loans. Once we have a solid understanding of that data, we can essentially map down to the minute how much energy the vessel will consume when it's in operation. We use this information to drive the system design, and for BAE Systems, our system is really modular and it gives us flexibility in our offering.

We understand that there can be challenges—for both builders and some operators—to adapt hybrid or electric technology, or even fuel cell technology as it's newer for our industry. But it's not new for BAE Systems; it's not new technology overall. So, we're able to leverage our ex-

"So, hybrid is happening. The electric power and propulsion in America is really buzzing, and it's going along cleanly and quietly."

All American Marine

perience, understanding and knowhow in this partnership to get through U.S. Coast Guard certification or approval by the regulatory agency.

So how do we do that? Well, at the core, more of our HybriGen power and propulsion system is really an off-the-shelf technology. It's a proven technology built here in America, and each application is going to be different, and that's where the HybriGen flexibility comes into play. We have the capability to go above and beyond when needed, and we can add engineered and tailored solutions if that's a requirement. But our approach is to deliver a package solution that provides all of the propulsion power and the auxiliary hotel load power. We can give our customers the assurance that our system is proven because they can look here in the maritime industry at these vessels that are currently in operation.

We offer three basic configurations for this HybriGen system, and the first system is our HybriGen power and propulsion system. That system provides electric power for all of the accessory loads, as well as the propulsion system, but it does so by using the power of lithium ion batteries and the supporting power of an efficiently driven variable speed diesel generator. This system takes diesel-electric technology and really gives it a twist. First and foremost, the system is engineered to utilize silent and electric power from the batteries as much as possible. Again, it's not just the propulsion power, but it's also the hotel load power too. When additional power is needed, that is when the variable speed genset will come into play.

What I love about the variable speed genset is that it only turns on when it's needed, and it only operates at a level of power that is being required and demanded for the application. It eliminates the need for the generator to operate at higher power levels. This cuts down on fuel consumption and reduces the emissions. If you think of it this way, most people have a fixed speed genset on board their vessel, and it's operating very inefficiently most of the time. Say you have a 100-kilowatt genset, but you only need 20 kilowatts of power. Well, that genset is sitting there churning away, producing a lot of extra power that just cannot be absorbed and used. Our approach is to operate that engine just at the power level that is required, and we eliminate a lot of harmful emissions, and that the problem of slobbering, or wet stacking, that just goes away with a variable speed genset. That's what I like about it, and that's part of the HybriGen standard system.

While this system works for many applications, there are still some applications out there that might need the additional horsepower of a conventional diesel mechanical propulsion system. We get that, and we're not trying to reinvent the wheel for all applications, but we feel like we can take conventional propulsion and twist it, and do it in a better way.

That's where HybriGen assist system comes into play. It's a parallel hybrid system that can augment the power of a conventional diesel propulsion system. We do that with the additional power of an electric motor that can feed into the propulsion system through a power take in and provide additional boosting power. This is beneficial for applications that require higher horsepower that might stem up into the Tier-4 power range. We can provide that power without having to generate the need for any aftertreatment systems. We do that all electrically.

But conversely, on the flip side, we can operate the electric motors and provide all electric slow speed propulsion for a vessel. This is very beneficial if you think of a ferry that's pushing against the dock while loading passengers or a harbor tug that is loitering and station keeping all day. Those vessels are currently forced to operate their propulsion engines at a minimum idle speed that may be excessive, and in doing so, they're burning a lot more fuel than what they may need. Our HybriGen system could do that all electrically, quietly and emissions free.

Lastly, I just want to mention that we can provide a power-based system, and our HybriGen power system is a simple configuration that generates power for the hotel loads by harnessing that power off of the main engine. If we do that income combination with an energy storage system, we can reduce the need for gensets, eliminate extra maintenance, extra fuel burn, and we're saving costs for the bottom line.

I think you might agree that, generally speaking, the marine industry can be somewhat conservative when it comes to the uptake of new technology. So, if I'm a vessel owner and I'm considering an all-electric or a hybrid-electric solution, what are some of the things that I should be concerned about or asking about?

JH: We realize that there are some customers and operators out there that might have some hesitation about going

electric or embracing hybrid technology. That's why BAE Systems is really trying to develop solutions that can meet customers where they're at today. There certainly are a few factors that need to be considered when going electric or even hybrid. It starts with defining the power needs, evaluating the suitable technology solutions that are out there and conducting a consideration of the shore site infrastructure and how much energy storage the vessel can physically accommodate. We're able to help with all of that. In order for this to work, the solution has to be a win-win.

We work to get the customers to see a complete picture of what they have and what could be. I want to underline that while this technology is new to the industry, to our industry, again, it's not new technology overall. The technology is safe and it is proven. Our regulators, the coast guard and classification societies, they have guidelines in place that further enhances the safety and proper installation and operation of these systems.

We also realize that it's important for the crew to be trained on the components of the system. We put forth a lot of effort into making sure that they're familiar and comfortable with that technology. We want it to be effortless in the operation of the vessel. It's a fully automated system, so the captain of a conventional vessel should be able to easily step behind the helm of a hybrid or electric vessel. It should look and feel that the same way in terms of the controls and the operation and control of the vessel movement. One piece of feedback that we got from some of our customers is that the vibration and noise of a conventional vessel provides a level of comfort at the helm. The captain is able to hear and realize that everything is working appropriately, and that essentially goes away when you have a quiet and low vibration electric propulsion system. So, we realized that we needed to provide clear visual indicators at the helm, and we've done that. There are some nuances, but these are things that can be overcome.

I also wanted to share that for operators who want to go electric today but may not have adequate shore-side infrastructure in place, that's all right. By working with a modular system, we can grow the system over time and how our customers go down that path to get to zero emissions. It's easy to add more energy storage, more batteries over time, along the way, and the system will adapt to that and realize that there's more energy storage in place.

If you don't have the shore site infrastructure, that's all right too. The hybrid system uses self-charging technology, so it really can get operators to feel comfortable about investing in the technology and growing it over time. Same, we realized that batteries and energy storage is going to be continuously improving, and as that technology improves, you can bring it on board and our system will adapt to that as well, whether it be more efficient with the lithium ion batteries or a fuel-cell-based storage system.

This technology just doesn't pop up, and developing it requires continual investment. When you look at your portfolio now and what it's going to look like in the coming years, what's new? What's next?

JH: We're always looking to the future. Something new that we're bringing to our HybriGen systems is geofenc-

HybriGen Power System

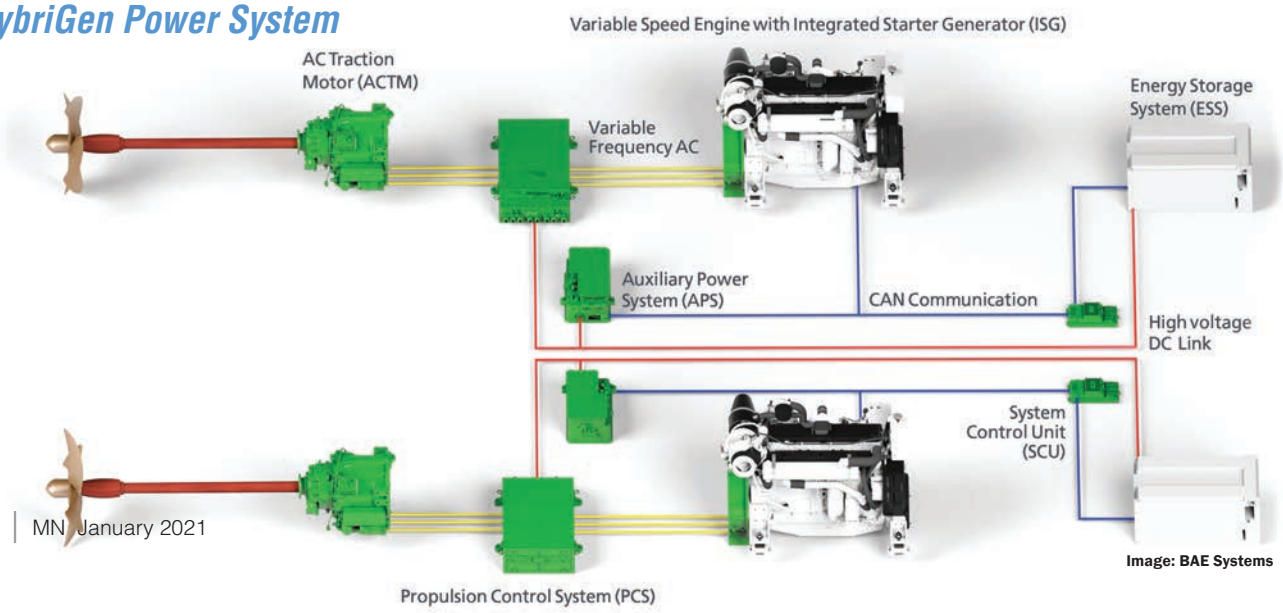


Image: BAE Systems

ing technology, which we have successfully implemented in our transit bus industry, and now we're bringing that over to maritime as well. It allows us to set up intelligent geofencing GPS based zones, and they use utilize the GPS technology to control the vessel and turn the diesel engines completely off, allowing the vessel to operate in zero emissions, quiet, all-electric propulsion when the vessel enters a user defined zero emissions zone. We feel that by offering this solution to current and future customers will help operators in sensitive coastal areas or passing through emissions corridors where they need to regulate how much emissions they're producing.

I'd also like to talk about a couple of projects that are going to be hitting the waters soon. One of the projects that we're most excited about is the SW/TCH e-ferry, and that will be the first hydrogen fuel cell powered hybrid electric ferry in America. That ferry is being completed right now, and utilizes BAE Systems' electric motors and power management system and interfaces with the hydrogen fuel cells. While it is still consuming a fuel—a clean fuel, hydrogen—it is doing so in a very efficient manner, and it's leveraging electric propulsion.

Secondly, we're happy to announce that the University of Vermont is utilizing our HybriGen system and their new research vessel. This is a vessel designed by Chartwell Marine, and it is currently under construction at Derecktor Shipyards. Again, the research and survey vessel community has realized that implementing this hybrid propulsion technology is great for environmental stewardship.

Column

Government Update

WRDA 2020 Winds its Way to Passage

The Water Resources Development Act of 2020 is a historic win for the inland waterways.

By Tracy Zea, President/CEO, Waterways Council, Inc.

In early October,

Waterways Council, Inc. (WCI) reported in its newsletter Capitol Currents that the future of the Water Resources Development Act (WRDA) of 2020 hung in the balance, with many unknowns for its chances of being signed into law during the Lame Duck session of Congress that just concluded in late December.

But despite twists and turns and a roller coaster ride, WRDA was, indeed, passed by Congress on December 21 as part of the FY21 Omnibus Appropriations that included a $900 billion COVID Relief package. This was the last major legislative act before the 116th Congress was adjourned.

Included in the bill was WCI's top WRDA priority to adjust the cost-share for construction and major rehabilitation of inland waterways projects. The bill modified the inland waterways project cost-share to 65% from the general fund of the Treasury and 35% from the Inland Waterways Trust Fund (IWTF) from the former 50%/50% cost-share split for FY 2021 through FY 2031. Any project that is under construction during this time frame will carry the new cost-share until construction of the project is completed. This adjustment will provide at least an additional billion dollars over a decade toward the modernization of the U.S. inland waterways transportation system.

Other highlights of the WRDA bill for the inland waterways industry included a 902 cost-limit increase for Kentucky Lock and a Chief's Report authorization for the Gulf Intracoastal Waterway – Brazos River Floodgates and Colorado locks. The cost-limit increase will mean work on Kentucky Lock can continue to completion, and the Chief's Report allows construction of new sector gates and channel widening to provide for more safe and efficient navigation while also improving water and sediment management capabilities on the Brazos River.

The Energy & Water Development Appropriations bill that funds the Corps was included in the Omnibus bill, which provided extremely strong funding for FY21. The measure also called for nine new study starts and seven new construction starts. And, for the first time since 2004, one of the new starts must be for inland waterways lock and dam modernization. A new lock project will have more than $15 million for the new construction start, with $113 million dollars appropriated from the IWTF that will provide for a robust $323 million construction program in FY21. This funding will serve to complete Chickamauga Lock and to efficiently fund Kentucky Lock.

The other win for WRDA 2020 is its passage on the biennial schedule it has stuck to since 2014. WRDA bills traditionally have been bipartisan legislation that unites both sides of the aisle, and WRDA 2020 had been as well, despite a few ups and downs along its journey to passage. The bien-

© Christopher Boswell / Adobe Stock

nial cycle remains an important priority for stakeholders because it provides reasonable reliability that projects will be authorized for construction, or a policy change can be made in order to have the Corps operate more efficiently. And achieving passage in such a politically charged Congress in a Lame Duck session is also a victory.

In fact, with a few exceptions (e.g., 1999 and 2007), WRDA bills traditionally have become law during an even-number year, often a couple of months before an election, giving Members of Congress a victory to tout back home to their constituents. Since the first WRDA bill was enacted into law in 1974, six of 13 WRDA bills have been signed into law just prior to elections. That number should actually be eight vs. six, with Congress passing WRDAs in 1986 and 1988 prior to the elections but, for political reasons, those bills weren't signed into law until post-election. Five of 13 WRDA bills have been enacted into law after the November contests in Lame Duck sessions. WCI's other major WRDA win occurred in the Water Resources and Reform Development Act (WRRDA) of 2014 that adjusted the cost-share for the Olmsted Locks and Dam project to allow for its more efficient completion to 85% general revenues from the Treasury and 15% from the IWTF.

At the passage of WRDA 2020, WCI expressed our thanks to the leadership of House Transportation & Infrastructure Committee Chairman Peter DeFazio and Ranking Member Sam Graves, and Senate Environment and Public Works Committee Chairman John Barrasso and Ranking Member Tom Carper, as well as all of Congress for passing this important bill.

WCI also offered thanks to Senate Appropriations Chairman Richard Shelby and Ranking Member Patrick Leahy, and House Appropriations Chair Nita Lowey and Ranking Member Kay Granger for their efforts to pass the FY21 Omnibus package that included the E&WD bill.

We remain proud of WCI's strategic vision and hard work on behalf of our members to significantly improve the funding mechanism to construct critical lock and dam infrastructure on our Nation's inland waterways. In terms of the efficiencies gained by this WRDA 2020 policy change in such a difficult economic and political landscape, this represents an historic win for the stakeholders of WCI.

What a nice way to end a very challenging year and begin anew.

Column

Passenger Vessels

Steering a Course Through Testing Waters

The head of global trade association Interferry reflects on the unprecedented challenges of 2020 and those ahead—but makes a case for cautious optimism.

By Mike Corrigan, CEO, Interferry

What a difference a year makes…

In this column last January, I was hailing the worldwide ferry industry's exceptional growth in 2019—marked by soaring tourist traffic and a host of newbuild orders—and eagerly anticipating further advances in 2020. None of us could have known that within a matter of weeks, all expectations were to be upturned by a global crisis of unimaginable scale.

The COVID-19 pandemic continues to take its toll on lives and livelihoods throughout society. Within the ferry community alone, the economic impact of travel restrictions has already seen income reduced by billions of dollars. That traditional seasonal greeting, "wishing you a healthy and prosperous New Year," could hardly come at a more appropriate and heartfelt time.

Prospects for health and wealth in the immediate future are anyone's guess right now, but there is at least one good reason to suggest that we may have turned a crucial corner. Several vaccines have now been licensed as safe and effective by various administrations around the world. From a

> *"Overall, our aim is that the regulations incentivize and reward our members for their efforts on energy efficiency—including the use of greener fuels and shore power—and acknowledge every kilogram of reduced CO2 emissions."*

© Steve Cukrov / Adobe Stock

ferry perspective, the gathering pace of inoculation programs gives us legitimate hope of an economic recovery in the second half of the year if we can get back to something like a normal summer vacation season.

Last summer was anything but normal due to lockdown measures that largely restricted ferry and other travel options to staycation bookings. To some extent this wasn't a bad thing if it now attracts a wider customer base to the short-haul, safer environment benefits of ferry travel as opposed to long-haul alternatives. However, on international routes where limited ferry travel caused a drastic drop in summer passenger revenue, it was once again illustrated that leisure travel during the peak period is absolutely key to the profitability of ferry services.

This was especially highlighted among multipurpose operators who depend on this seasonal revenue to support their year-round freight services and to offset the cost of emptier passenger decks over the winter. Interestingly, a number of these operators have reported significant increases in freight volumes over the past year, largely due to maintaining lifeline services—despite mounting losses—to deliver essential goods during the pandemic.

Interferry itself was directly affected by the crisis. Our 2020 conference planned for Hobart, Australia, which was to have been our 45th annual event, had to be canceled as yet another COVID-19 casualty. The vaccine breakthrough encourages us to believe that this year's gathering can take place as scheduled in Santander, Spain, in October. In these unprecedented times, the meeting of minds among hundreds of industry colleagues would more than ever provide a vital platform for the knowledge-sharing and networking elements of our mission.

As I hope you know, a major aspect of the association's work is representing our members on regulatory affairs, notably though consultative status at the International Maritime Organization (IMO), the United Nations authority dedicated to shipping's environmental and safety issues. During the pandemic, virtual meetings have replaced face-to-face sessions to ensure this fundamental activity continues.

Currently our main focus is on the IMO proposal to reduce greenhouse gas emissions from existing vessels under the so-called Energy Efficiency Existing Ships Index (EEXI). The pace of work involved is not far short of alarming, because individual ships must meet new short-term measures due in force in 2023—or lose their license to operate. In addition, once ships have been recertified, they must then conform to a continuous improvement plan under an operational efficiency regime called the Carbon Intensity Indicator (CII).

The short-term measures were agreed in principle by the IMO's Marine Environment Protection Committee (MEPC) in November and are set for final approval at the committee's next meeting in June. They are an initial step towards the 2030 target of a 40% improvement compared with 2008 values. In their proposed form, the measures will prove extremely challenging for ferries because the main EEXI compliance option is power limitation. Deepsea ships can feasibly limit their installed power to reduce speed and thereby meet the 'average performance' required of each shipping sector. But this option does not marry with the diversity of ferry designs and services, which demand sector-specific solutions to achieve operational flexibility.

Interferry responded to the proposals by launching a survey among members to collate energy related data from each of their ships. The data will be examined against the EEXI formula to see if their ships can comply with the measures due in 2023. If not, we will still have some time to draw up realistic adjustments for ferries before the formula is approved at this June's MEPC session. Once we have resolved the EEXI technical requirements, we then need to work on the operational aspects covered under the CII. Overall, our aim is that the regulations incentivize and reward our members for their efforts on energy efficiency—including the use of greener fuels and shore power—and acknowledge every kilogram of reduced CO2 emissions.

The data feedback has been comprehensive and we are now close to finalizing the study. Members are intensely aware of the enormous savings in pain and money that Interferry's lobbying stands to gain by preventing numerous ships from being forced out of service just two years from now. In such a context, it is not surprising that our membership tally of 260 operators and suppliers in 40 countries has held firm despite the financial ravages of COVID-19. I hasten to add that Interferry represents all ferry interests whether or not they are members, but those who are part of our family clearly see the modest fee as a proactive investment in their future. Through thick and thin, it's good to know that members truly embrace our belief that we are stronger together.

Column

Passenger Vessels

Passenger Vessel Association Looking Forward

The COVID-19 pandemic has been as tough on the passenger vessel sector as any, but that's not to say there isn't cause for optimism.

By Colleen Stephens, PVA President 2020-2021

All images: Stan Stephens Glacier and Wildlife Cruises

As we take a breath and collectively step into 2021,

I'm choosing to be optimistic and focus on the opportunities ahead. Trust me, that's not easy to say. Even as we are still experiencing a global pandemic which has devastated both the health and financial safety of our families, friends, employees, businesses, and communities. We may be down, but I say don't lose hope.

Stronger together

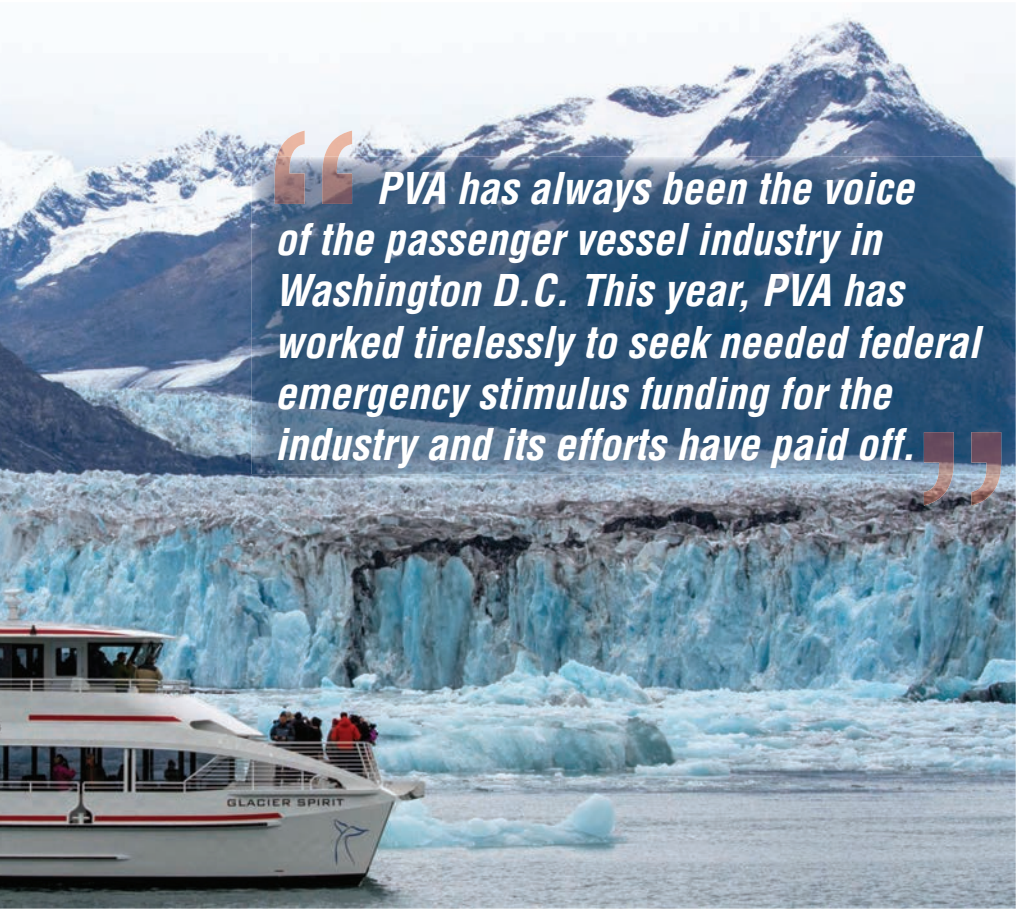
As President of the Passenger Vessel Association (PVA) and President of my family's business, Stan Stephens Glacier and Wildlife Cruises, I have been encouraged by my fellow PVA members, as they weather the unprecedented challenges of COVID-19. I am proud to say that over the past year I have seen the PVA network come together and support each other like never before. PVA members have always been innovative and stalwart leaders and 2020 proved no different. In the spring, PVA's committees jumped into action, meeting regularly online to discuss challenges and develop best practices. To ensure that companies could resume operations while protecting the health and safety of passengers and employees, PVA produced Reopening Guidelines: Getting the Domestic Passenger Vessel Industry Back Underway. When government emergency funding became available, the PVA team created webinars and tools to help members figure out how to apply and distribute this money to their employees. In April of 2020, I wrote a let-

ter to members encouraging them to utilize the association as a part of their team as they navigate this crisis. I am happy to report that PVA members have embodied that call to action; we are truly "Stronger Together."

The current state of our industry

The reality of the situation is that the passenger vessel industry has been devastated by COVID-19 and our businesses are doing everything possible to survive. Nationwide, vessel operators are constantly adapting to ever-changing state and local requirements as well as unpredictable customer behavior. We have been forced to reevaluate and make business decisions accordingly. PVA members have reported severe disruption to their businesses. Many companies have lost the entirety of their 2020 operating season. If they are operating at all, most companies have experienced reductions in revenue by as much as 90% and have laid off or furloughed as much as 80% of their employees.

My own business, Stan Stephens Glacier and Wildlife Cruises, has also felt the impact of COVID-19. My father started the company in 1971, offering day cruises to the Meares and Columbia glaciers near Valdez, Alaska; an operation I grew up in. This year we made the difficult business decision not to operate for the season



"PVA has always been the voice of the passenger vessel industry in Washington D.C. This year, PVA has worked tirelessly to seek needed federal emergency stimulus funding for the industry and its efforts have paid off."

Column
Passenger Vessels

at all. This decision also had an impact on our local community and the people we employ. But stories like this are unfortunately not limited to just my company or my town.

Even ferry operations that are considered essential are struggling. Island communities throughout the U.S. rely on dependable ferry service, particularly during a pandemic when necessary supplies are limited.

Those operators that have been open, and offering service at a dramatically limited capacity, are faced with the extraordinary challenge of balancing the need to continue to provide services to their communities while also managing the unprecedented health and safety risks.

Financial relief: PVA advocacy efforts pay off

PVA has always been the voice of the passenger vessel industry in Washington D.C. This year, PVA has worked tirelessly to seek needed federal emergency stimulus funding for the industry and its efforts have paid off.

In addition to fighting for emergency stimulus funding and loans for the passenger vessel industry early in the pandemic, PVA continued to urge Congress to provide additional emergency funding throughout the year. This effort, and that of other organizations, culminated in recently enacted economic relief legislation. This legislation provides another round of the Paycheck Protection Program (PPP) for small businesses; funded at $284 billion. These forgivable loans from the Small Business Administration will assist many PVA members, and the agency should be able to accept applications almost immediately.

The legislation contains a set-aside of $14 billion for public transit systems. PVA members that operate publicly owned ferries will be able to access this fund, as they did in the previous round of aid last spring.

Also included in the bill is the CERTS (Coronavirus Economic Relief for Transportation Services) Act; funded at $2 billion. This would be a new program of grants through the Department of the Treasury to most U.S.-flagged passenger vessel operators.

My company was fortunate to receive first-round PPP funds and used up all of it on the seasonal employees we had on the payroll for the short time that we had a staff. This additional funding throws a lifeline to our company and others like ours.

For businesses, like mine, that have been forced to pause operations, it may seem like time is standing still. Yet inside the D.C. beltway deadlines, hearings, rule changes, and legislation that impact our businesses still continue. The PVA team is speaking out for us, because when we do reopen, we will also face these new proposed rules and policy changes. PVA keeps our voice in the conversation.

NTSB and the M/V Conception

Also looming over our industry is the collective soul searching and regulatory aftermath following the tragic

fire onboard the M/V Conception, which occurred in September of 2019. We take seriously the findings and recommendations issued by the National Transportation Safety Board (NTSB) related to this incident. We at PVA are committed to safety and have been since our inception. The actions of the MV Conception are far from typical of our industry. PVA is working with NTSB and has met with NTSB Board Member Michael Graham to raise awareness about PVA members commitment to safety including fire safety on board our member's vessels. PVA is also working talking with PVA member fire safety equipment vendors to discuss the availability of products as we encourage the voluntary installation of interconnected smoke and fire detectors. PVA brings years of experience working with Coast Guard on fire safety policies and its long-standing fire safety training program for crew. The NTSB also re-iterated the need for our industry to implement a Safety Management Systems (SMS). Fortunately, PVA proactively created such a program for PVA members several years ago. PVA's "Flagship" SMS has been recognized by the Coast Guard as meeting the functional requirements of a SMS and is scalable within the small passenger vessel fleet. PVA is poised to support companies as they continuously improve the safety of their operation.

PVA virtual convention at MariTrends 2021

Our association also remains agile during this time by pivoting to a virtual MariTrends 2021 convention. Scheduled February 16-18, 2021, PVA will bring its member network together virtually for educational seminars, roundtable discussions, and product demonstrations with the goal of finding new business solutions. The PVA Virtual Convention at MariTrends 2021 Convention allows us to connect with our fellow vessel operators and our vendors and suppliers as we consider our challenges and brainstorm new approaches to business. Registration is open now and the initial agenda is posted at http://www.passengervessel.com/maritrends.html.

New PVA digital marketing program

I am also thrilled to announce that PVA will soon launch a new digital marketing program to assist PVA members cope with the effects of COVID 19 and get the word out to the travelling public that the passenger vessels are safe, and most importantly, offer fun experiences. This newest association benefit will help bring customers back to our businesses just in time for the spring season.

I am looking forward to seeing the passenger vessel industry move into a new season of recovery and rebuilding. PVA will be there to provide the support and tools to help us get there.

Electric Propulsion:
The Dawn of a New Generation of Marine Power?

Technological advancement opens new doors for hybrid and fully electric vessels

By Jim Romeo

Kitsap Transit Waterman - 150-passenger hybrid-electric vessel

All American Marine

In mid-2020, the U.S. Navy accepted the delivery of the USS Zumwalt, the Navy's first full-electric power and propulsion surface combatant. The ship's new electric propulsion plant provides favorable efficiency coupled with a reduced total cost of ownership. The design is flexible and efficient to deliver power where it's needed, when it's needed. Its adoption is symbolic of a maritime future and what could be in store for other marine craft, both inland and on the high seas.

Such technological advancement is encouraging at a time when the world's maritime industry delivers greater than two-thirds of all global trade, but also are tagged as a notable contributor to adverse carbon emissions. Electric propulsion and its versatile power capabilities make it attractive environmentally and economically.

"We have been working to address the challenge of zero emissions for decades and see great promise for

GlostenBieker Foil Ferry Using Battery Electric Propulsion

widespread adoption of the technology in the marine industry," says Peter Brooks, account Manager for marine and port solutions, for the power and propulsion solutions business area within electronic systems at BAE Systems' power and propulsion solutions based in Endicott, N.Y. BAE has helped develop several marine craft with electric propulsion.

Inland craft as early adopters

Bowers adds that an influx of electric propulsion is finding more inroads as a means of propulsion for inland craft. "In recent years, we've seen more vessel operators strive to adopt the technology and get closer to zero emissions. Most notably, we see passenger ferries at the forefront of adoption, but other market segments are starting to emerge such as inland towing with new construction and repowers," he says. "There has also been a recent surge of interest in the tug and harbor craft market with operators wanting zero emissions capability in the port area."

Jim Wolfe, PE is a senior electrical engineer with Glosten in Seattle. He also says that much of maritime industry within inland and point-to-point operations are where the hybrid and all-electric vessel emergence should enter "fastest and hardest." "The defined routes and defined operations are much easier to plan and design around than vessels that require more flexibility in capabilities," Wolfe says. "Short duration voyages are readily compatible with the current state of electrical energy storage technologies. The reduction in fuel costs and maintenance costs can offset the additional capital costs and training skills."

Dave Lee is the senior accounts manager for ABB Marine and Ports' Americas Inland River, Tug and Offshore sector. He believes that the inland craft market has blazed the trail for electric propulsion. They are the early adopters. But increasing standards of environmental compliance are drawing larger craft into electric propulsion.

"Operators are now faced with more expensive engines as well as higher operating cost with Tier 4 and current rates market day rates do not allow for any additional cost, may it be operational or capital," Lee explains. "With this along with the current status of the market it has paused a lot of new construction; however, the pressure that operators are receiving from both regulatory bodies (EPA) as well as customers will pull them to adopt electric and hybrid technology. I would say early adopters are on the cusp of hybrid and electric towboats as they are faced with the issues we already discussed. As the early adopters prove to the industry that hybrid and electric is the way to go the industry will follow, much like almost every other marine industry has already proven around the world."

Operational challenges

For further adoption of electric propulsion, vessel owners will face operational challenges. They will need to counterbalance such challenges with environmental and

Maid of the Mist all-electric tour ferry

ABB

> *Large energy storage batteries and integrated hybrid systems require significant automatic controls to operate. Being able to effectively troubleshoot and maintain these systems requires a good understanding of the underlying software and hardware. This will be a barrier to some operations.*
>
> **– Jim Wolfe, PE,**
> **Senior Electrical Engineer, Glosten**

cost benefits as well as other benefits as well.

Joe Wolfel, CEO of Terradepth Inc. in Austin, Texas, says that any sustainable platform has operational challenges as they represent a new way of transporting goods. Alternative fuels and other means of propulsion beyond the traditional high, medium and slow speed diesel engines must consider the logistics of supporting new systems.

"There are challenges with the energy density of fuels that are safe to submerge, creating the need for larger platforms, which drives a cost increase," Wolfel says. "Safe transportation, storage and handling are also challenges, as you combine volatile materials such as lithium, hydrogen or heavy fuels."

For electric plants, there's even a heavier burden of energy storage and an infrastructure to support any needed shore power connectivity or other interface while in port—domestically and abroad.

"We understand the challenges that boat builders face when adopting new technology and what it takes to make it certifiable for operation," explains Peter Brook of BAE. "There are many factors when going electric, but the three key components to consider are power needs, types of technology and infrastructure. We closely examine power needs early in the design phase with the builder. No two vessels are alike, so our goal is to work with the customer to outline how much energy a vessel will consume when it is in operation. Some operators may not be ready to go all electric, so we believe it is important to offer incremental solutions that meet specific needs. Unlike electric cars, this is not a universal model, instead we believe that solutions should be tailored to a specific vessel. It is also important to note that you don't need costly infrastructure or high grid power shore side to operate this technology on marine vessels. There are many vessels in operation today that use self-charging capabilities to recharge their batteries on board."

Though larger vessels aren't as concerned about battery charging for propulsion, they will likely need more battery storage and charging capacity for control systems that support them. In addition, electric propulsion is newer technology to operators and may require additional training and knowledge to operate and maintain main and auxiliary electric systems.

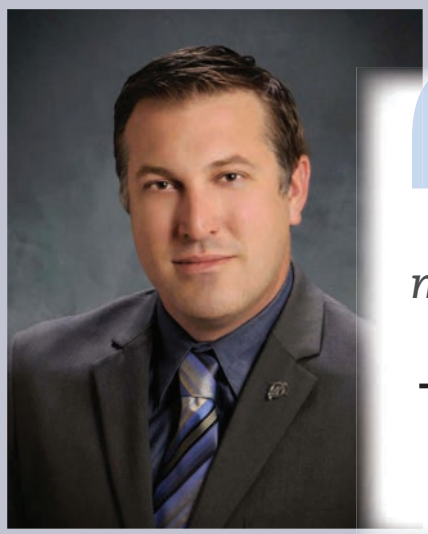
"System complexity and specialized skills are a significant barrier," says Jim Wolfe of Glosten. "Large energy storage batteries and integrated hybrid systems require significant automatic controls to operate. Being able to effectively troubleshoot and maintain these systems requires a good understanding of the underlying software and hardware. This will be a barrier to some operations. Some system providers have highly integrated standard solutions

> *There are challenges with the energy density of fuels that are safe to submerge, creating the need for larger platforms, which drives a cost increase,"…"Safe transportation, storage and handling are also challenges, as you combine volatile materials such as lithium, hydrogen or heavy fuels.*
>
> **– Joe Wolfel, CEO, Terradepth Inc.**

that requires significant post-sale support and cannot be supported by third parties. This is a change for some operators who are used to managing maintenance internally or being able to select qualified contractors and could be a barrier for some public agencies."

Bruce Strupp is ABB's marine and ports senior account manager for the ferry sector. Strupp contends that while electric propulsion seems to favor inland and littoral operations, there's still potential for the marine oceangoing sector as well.

"Operators tend to see more dramatic benefits in short distance shipping applications for zero emission and hybrid applications but there are still some benefits for deep sea and oceangoing vessels," Strupp says. "We are seeing some oceangoing and deep-sea vessels install batteries to capture electricity that can be used in a multitude of different ways



> *Operators are now faced with more expensive engines as well as higher operating cost with Tier 4 and current rates market day rates do not allow for any additional cost, may it be operational or capital.*
>
> **– Dave Lee, Senior Accounts Manager for ABB Marine and Ports' Americas Inland River, Tug and Offshore Sector**

including zero emission port stays, a spinning power reserve, peak shaving, enhanced dynamic performance and strategic loading all of which can have a positive financial, safety and environmental impact for the operator. We are also seeing a lot of development of fuel cells for oceangoing and deep-sea applications and believe that there is significant potential for operator benefits."

Flexible power and beyond

The gist of the USS Zumwalt and the Littoral class vessels is to have power availability when you need it, where you need it. This is true for commercial operators as well and highlights a notable benefit of electric and hybrid electric propulsion.

"The greatest benefit is utilizing only the power you need at a particular time versus having all the equipment online and

Guided-missile destroyer USS Zumwalt (DDG 1000)

Timothy Schumaker / U.S. Navy

...We are also seeing a lot of development of fuel cells for oceangoing and deep-sea applications and believe that there is significant potential for operator benefits.

– Bruce Strupp, Marine and Ports Senior Account Manager, Ferry Sector, ABB

not needing the available power," adds David Lee of ABB. "In other words, in a battery hybrid system you can utilize the batteries to not start a separate generator when there is a load demand for only a short period. In a traditional system you must have all the main engines on plus whatever number of generators all the time if you need the power or not. This correct utilization of power decrease both the cost of maintenance and the cost of fuel compared to the vessels of today."

This flexibility will yield a host of benefit that goes beyond strictly vessel operation and attractive features for owners who may prosper from its flexibility. Beyond such flexibility though, is the use of a system that is cleaner, often quieter and more manageable for the crew than traditional diesels bringing fossil fuels. Then there's also the environmental benefit atop all other. As with the USS Zumwalt, the overarching benefits of electric and hybrid electric power will unlatch new possibilities for marine propulsion and the environments in which they operate.

"Our vision is that this technology will not only help operators meet their emissions requirements but will create cleaner harbors and waterways in the places where we live, work and visit," adds Peter Brooks of BAE. "The system itself allows for a very flexible install, giving naval architects greater freedom to maximize the use of vessel space. In addition to emissions reduction, operators benefit from reduced operating costs, while also improving passenger and crew comfort with quieter and smoother vessel operation."

Energy Projects Bring Big, New Risks: Be Prepared

"Fireboats are basically an insurance policy."

- Meeting minutes, Southeast Texas Waterways Advisory Council (SETWAC).

By Tom Ewing

Developments in America's coastal ports are causing officials to closely review maritime safety operations and equipment. Fireboats draw a lot of attention. The reference here is to big fireboats – 40-50 feet, crewed by specially trained firefighters, outfitted with the equipment required to confront and take on a range of waterway emergencies. [CBRN is a frequent acronym used with these fireboats: Chemical, Biological, Radiological, and Nuclear operations.]

Big, new energy projects stand out as prime examples of new and significant port hazards. Consider the map from the Federal Energy Regulatory Commission (FERC) showing some of the major energy projects under regulatory review (Figure 1). And it's more than just cargo pushing up risk. Vessels are bigger and traffic is heavier, and logistics are always expected to perform faster.

These developments and challenges, though, do not automatically signal a one-to-one kind of dynamic leading to new fireboats. The process between documenting a fireboat's value and a commitment to buy one and place it in service is a fractured one. If it's a flow chart, it's complicated. Big fireboats are expensive. And public officials, of course, don't just buy a boat. Specialized crews and specialized equipment add up to significant operating costs. A closer look at two ports shows some of these issues at play.

The Sabine-Neches Waterway is one such navigation sys-

Port of San Diego Harbor Police Department boats combat a fire on board USS Bonhomme Richard (LHD 6) at Naval Base San Diego, July 12.

John J. Mike / U.S. Navy

tem confronting new and increased maritime hazards. The Sabine-Neches (S-N) is the United States' third largest waterway, connecting the Gulf of Mexico with the critical Texas port-energy cities of Port Arthur, Beaumont and Orange.

The S-N is number one for bulk liquid cargo. Refineries there produce 60% of the nation's commercial jet fuel. Significantly, the waterway is projected to become the largest liquefied natural gas (LNG) exporter in the US.

The Southeast Texas Waterway Advisory Council (SETWAC) is an umbrella, membership organization that includes the publicly designated Sabine-Neches Navigation District (SNND) as well as Coast Guard reps and professional pilots and port and maritime industries.

Fireboats are highlighted in recent SETWAC documents and presentations. In January 2020, for example, a SETWAC Navigation Subcommittee presented its waterway safety assessment for a planned ethane project in Nederland, Texas, between Port Arthur and Beaumont. Overall, the subcommittee judged that project safety risks and future operational risks were acceptable and within the norms of good practice.

Risks, though, increase with activity. Planned shipments (propane and butane) just from the Nederland project go from 20/month in July 2020 to an expected 30/month in July 2021. Vessels are VLECs – "very large ethane carriers" carrying "up to 98,800 cubic meters in addition to crude oil," the Subcommittee reports. VLECs are currently used on the S-N Waterway. Additionally, the Subcommittee advised that pilot and tug workforces need to expand to keep

MetalCraft Marine

MetalCraft Marine

Port of Plaquemines

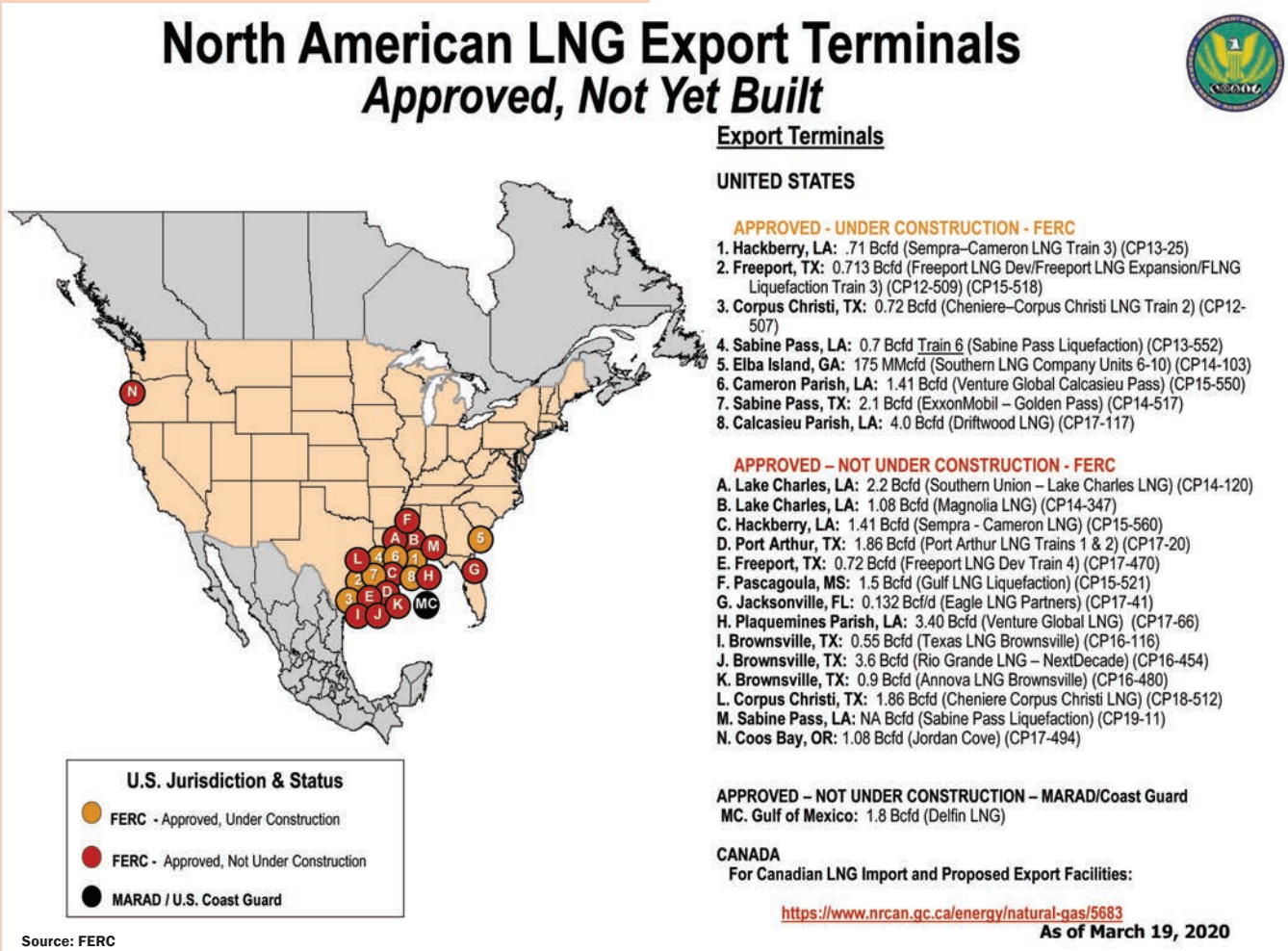
pace with this project and other waterway developments.

Recall the FERC map (Figure 1) and the concentration of projects. In Beaumont, for example, Martin Midstream Partners (MMP) is planning an LHG (liquified hazardous gas, similar to LNG but not the same) project that will include ultra large ethane carriers (ULEC). ULECs can have capacities around 150,000 cubic meters each. Vessel transits for this MMP project alone are projected to increase from 24 ships per year to 350. Right now, the S-N District has no large fireboats, although there are some privately owned fireboats.

Waterway officials like to point out that 350 transits are just a fraction of total vessel activity. That's true. But proportion is important. The S-N Waterway, for example, had 57,238 total transits in 2019, but 84% were inland tug and tow operations. LNG/gas carriers made up 2%, around 1,145 transits. Keep in mind the increase forecast just for the MMP project. It may take years to reach maximum activity, but it also takes a while to obtain a fireboat and have it commissioned into service.

At the SETWAC January meeting the Navigation Subcommittee made two recommendations. One, that the Nederland expansion should be approved.

Second: "Given the rapid expansion of NGL facilities and traffic along the SNWW, all efforts should continue within the local maritime community to add purpose designed and built marine firefighting assets along with appropriately trained personnel. The committee especially emphasizes the need for those companies and terminals operating oil and gas facilities (such as Sun/ETP) to promote and lead this important safety effort."



What's happened since that recommendation was made last January?

Some initial next steps were reportedly started by an existing regional safety working group.

One move was to contact officials at Port Houston, which has three fireboats in service along the Houston Ship Channel. S-N officials wanted advice and recommendations based on Port Houston's experience. What was that advice? Hard to tell. S-N officials would not provide details about the meetings and Houston officials did not respond to inquiries.

Bottom line: this all remains unsettled. Larry Fountain is District Operations Manager for the Sabine Neches Navigation District. "We really haven't made any progress on furthering the fire boat," he said, "due largely to the COVID pandemic." There is no timeline to complete this investigatory work. Funding issues are unresolved. Apparently, there was initial discussion about using some of the revenue from the S-N vessel transit fee to pay for new equipment and, of course, ongoing personnel and operating costs.

Now consider the Port of Plaquemines, on the Mississippi, 20 miles south of New Orleans. Plaquemines has significant fireboat capabilities, ready 24/7. The Port has two 57-foot vessels called Authority I and Authority II, each crewed by two firefighters and ready to go in 2-3 minutes. These boats started service in 2015 and 2016. They replaced older, smaller versions from the 1970s. The newer boats are faster, they can pump 6,000 gallons per minute, have remote firefighting operations and positive pressure cabins.

Fireboats

A third vessel, the Authority III, is a 90-footer, crewed by three firefighters. Response time is 5 minutes.

Crews are all maritime certified. All Captains have USCG 100-ton licenses.

Plaquemines fireboat decisions were made in response to the kind of energy-safety issues that Sabine-Neches is confronting. Donald Durr, Director of Security & Vessels for Plaquemines Port, said port officials wanted increased capacity to respond to potential emergencies at refineries and petroleum and chemical plants. A top operating concern was an upgrade in pumping, which the A-3 delivers: 15,000 gallons per minute, a 400-foot reach and carrying 1,000 gallons of foam. Another concern: a larger rescue platform. The A-3 was built in 2005 by Conrad Shipyard in Louisiana.

Durr said that more than 7,000 vessels transit Plaquemines annually. The Port District has 88 miles of deep water river. Tariffs provide the money to pay for fireboat operations. The port has mutual aid agreements with landside communities. Durr said Plaquemines' annual budget for fireboat operations is about $2 million.

A builder's perspective

Bob Clark is Contracts Manager for MetalCraft Marine, a major fireboat manufacturer with facilities in the U.S. and Canada. MetalCraft's extensive portfolio includes a diverse range of custom fire and rescue vessels. Clark was asked for his perspective on the fireboat market as he monitors emerging issues related to portside energy developments vis-à-vis the difficult decisions about expensive fireboats and related costs.

It's Clark's view that the market for big fireboats is somewhat stagnant right now. He foresees more growth in demand from smaller public entities, e.g., municipalities and port or safety districts. "The biggest buying decision for the buyers right now," Clark said, "seems to be budget driven. Even our 36s, 40s and 50s are all being sold at lower dollars."

Regarding the safety and hazardous issues presented by new port energy developments Clark commented that port officials that he's been in contact with "are all over the map" regarding interests, concerns and ques-

MetalCraft Marine

Regarding the safety and hazardous issues presented by new port energy developments Clark commented that port officials that he's been in contact with "are all over the map" regarding interests, concerns and questions about fireboats. He said that MetalCraft is "selling more boats with Purple K agents" (material used to fight LNG fires). In addition, ***interest in big fireboats ticked upwards after recent port and harbor disasters, such as the one that struck the U.S. Navy's Bonhomme Richard in San Diego in July.***

tions about fireboats. He said that MetalCraft is "selling more boats with Purple K agents" (material used to fight LNG fires). In addition, interest in big fireboats ticked upwards after recent port and harbor disasters, such as the one that struck the U.S. Navy's Bonhomme Richard in San Diego in July.

About 15 years ago, in the U.S., the Department of Homeland Security and FEMA provided rather generous funding and terms to help municipalities purchase fireboats. New York City's Fireboat 343 and its sister fireboat the Fire Fighter II, for example, both placed in service in 2010, were largely paid for by Homeland Security grants. Each vessel cost $27 million.

In the last five years, those federal funds were cut way back. Still, that money remains important, Clark said, particularly FEMA grants for larger ports considering fireboats. He also noted that in the booming economy pre-COVID smaller municipalities were relatively flush and that, at least for MetalCraft, fireboat orders were strong. Since COVID's economic hits, however, municipal coffers are far less secure, and Clark said that local governments are avoiding any preventable debt. He added that a new stimulus package could recharge big-ticket orders otherwise standing ready.

Clark was asked about the kind of fireboats currently drawing interest from officials. He said MetalCraft's FireStorm 50, recently purchased by Miami City, Fla.; Alexandria, Va. and overseas by Kuwait, exemplifies the kind of vessel that gets officials' interest. Attractive features are speed, high maneuverability and pumping capacity and options for CBRN capabilities.

Clark said that fire officials maintain detailed, long range plans for decisions about new or replacement fireboats. A high priority is placed on vessels with innovative, multimission platforms maximizing alignment with specific needs in individual ports.

He commented further: among ports, this is a nonstop effort. Officials know that when they forward a "yes" decision to the green-eyeshade team in accounting, it's got to be for the right piece of equipment.

Port of Plaquemines

Bigger, Stronger:
The U.S. Dredging Fleet is Growing

The U.S. dredging fleet is growing. Presently on order and under construction is a raft of in-demand equipment that will help to keep America's ports and waterways open, safeguard coastal communities and maintain the vital flow of maritime commerce to, from and through the U.S.

In August, Eastern Shipbuilding Group cut first steel for a new trailing suction hopper dredge (TSHD) it is building for Weeks Marine, and the keel was laid the following month at the builder's Allanton Shipyard in Panama City, Fla. The new 6,540 cubic meter capacity dredge R.B. Weeks, ordered by the Cranford, N.J.-based marine construction and dredging contractor in April, is scheduled for delivery in early 2023. It is the second TSHD Eastern is building for Weeks Marine, following the Magdalen delivered in December of 2017.

Continuing the dredge building boom currently underway in the U.S., Manson Construction Co. in September announced a contract with Keppel AmFELS to build a new hopper dredge at the shipbuilder's facility in Brownsville, Texas. The self-propelled TSHD Frederick Paup will be the largest in the United States, representing Manson's single biggest investment in its 115-year history, the company said. The 15,000 cubic yard hopper dredge — designed in collaboration with Hockema Whalen Myers Associates, Inc. of Seattle — has a length of 420 feet, breadth of 81 feet and draft of 28.5 feet. It will be highly automated with a diesel-electric power system, and built to the requirements of classification society American Bureau of Shipping (ABS). The new dredge is scheduled to be fully operational by spring 2023. When completed, the dredger will operate primarily along the U.S. Gulf and Atlantic coasts.

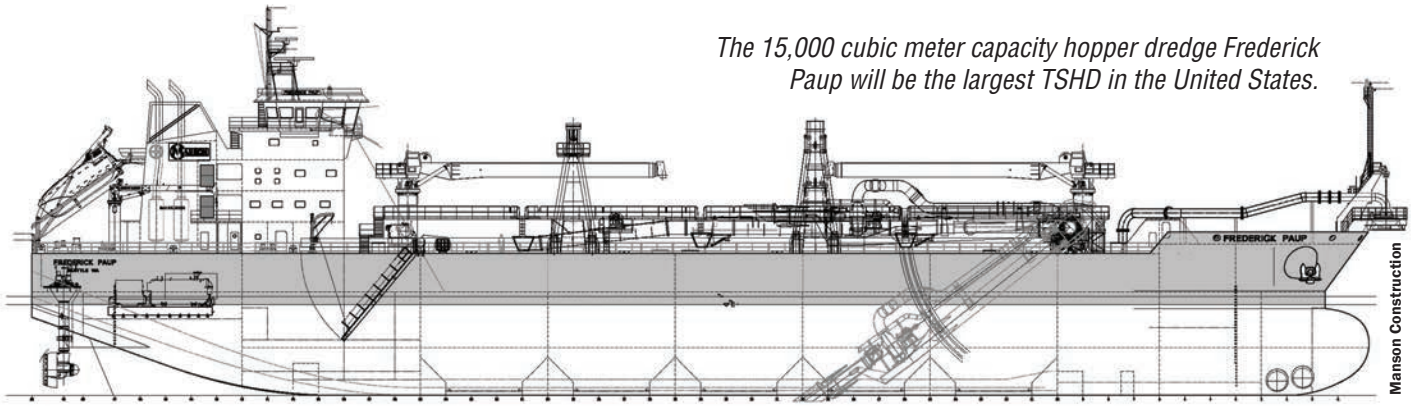
In June, Great Lakes Dredge & Dock Corporation (GLDD) signed a contract with Conrad Shipyard for the construction of a new 6,500-cubic-yard-capacity TSHD for scheduled delivery in the first quarter of 2023. The deal includes an option to build an additional dredge, the U.S.' largest dredging services provider said. Conrad is performing the detail design and construct the dredges at its Amelia, La. location based on a regulatory-level design provided by Great Lakes' in-house engineering department in collaboration with C-Job Naval Architects.

Lasse Petterson, GLDD president and CEO, said at the time of the order, "Great Lakes continues to strategically invest in its dredging fleet. This highly automated newbuild vessel will increase the capabilities of our hopper fleet in the coastal protection and maintenance markets as well addressing specific needs in the growing offshore wind market."

The new dredge will complement Great Lakes' existing six-dredge Hopper fleet, including the ATB Tug Douglas B. Mackie and 15,000-cubic-yard-capacity barge Ellis Island, which was delivered in the fourth quarter of 2017. "This vessel reinforces our commitment to the U.S Army Corps of Engineers and faith in the future of the U.S. dredging market," Petterson added.

Also in June, Westlake, La.-based Mike Hooks, LLC signed a deal with Mobile, Ala. fabricator Mobile Pulley Works (MPW) to design and build a new 27-inch cutter suction dredge (CSD). In addition to the new dredge, Hooks and MPW are working closely on overhauling many of the key components and equipment on Hooks' existing fleet of dredges. This will include all-new, wear-resistant dredge pumps that provide an efficiency of up to 90%, rebuilding and replacing worn ladders as well as the drives to pumps and cutterheads. MPW has also been contracted to deliver ball joints, pontoons, and pipeline to provide additional support to Hooks' existing and future dredging operations.

Galveston, Texas-based dredging contractor Callan Marine announced in July that it ordered a new 28-inch CSD that's due to join its fleet in 2021. The new dredge, General Bradley, is currently being built by Hagler Systems at the Halimar Shipyard in Morgan City, La. It will be 341 feet long with a 6.6-foot draft. Main dredge design and engineering work was performed by APT Offshore BV, who is



The 15,000 cubic meter capacity hopper dredge Frederick Paup will be the largest TSHD in the United States.

Manson Construction

Callan Marine's new CSD General Bradley is being built by Hagler Systems at the Halimar Shipyard in Morgan City, La.

Callan Marine

also supplying key dredge components. The diesel-electric driven General Bradley will be equipped with three ABC 12DZC engines that supply 9,260 horsepower combined. It will also feature advanced production automation and monitoring systems.

Callan said it intends to deploy the General Bradley from early 2021, primarily for brown water division projects. The dredge will be suited for both maintenance and capital dredging projects.

"The General Bradley is a demonstration of our commitment to capital improvement projects along the Gulf Coast region," Maxie McGuire, President of Callan Marine, said in a statement. "The Bradley will transcend our 'middle market' offering and truly be a difference-maker in large river and ship channel dredging."

McGuire told ***Marine News*** in a 2019 interview that the expansion of Callan's fleet is a direct response to increased opportunities and the direction of the dredging market. "The market is extremely busy and we are fortunate to have clients that are willing to make these investments to grow infrastructure," he said. "Callan Marine has a very healthy backlog at this time, and we feel there will be a great dredging market for years to come."

The General Bradley will be Callan's fifth dredge, following the arrival of the powerful 32-inch General MacArthur, which entered service earlier in 2020. Other dredges in the company's fleet include the 18-inch General Pershing, 16-inch General Patton and 12-inch General Eisenhower.

Earlier on, in May, the Netherlands-based Royal IHC said it was awarded a contract to design and build a Jones Act compliant dredger for the North Carolina State Ports Authority (NCSPA) for delivery in 2021. The vessel will perform maintenance in the main seaports of Wilmington and Morehead City in order to safeguard the depth of the ports. To do so, it will move sediment from the main channel (with the assistance of natural currents), while keeping the required material within the Cape Fear river system. The water injection dredger will be built at a partner shipyard in the U.S.

"The construction, procurement of the main components, assembly and testing will be performed in the United States (following the Jones Act regulations) and is being managed by the local IHC operations team based in Houston," said Projects & Services Director Rafael Vorcaro. "We consider this project as an important step to develop the local team and prepare the organization for future projects in the United States".

Tech
File

Energy Storage Systems Continue to Expand in North American Maritime Markets

Perspectives on marine battery solutions from Corvus Energy

By Sveinung Odegard, VP Sales North America, Corvus Energy

All images: Corvus Energy

North America is increasingly adopting energy storage systems (ESS) to use in combination with combustion engines or as the sole energy carrier in fully electric-powered systems.

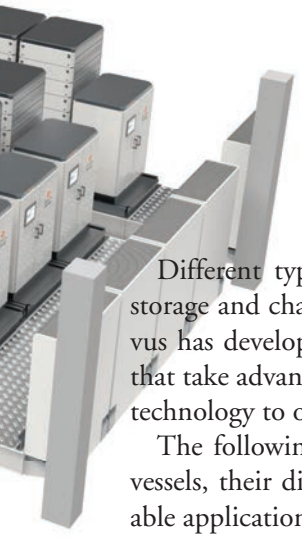
We clearly see a transition from 'consideration' to 'execution' of hybrid and all-electric maritime projects. Stakeholders want to explore how to make vessels more energy efficient and less polluting. Corvus Energy has deployed over half of the ESSs aboard vessels globally, totaling over 300 megawatt hours (MWh).

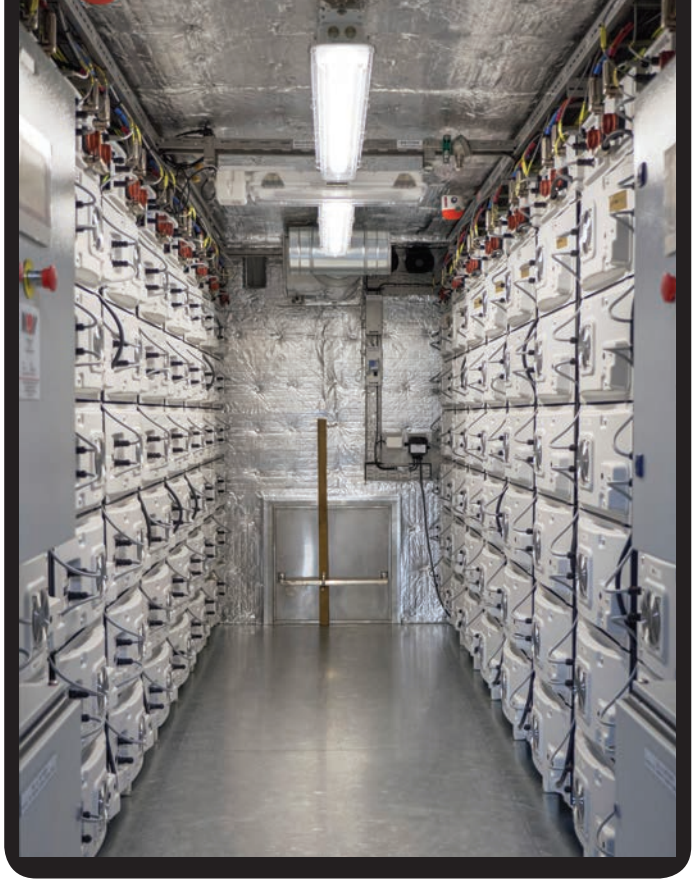
In North America, Corvus has deployed 24 MWh of energy storage capacity, and there are 13 vessels under U.S. Coast Guard jurisdiction and nine with Canadian flag either commissioned or under construction.

Trends in ESS technology

Just a few years ago, battery size was the main consideration. Corvus would analyze a vessel's load profile and size the battery system to exactly meet anticipated loads. However, as battery costs go down, other cost factors in the complete electrical solution rise to prominence. Now we see a more relaxed approach to battery sizing, as owners discover operational flexibility in higher battery capacity.

Corvus Orca Energy, the world's most widely deployed maritime ESS, is versatile for a wide range of applications and scalable from 80-10,000 kWh.





Different types of vessels have widely varying energy storage and charge/discharge requirements. As such, Corvus has developed a portfolio of energy storage solutions that take advantage of the strengths of selected battery cell technology to offer differing performance characteristics.

The following describes the ESSs we deploy on board vessels, their distinguishing features, and their most suitable applications:

Orca — Robust flexibility with fast-charging capability

Corvus Orca is our most widely selected battery system worldwide due to its scalability, fast charge/discharge capabilities, and ease of installation. It uses a Li-NMC cell and patented technology to optimize safety and performance.

It was Orca that broke through the cost/benefit intersection, raised the bar for maritime battery safety standards, and started rapid adoption in Nordic countries. Corvus Orca is now deployed on more than 200 vessels worldwide and has surpassed 2 million operating hours. It has proven to suit many vessel types and operating profiles, including offshore support vessels and shuttle tankers, car and passenger ferries, coastal cargo vessels, workboats, tugboats and fishing/fish farm vessels.

Dolphin — The highest energy density for weight-sensitive applications

For weight-sensitive vessels, such as fast-ferries and high-speed workboats, Corvus Dolphin may be a better choice. Its very high energy density can allow for more batteries on board, which may reduce how often they need to be charged. One of the trade-offs is a slightly reduced charging speed compare to Orca. As weight-sensitive fleets are electrified, operators may need to reconsider route scheduling. For example, a couple minutes more at the dock might represent significant reduction in shore power requirements.

Corvus Dolphin is available in power- and energy-optimized versions. Like Orca, both Dolphin Energy and Dolphin Power have Li-NMC cells and are modular and scalable for ease of installation.

Blue Whale — Highest energy capacity and battery room volumetric energy density

Corvus developed the Blue Whale ESS with big ships—ferries, cruise ships and cargo vessels—in mind from day one. Blue Whale has the industry's highest volumetric density, as it is designed to very efficiently be stacked in large battery rooms with service access from the top.

The cell technology is LiFePO4 (also called LFP), which provides excellent depth of discharge. This cell characteristic is vital when large ships aim for longer durations with zero emissions, for example, port stays and voyages in fjords or other waterways within sensitive environments or populated areas.

ESS — a partner in power

In an all-electric vessel, the ESS supplies power to the vessel's electrical components, including propulsion motors. It's that simple.

For a hybrid vessel, the batteries are "a partner in power" with diesel or gas engines. A properly integrated battery system optimizes the power plant at all times. It absorbs load variations and provides power instantly as needed, which often means avoiding starting backup engines. The batteries can also store regenerative power from cranes, winches and similar equipment. Overall fuel savings for vessels with complex load profiles can be in the 20%-30% range.

Corvus ESSs are built upon an open interface platform that can connect with any electrical system, providing vessel owners freedom of choice. Worldwide, we have interfaced our batteries to more than 25 electrical integrators. As we expand our portfolio of ESSs, vessel owners and electrical integrators will be able to select the most suit-

able battery system without major changes to their Power Management Systems.

Sizing of systems and lifecycle expectations

Designing, building, and operating a hybrid vessel requires different thinking, and Corvus supports the development of operational philosophies with batteries as an essential part of the power plant design. Once operating parameters are determined, Corvus can determine required energy capacity and lifecycle expectation.

The industry has mostly settled on a 10-year lifecycle, although that can be adjusted primarily with battery size selection. Corvus offers shipowners real-time battery monitoring, accessible through a cloud-based portal, that tracks actual battery usage and state-of-health to optimize the battery's performance throughout its lifecycle.

Container-based solutions, driven by industry stakeholders

Another trend is to deliver systems in enclosures based on standard container dimensions. Traditionally used in retrofit projects, we see an increasing number of new constructions leaning toward containerized solutions. The packaging allows owners and charterers to look at energy systems as building blocks. In the future, vessels may be capable of adjusting the number of containers on board to change its hybrid profile without intrusive rebuilds.

We also see potential to combine containerized batteries with clean energy carriers, such as hydrogen, to store excess energy generated in fuel cells and offload the vessel's peak demands.

New technology is welcomed

In recent years, we have witnessed a groundswell of acceptance of battery technology as a viable and practical solution to fleet electrification. There is no longer any doubt that the future is electric, but we still have a long way to go on our way to zero emissions.

Working together across the industry will be a key to success. Corvus keeps future trends in mind when designing our products, and we always strive to make them as adaptable as possible to existing and emerging standards. We look forward to continued discussions and collaboration within the North American maritime industry, its shipowners, vendors, class societies, trade organizations and government to drive innovation further.

Tech
File

Seaspan Cavalier Repower: Long Life, Big Hours

Third repower for a hardworking tug with a long service life in its wake

By Alan Haig-Brown

"We got 59,115 hours on those engines, without ever removing a head," says Seaspan International's Port Engineer Kevin Tweedy, "And they were still running. So, at 5,000 to 5,500 hours per year, we could easily have done 60,000 hours."

But the company schedule worked to do a like-for-like repower. The pair of 850-horsepower Tier 1 Cummins KTA38 diesels were pulled out, and a brand-new set of 850-horsepower Tier 2 KTA38s went in.

The Seaspan Cavalier was built in 1974, along with three sister ships. Three of the four 82.8- by 24.8-foot tugs are still working for Seaspan who built the tugs in its own shipyard. The tugs tow fuel and general cargo barges on the B.C. coast and can often be seen in front of a triple tow of wood-chip scows. The tug is fitted with a single-drum Burrard Iron Works winch loaded with 1,800 feet of wire rope. The tug is fitted with tow pins including a hold down claw.

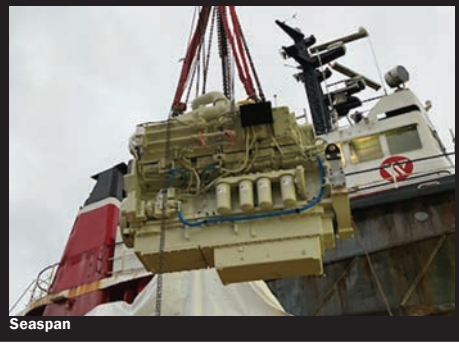
Tweedy has a good many years at Seaspan and recalls that this is the tug's third repower. "We cut a 7- by 8-foot hole in the tug's port side and install both starboard and port engines through that," he explained, adding that the same place is used each time with the old welds being cut in both the hull plate and framing. This ensures the structural integrity of the hull. Tweedy went on to explain, "Putting it back together we do a sealing weld from the inside first, then clean the weld from the outside before doing a second sealing weld from the outside."

The new engines are coupled to the tug's massive and virtually indestructible Lufkin RLS 3614 gears, with 6.987:1 reduction, turning three-blade 79.125- by 70.45-inch propellers in nozzles. "The props are in good shape," Tweedy says, "but we will send them to Osborn Propellers for tune-up, crack testing and pitch checks, as well as weld fill in way of cavitation, and balancing."

The Seaspan Cavalier is expected to maintain its 60,000-pound bollard pull after the repower. The transition from Tier 1 to Tier 2 will require some minor piping and electrical modifications. "We don't expect any problems, and the Cummins guys are good. They take care of us," Tweedy says.

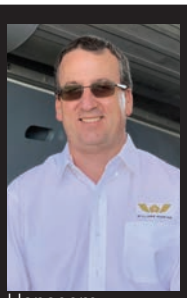
Alan Haig-Brown

Seaspan



Seaspan

People & Companies


Hanscom

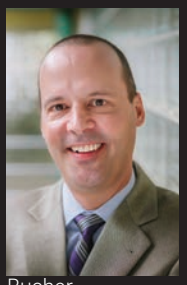

Balzano


Diamond


Tegström

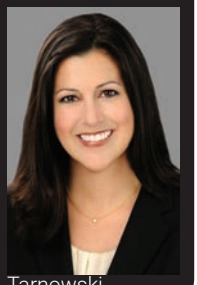

Adams


Dodd


Bucher


Giarratano


Finstad


Tarnowski

Hanscom Named GM of Willard Marine

Boatbuilder Willard Marine announced Eugene Hanscom has been appointed general manager. The industry veteran came to Willard in May of 2020 as the director of finance. Prior to that he spent the last six years with Curtin Maritime as vice president of finance.

Willard president and CEO Ulrich Gottschling announced that he will be retiring from daily operations, but he will continue to be a member of the board of directors of both Willard Marine, Inc. and Future Mobility Solutions.

DCA Taps Balzano as CEO

Trade association the Dredging Contractors of America hired Richard A. Balzano as Chief Executive Officer and Executive Director. Balzano recently served for three years as the presidentially appointed Deputy Administrator for the U.S. Maritime Administration.

APA Names Diamond Executive Director

The American Pilots' Association announced Clayton L. "Clay" Diamond will assume the duties of Executive Director and General Counsel effective January 1. Diamond succeeds Paul Kirchner, who has been APA Executive Director-General Counsel since 1992. Kirchner will continue with APA as Senior Counsel.

Marine Jet Power Hires Tegström as CEO

Waterjet propulsion systems supplier Marine Jet Power (MJP) appointed Jonas Tegström as chief executive officer to succeed interim CEO Claes Rudling, who will resume his position on the board of directors. Most recently Tegström served as the CEO of Orio AB.

Bucher Named CEO at Victaulic

Victaulic appointed Rick Bucher as Chief Executive Officer, succeeding John F. Malloy, effective January 31, 2021. Dr. Bucher was named President of Victaulic in April of 2020, following a June 2019 appointment as Chief Operating Officer.

CMT Expands Its Leadership Team

Cooper Marine & Timberlands has expanded its logistics and business development team through its promotion of Strickler Adams to Director of Marine Logistics and hiring of Alan Dodd as Director of Business Development.

DSC Dredge Promotes Giarratano

Nick "Nicky" Giarratano was promoted to Vice President of Manufacturing of DSC Dredge, LLC. He was previously Director of Production.

Finstad Joins GMC

Gulf Marine Contractors (GMC) has appointed Peter Finstad as the company's new executive vice president. He was previously Director of Marketing at Aries Marine Corporation

Hornblower Hires Tarnowski

Hornblower Group announced Kari Tarnowski has been named senior vice president of marketing for American Queen Steamboat Company. Tarnowski joins the company after serving as vice president of marketing for Crystal Cruises.

Products

1. Infectious Disease Mitigation Notation

How can the physical arrangement of a marine or offshore asset act to mitigate transmission of infectious diseases? In the midst of the COVID-19 pandemic, it's an urgent question for global maritime that ABS has addressed with the publication of The ABS Guide for Mitigation of Infectious Disease Transmission On Board Marine and Offshore Assets and, in an industry first, with the introduction of a new notation indicating compliance with the standards. Developed from a range of independent governmental and commercial guidance, including the U.S CDC, the guide addresses physical arrangement measures on board.

2. Air Decontamination Systems

ALMACO and Genano have signed an agreement to become preferred partners in providing the marine and offshore industry with patented air decontamination technology that improves overall passenger and crew health by removing airborne impurities, including the novel coronavirus, of all sizes. ALMACO, which provides the marine and offshore industries with interior solutions for accommodation, catering, laundry, public and technical areas, said air decontamination systems provider Genano is the newest addition to its partner pool.

3. Moisture Eliminators

Delta "T" Systems' Moisture Eliminators are designed to detach moisture particles from the air so engines can deliver optimal performance. Plus, by lowering humidity, the potential for corrosion is diminished. Moisture Eliminators feature a series of vertical vanes mounted inside a plenum box. As moist air flows through it, water particles down to ten microns in size, or even smaller, are filtered out and drained. With a choice of PVC or aluminum construction, they're available in standard and custom shapes and sizes, and offered in heated and chilled versions for use in extreme temperature conditions.

4. Supreme Pro Battery Charger

WhisperPower is ready to start shipping its new range of Supreme Pro Battery Chargers. Available in four models – 40, 60, 80 and 100 amps – the chargers/power supplies have been built to exceed the most stringent requirements of the global shipping industry. The Supreme Pro range is touted by the manufacture as the smallest 24V battery charger of its type in the world, able to run silently and keep itself cool in hot areas such as engine rooms that may otherwise compromise performance.

5. X10 Titan Incinerators

For decades it has been customary to use steam, electricity or thermal oil to heat sludge oil prior to its incineration. ATLAS Incinerators' new X10 Titan range, has been designed to incinerate sludge oil and simultaneously burn solid waste while consuming an absolute minimum of energy onboard ship. While there is a significant improvement in the X10 Titan's combustion specifications, the real game-changer according to the manufacturer is that the sludge oil does not have to be heated prior to being burnt, which means that the incinerator.

6. Iridium GMDSS

Satellite communications provider Iridium Communications Inc.'s Global Maritime Distress and Safety System (GMDSS) service officially went live on December 11, ending a monopoly held by rival Inmarsat and enhancing the integrity of global safety communications for seafarers globally. Iridium's GMDSS service is built on the company's upgraded $3 billion satellite network, completed in 2019, and utilizes the company's L-band satellite spectrum. This spectrum serves as a weather-resilient complement to other satellite broadband capabilities on ships, aircraft and vehicles and is also a requirement for GMDSS terminals on SOLAS-class vessels.

Marine News 2021 Editorial Calendar

January 2021

Passenger Vessels

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

Event Distribution:

PVA Maritrends:
Feb 6-9, Portland, OR

E-Magazine Edition: Offshore Wind Workboats

March 2021

Pushboats, Tugs & Barges

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

Event Distribution:

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

April 2021

Offshore Energy

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

Event Distribution:

CMA Shipping 2021
May 2021 - Stamford, CT

May 2021

Dredging

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

Event Distribution:

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

June 2021

Combat & Patrol Craft

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

July 2021

Propulsion Technology

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

Event Distribution:

Clean Waterways
September 13-15 - Louisville, KY

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

September 2021

Shipbuilding & Repair

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

Event Distribution:

SNAME Expo
October 2021 - Houston, TX

October 2021

MN100

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

Event Distribution:

SHIPPING Insight
October 2021 Stamford, CT, USA

November 2021

Great Workboats of 2021

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

Event Distribution:

Clean Gulf: December 2021
Workboat Show: December 2021

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

Powered by www.maritimejobs.com

Marine Marketplace

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

MAXIMIZE YOUR POTENTIAL.

Find your new career at:

MaritimeJobs.com

www.MaritimeJobs.com

Marine Marketplace

NEW PRODUCTS

VESSELS FOR SALE / BARGES FOR RENT

NEW PRODUCTS

Marine Marketplace

NEW PRODUCTS

PROFESSIONALS

ADVERTISER INDEX

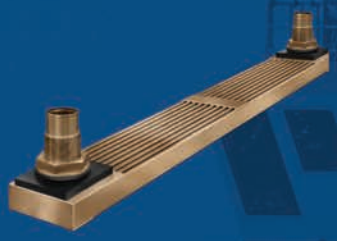
Page	Company	Website	Phone#
29	Ahead Sanitation	www.aheadsanitationsystems.com	(337) 330-4407
33	All American Marine	www.AllAmericanMarine.com	(360) 647-7602
3	Eastern Shipbuilding Group	www.easternshipbuilding.com	(850) 763-1900
23	Gladding Hearn	www.gladding-hearn.com	(508) 676-8596
21	GP Link	www.gplink.com	(252) 504-5113
15	H.O. Bostrom	www.hobostrom.com	(262) 542-0222
27	Incat Crowther	www.incatcrowther.com	61 2 9450 0447
C2,1	Marine Systems, Inc	www.marinesystemsinc.com	(985) 223-7100
23	MOPS Maritime License Insurance	www.mopslicenseins.com	(800) 782-8902 ext 3305
C4	R.W. Fernstrum & Company	www.fernstrum.com	(906) 863-5553
15	Ribcraft USA LLC.	www.ribcraftusa.com	(781) 639-9065
17	Scania, USA Inc.	www.scaniausa.com	(210) 403-0007
7	Seawork 2021	www.seawork.com	44 1329 825 335
C3	SMM 2021	www.smm-hamburg.com/trailer	Please visit our website
5	Waterman Supply	www.watermansupply.com	(310) 522-9698

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


smm-hamburg.com /trailer
the leading international maritime trade fair
SMM
driving the maritime transition
2-5 feb 2021
hamburg
SMM fuels change in the maritime industry by bringing together its most influential players and presenting solutions that make shipping greener, smarter and safer. Be part of it and see what's technologically possible, connect with peers and get fresh impetus for your business:
• 2,200+ exhibitors from the entire maritime value chain
• 50,000 industry professionals from 120+ countries
• Top-notch conferences and first-class networking events
SMM rescheduled for 2 - 5 feb 2021
save the date
Hamburg Messe + Congress
smm-hamburg.com/news
linkedin.com/company/smmfair
twitter.com/SMMfair
#SMMfair
facebook.com/SMMfair
youtube.com/SMMfair

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

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



GRIDCOOLER® Keel Cooler

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

WEKA Boxcooler®

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

Tranter® Heat Exchangers

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

FERNSTRUM®
R.W. Fernstrum & Company

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