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

Volume 29 • Number 12

Marine News

DECEMBER 2018
www.marinelink.com

Innovative Boats & Products

The Best of 2018

The Year in Review
Ten disruptive events & stories

Workboat Spotlight
Cenac's Arlen "Benny" Cenac Jr. navigates a different course

Fireboats
Responding to a red hot market

PERFORMANCE HAS A NAME.

For decades, Cummins has provided dependability and performance to marine operations around the world. And our legacy of innovation continues with our new X15 engine solutions.

The perfect size for inland waterway applications, the X15 gives you reduced fuel consumption, without reduced performance; and is an efficient option for a new build or a repower opportunity. Plus, it's backed by a 2-year warranty and our world-class support network in over 190 countries.

Innovative solutions from a name you can trust. No matter the vessel, Cummins will keep you Always On.

Contact your local authorized Cummins dealer or learn more at CUMMINSENGINES.COM/MARINE.

Cummins

ALWAYS ON

Clarion® Lubricants is committed to your success. That means reducing your risk of regulatory penalties while protecting your equipment and manufacturers' warranties. Let us show you how utilizing applicable Clarion Green BIO and Clarion Green Synthetic products can help you steer clear of fines and downtime.

clarion LUBRICANTS

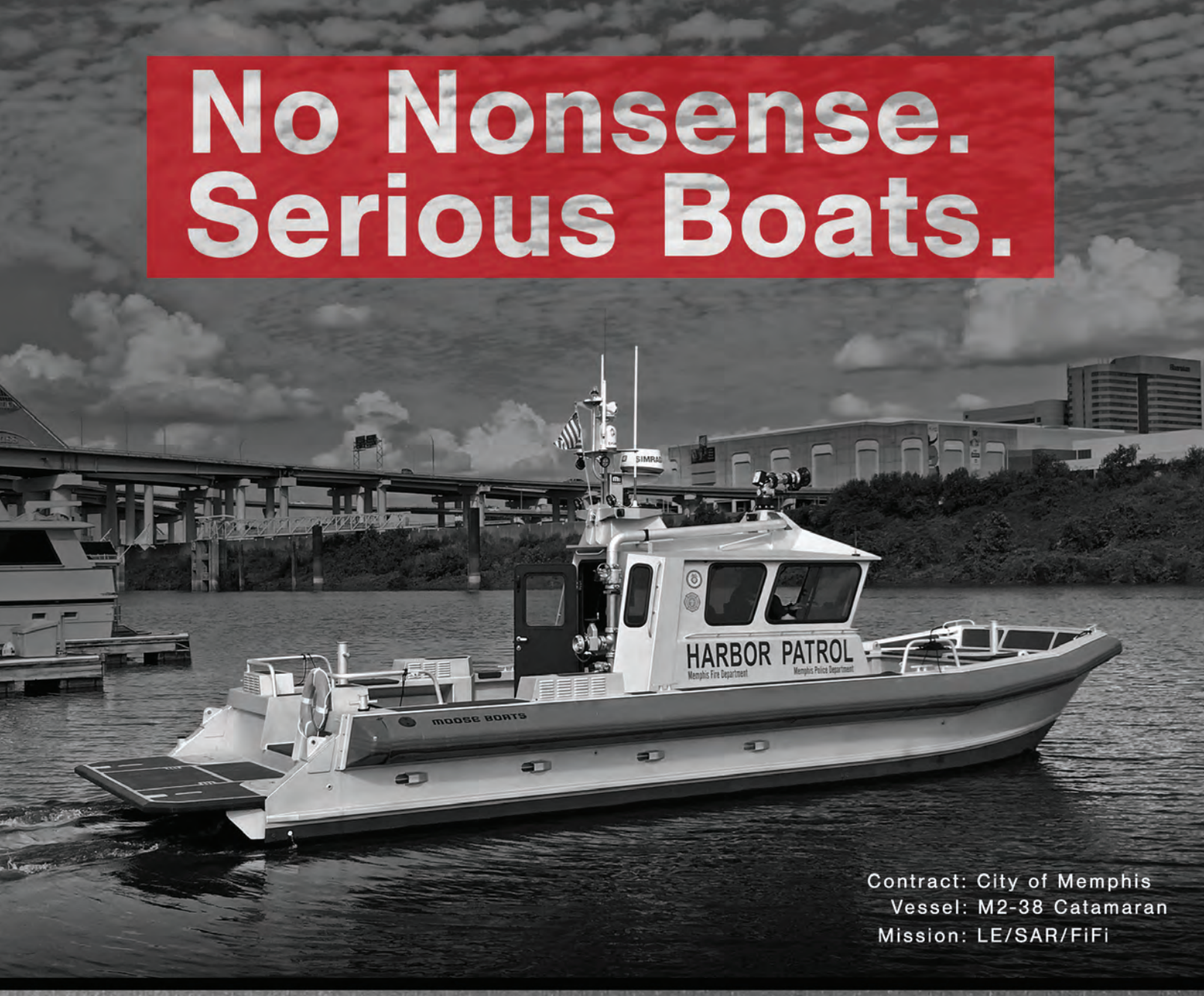
Visit us at ClarionEnviroSafety.com

Credit: Josh Gilliland

ON THE COVER

M/V Tazlina is the first ferry of its kind ever built in Alaska by Alaskans; for Alaskans. Elliott Bay Design Group and West Coast builder Vigor collaborated to create the unique vessel, which, to no one's surprise, is included in this year's *MarineNews* Top 10 Workboats. The story begins on page 36.

No Nonsense. Serious Boats.



Contract: City of Memphis
Vessel: M2-38 Catamaran
Mission: LE/SAR/FiFi

m2
MOOSE BOATS

www.mooseboats.com

Mare Island Naval Complex | Vallejo, Calif.

MarineNews

(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
Joseph Keefe • *keefe@marinelink.com*
Tel: 704-661-8475

Web Editor
Eric Haun • *haun@marinelink.com*

Contributing Writers
Susan Buchanan • Lawrence R. DeMarcay, III
Tom Ewing • Joe Hudspeth • 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 6220** 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
Mitch Engel • ***engel@marinelink.com***
Tel: 561-732-0312 Fax: 561-732-8063
Mike Kozlowski • ***kozlowski@marinelink.com***
Tel: 561-733-2477 Fax: 561-732-9670
Jean Vertucci • ***vertucci@marinelink.com***
Tel: 212-477-6700 **ext 6210** Fax: 212-254-6271

Managing Director, Intl. Sales
Paul Barrett • *ieaco@aol.com*
Tel: +44 1268 711560 Fax: +44 1268 711567
Uwe Riemeyer • *riemeyer@intermediapartners.de*
Tel: +49 202 27169 0 Fax: +49 202 27169 20

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 • *bibik@marinelink.com*

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

TO SUBSCRIBE:
Subscriptions to ***Marine News*** (12 issues per year) for one year are available for $60.00;
Two years (24 issues) for $95.00.
Send your check payable to:
MarineNews, 118 E. 25th St., New York, NY 10010.
For more information email Kathleen Hickey at:
k.hickey@marinelink.com

Departments & Analysis

MarineNews (ISSN# 1087-3864) is published monthly (twelve issues) 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.

keefe@marinelink.com

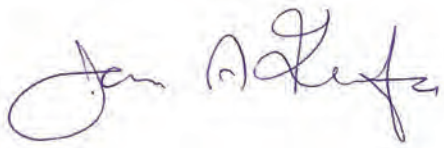
We arrive at yearend with the maritime industry in a period of change, with many sectors in flux, and the way we do business rapidly changing along with it. The first word that comes to mind to describe all of this might just be 'disruption.' Now, disruption is a much overused word in today's business lexicon, but this is one time that it is, quite simply, a perfect fit. Stay with me: *I do have a point.*

It was explained to me a couple of years back that, in order to understand what was happening on the water, you needed to first understand what happened to the automobile industry in the 1970's. Recognizing the dangers of lead, the federal government banned the use of it in gasoline. As it was phased out, this created a problem for car manufacturers. That's because the lead that was so bad for the environment also provided the necessary internal lubrication for the very engines that depended on gasoline for propulsion. It was a huge problem, 'disruptive,' if you will. Eventually, industry got through it and today, you are still able to sit in traffic, gnashing your teeth for hours in your morning commute.

Fast forward to present day, or if you like, project into the future to IMO's so called '2020 deadline.' In this case, industry is being asked – no, told – to lose all but a fraction of the sulphur that they collectively use within today's most commonly used marine fuels – diesel and heavy fuel oil. And when all of that sulphur departs the mix, it'll take with it – you guessed it – the critical lubricity that it provides. As with the auto industry in the 1970's, today's maritime stakeholders will no doubt rise to the challenge, as well. That might entail nano-thin internal ceramic coatings for engines, additives to the fuel itself, or any one of a number of other solutions.

That's all very interesting, you might say, and then ask, "What does the lubricity of engine fuel have to do with this edition?" Not a whole lot, actually. But, in terms of a disruptive event, it's pretty big. And, within our narrative (starting on page 28) outlining the Top Stories of 2018, we find that there have been more than a handful of disruptive events that demand our attention. For example, the destructive hurricane that destroyed much of the Florida panhandle also sees Eastern Shipbuilding Group clawing its way back to its full capabilities. And, when the Coast Guard's subchapter M towboat rules finally arrived in July, I can think of more than a few inland operators who would characterize that event as something that's 'disruptive.' Within that story are another eight equally disruptive subplots.

On a more positive note, this edition also announces the ***MarineNews*** Top 10 Workboats of the Year; each unique in its own way and each destined to create change on the water. Who says so? I do. And, if that's not 'disruptive,' then I don't know what is.



Joseph Keefe, Editor, keefe@marinelink.com

Authors & Contributors

MarineNews
December 2018
Volume 29 Number 12


O'Neill


Ewing


Paine


Credit: LinkedIn
Glud


Parker

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

Andreas Glud is the Group Segment Manager, Dry Dock for Hempel A/S.

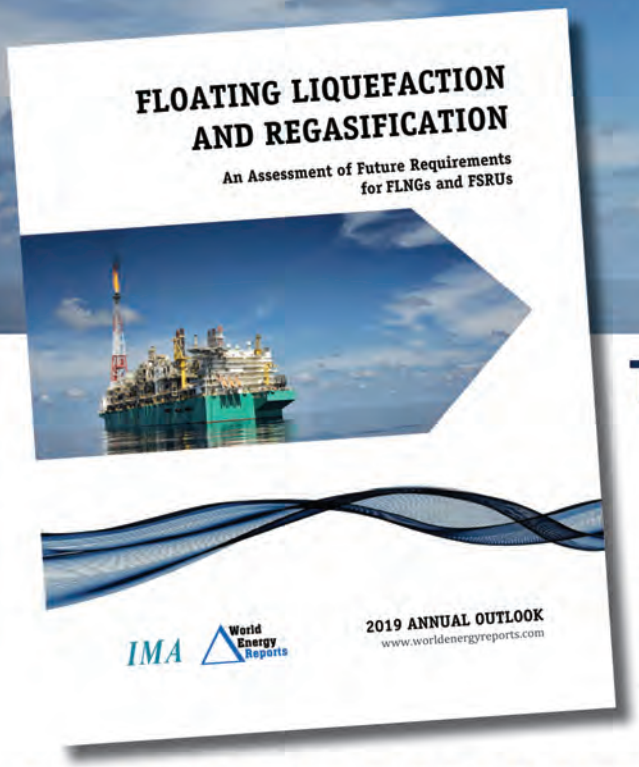
Randy O'Neill is Senior Vice President with Lancer Insurance Company and has been Manager of its MOPS Marine License Insurance division since 1984. Over the past 29 years, Mr. O'Neill has spoken and written on many occasions on the importance of USCG license protection. He is a regular contributor to ***MarineNews*** magazine. He can reached at: roneill@lancerinsurance.com

Richard Paine is a licensed mariner, certified TSMS & AWO-RCP Lead Auditor and DPA with over 20 years of maritime and auditing experience ranging from deep sea, tugs & towing, and passenger vessels. He is an alumnus of SUNY Maritime College in both undergraduate and graduate studies. A member of PVA's Safety & Security Committee, he is currently is the Regional Director, HSSQE for Hornblower's NYC Ferry & Statue Cruises operations. Richard can be reached at rjpainejr@gmail.com.

Barry Parker, bdp1 Consulting Ltd provides strategic and tactical support, including analytics and communications, to businesses across the maritime spectrum. The company can be found online at www.conconnect.com

REAL TIME ANALYTICS & REPORTS FOR THE FLNG/FSRU MARKETS

"The LNG industry is going through a dramatic transformation. Our 2019 Annual Outlook and real-time FLNG/FSRU database is unique. It is not simply a static report, rather a dynamic and ever-changing database with a continuously updated wealth of data, statistics, exclusive insights and analysis and critical project management contacts designed to keep you a step ahead of the competition.



THE 2019 ANNUAL OUTLOOK

76

FLNG Projects Tracked

There are numerous FLNG and FSRU projects in the planning stage. Not all will move to development. To sort the likely from the unlikely we developed a methodology to rate projects based on specific "success drivers".

130+

Exhibits & Infographics

The 2019 Annual Outlook contains over 55 exhibits and more than 70 infographics, so that you can easily visualize the market data being presented.

150+

Pages of Analysis

There are numerous FLNG and FSRU projects in the planning stage. Not all will move to development. To sort the likely from the unlikely we developed a methodology to rate projects based on specific "success drivers".

THE ONLINE DATABASE

We don't just provide a snapshot of the floating liquefaction and regasification sector. Our online fully searchable LNG database updates all of the project information on a 24/7 basis. As we receive new information about projects from our network of industry contacts, the database is immediately updated to reflect the latest situation.

Database users are able to select any combination of data about projects and export the data to excel for evaluation – or use the sorting and graphics provided with the database for making comparisons and benchmarking.

The FSRU database is a revolution in market insight, it provides real time analytics and information... Everything you need to stay informed of developments in the Floating Liquefaction and Regasification sector.

NO OTHER RESEARCH FIRM PROVIDES MORE INSIGHT INTO THE FLOATING LIQUEFACTION AND REGASIFICATION MARKET. CONTACT US TO LEARN MORE AT:

www.worldenergyreports.com

Alphabet Soup:

BTS, USACE, USCG & GAO All Weigh In on the complicated domestic waterfront.

The month of December is typically when we look back over the previous 12 months to see where we've been, how far we've come, and where we might be going. And, when it comes to U.S. flag tonnage, that process is always enlightening. That's because the domestic waterfront, perhaps now like never before, is always changing. How do we know? Well, this month, we polled the U.S. Coast Guard, the U.S. DOT's Bureau of Transportation Statistics (BTS), the U.S. Army Corps of Engineers' (USACE) Navigation Data Center, and just for fun, we pinged the Government Accounting Office (GAO).

What we often see is that the domestic waterfront is a complicated place, with many competing voices, sectors and special interests. *That's a key reason for the lack of a cohesive voice to advocate for U.S. maritime interests.* For example, the latest BTS (2018) Transportation Pocket guide is predictably chock full of data for other modes, but not so much the maritime sector. Nevertheless, there were tidbits of knowledge to be gleaned, and notable areas of change to be seen.

What does BTS want us to know? For starters, the Top 10 U.S. Water Ports (measured by short tons) contain no inland brown water ports. Digging a little deeper, the number of U.S. ports handling more than 250,000 tons of cargo annually fell during the ten year period of 2005 to 2015. No doubt, the advent of post Panamax ships spurred by an expanded Panama Canal in turn led to the bigger, richer ports dredging ever deeper to capture more market share. Expect that trend to continue.

Elsewhere, the domestic vessel count dropped by more than 1,000,000 hulls during the same period, led by a decline in recreation hulls, which probably reflected a miserable economy and fewer discretionary dollars available to spend on luxury items during much of that time. Indeed, every category of vessel measured by BTS declined in numbers over that span, notably led by moribund and dying U.S. flag blue water, deep draft fleet numbers. Moreover, the commercial fleet as a whole is getting older, and maybe this is good news for domestic shipyards who would like to see a bit more sunshine in their bottom lines. They may get their wish. In fact, as much as 41 percent – a whopping 17,596 vessels – of the domestic commercial fleet is now older than 21 years, some of it (13,353; 1%) 25 years or older (or in other words, far older than what the rest of the world deems ready for the breakers). More significantly, 61% of all U.S. flag self-propelled vessels are older than 25 years. *Our fleets need to be renewed and they need to be renewed now.*

There are bright spots: Domestic freight movements – both in terms of adjusted dollar value and tonnage – continue to climb and are forecasted to explode by the year 2045. The waterborne aspect of that metric is no different. We'll need vessels, bigger and more modern tonnage, to support that robust growth. We'll also need infrastructure.

Separately, the U.S. Army corps of engineers (USACE) has their own slant on what's important. Published in October of this year, The U.S. Waterway System 2017 Transportation Facts & Information document is a fascinating snapshot of what's happening for American infrastructure. For example, Corps and contractor owned dredges removed 230.8 million cubic yards (MCY) of material from Corps constructed and maintained channels in Fiscal Year (FY) 2017 (1 October 2016 to 30 September 2017) at a cost of $1,359.38 million. In FY 2017, maintenance dredging accounted for 94.9% of the quantities dredged, an additional 2.5% of the total yardage was attributed to Hurricane Sandy related work, and new construction (channel deepening) accounted for 2.6%.

The average cost/cy for maintenance work dredging was $5.36, and the average cost/cy for new work dredging was $16.25. Private dredging contractors removed 85.24% (197.7 MCY) of the material dredged for $1,197.4 million of the total FY 2017 Corps dredging expenditures. In FY 2017, 70 private dredging companies submitted a total of 300 bids for 123 contracts. Awards were made to 40 different companies, 12 large and 28 small. Philadelphia District awarded the most contract dollars in FY 2017 with $182.2 million. The New Orleans District had contracts dredging the most cubic yards (28.3MCY).

Quick Facts – Locks & Dams: The youngest Corps lock is Montgomery Point on the McClellan-Kerr Arkansas River system. The Willamette Falls locks on the Willamette River are the oldest locks owned and operated by the Corps and were built in 1873.

Trust Fund Facts: The Inland Waterways Trust Fund earned $114.4 million in Fiscal Year (FY) 2017. This included $113.73 million paid by the inland marine towing industry and interest of $0.675 million. The Trust Fund disbursed $108.4 million for construction projects leaving an available balance of $63.4 million for new construction obligations. The Harbor Maintenance Trust Fund equity increased $323.9 million to $9.1 billion in FY 2017. Total receipts and interest equaled $1,474.15 million in FY

2017. This included taxes from domestic commerce of $72.3 million and taxes collected from imports of $1,132.8 million. All transfers totaled $1,150.2 million; the U.S. Army Corps of Engineers received $1,110.9 million, a decrease of $152 million from $1,262.9 million in FY 2016.

Providing another twist to U.S. flag interests, The GAO produced a report entitled, ***MARITIME SECURITY: DOT Needs to Expeditiously Finalize the Required National Maritime Strategy for Sustaining U.S.-Flag Fleet.*** Echoing our frequently mentioned call for a unified voice from the domestic waterfront as it advocates on the Hill, GAO recommends that DOT complete the national maritime strategy and establish time frames for its issuance. DOT concurred – indeed Marad Chief Buzby has his staff working feverishly on that document – with a recommendation and provided technical comments. First, even with the annual Maritime Security Program (MSP) stipend, maintaining the financial viability of U.S.-flag vessels is a challenge. This challenge largely results from the higher costs of operating a U.S.-flag vessel. According to MARAD officials, the additional cost of operating a U.S. flag vessel compared to a foreign-flag vessel has increased from about $4.8 million annually in 2009 and 2010 to about $6.2 to $6.5 million currently, making it harder for such vessels to remain financially viable. Beyond this, government cargo volumes have fallen in recent years. In response, Congress increased the MSP stipend from $3.5 million per vessel for fiscal year 2016 to $4.99 million per vessel for fiscal year 2017. Although this has temporarily stabilized the financial situation of MSP vessel operators, trends in operating costs and government cargo will remain an ongoing challenge.

Alarmingly, the fleet of large U.S.-flag vessels engaged in international trade has declined from approximately 199 vessels at the end of 1990 to 82 vessels at the end of 2017. In February 2018, the number of U.S.-flag vessels dropped again, to 81 vessels. The heart of the U.S. merchant fleet, therefore, is its workboat, brown water sector. That won't change any time soon.

MARAD also found that the current number of U.S.-citizen mariners is insufficient to support sustained activation of the government-owned reserve fleet for military operations. The report estimated approximately 11,768 qualified and available U.S.-citizen mariners as of June 2017 – 1,839 less than the 13,607 mariners who would be needed for sustained operation of the reserve and commercial fleet. The working group based its identification of 11,768 existing qualified U.S.-citizen mariners on the number of U.S.-citizen mariners actively sailing on U.S.-flag commercial and government-owned ocean-going vessels.

According to most industry stakeholders, as many as 5,500 previously uninspected inland vessels have now been impacted by the new Subchapter M towboat rules. The July 20, 2018 deadline has come and gone. It's been a long time coming. As a regulatory program, the Coast Guard finalized Sub M in July 2016, setting a two-year implementation time-line. So, you might ask, how are we doing and how far along is industry as we look both astern, and to the horizon? We asked the U.S. Coast Guard. As it turns out, not nearly as compliant as we might hope. As of November 6th, a rundown of Subchapter M progress, IAW with Coast Guard Districts, shows slow progress towards the finish line, with almost 75% of all operators choosing the TSMS option.

Staying (and finishing) with our all-important inland waterways, we also turn back to our friends at the GAO, who issued yet another report, this one entitled: ***INLAND WATERWAYS / GAO 19-20 – Actions Needed to Increase Budget Transparency and Contracting Efficiency.*** As it stands now, the Corps requests – and Congress appropriates – annual funding that covers a portion of a project's estimated costs. But, this approach results in increased project costs because the Corps must contract for construction in separable pieces. Without some change in the way inland-waterways construction projects are funded to either provide full funding or reduce the effects of incremental funding by concentrating funding on fewer projects at one time, current cost increases and schedule delays resulting from inefficient contracting are likely to continue, as our table on the following pages shows:

Timelines for Ongoing New Construction Projects on Inland Waterways, Fiscal Year 2018

PROJECT	Year Started the Construction	Estimated Completion after Authorization	Year of Estimated Completion
Olmsted Locks & Dams	1993	2005	2018 (*)
Monongahela Lock & Dam	1994	2003	2023
Kentucky Lock Addition	1998	2007	2024
Chickamauga Lock	2007	2014	2023

Source: GAO presentation of U.S. Army Corps of Engineers information. | GAO-19-20

Subchapter M Progress (through 6 November 2018)

DISTRICT	Total COI's	TSMS Option	USCG Option
1st (New England)	14	11	3
5th (Mid-Atlantic)	10	9	1
7th (Southeast)	10	6	4
8th (Heartland/Gulf)	128	102	26
9th (Great Lakes)	8	2	6
11th (California)	2	2	0
13th (Pacific Northwest)	10	5	5
14th (South Pacific)	1	1	0
17th (Alaska)	3	0	3
TOTALS:	186	138	48

Source: U.S. Coast Guard

Key Basic Data

Year Benchmarked	2005	2015
Navigable Waterways (mile)	25,000	25,000
Ports (>250K short tons/year)	195	183
Cargo Handling docks	No Data	8,229
Lock Chambers	257	239

Domestic Vessel Count

Vessel Type / Year	2005	2015
Non Self-Propelled	31,296	31,043
Self-Propelled	8,976	8,951
Oceangoing / Deep Draft	231	170
Recreational	12,942,414	11,867 ,049
TOTAL US Vessel Count:	12,982,917	11,907,213

Source: BTS & USACE

Freight Shipments within USA by mode (billions $ / millions of tons)

MODE / YEAR ($$ / Tons)	2005 ($$ / Tons)	2015 ($$ / Tons)	2045 ($$ / Tons)
Truck	12,222 / 10,759	13,066 / 11,466	24,506 / 17,248
Rail	718 / 1,838	793 / 1,802	1,789 / 2,557
Water	430 / 654	486 / 722	947 / 1,068
Air / Truck-Air	650 / 7	766 / 7	3,126 / 25
Pipeline	1,301 / 2,963	1,486 / 3,358	1,867 / 4,646
Multiple Modes (a.)	2,148 / 424	2,325 / 444	5,192 / 1,013
Other (b.)	264 / 398	257 / 314	559 / 414
TOTALS	17,733 / 17,043	19,178 / 18,113	37,985 / 26,971

SOURCE: BTS (a.) Includes mail. (b.) Includes other, unknown, and imported crude oil with no domestic mode.

Employment in Transportation-Related Industries (thousands)

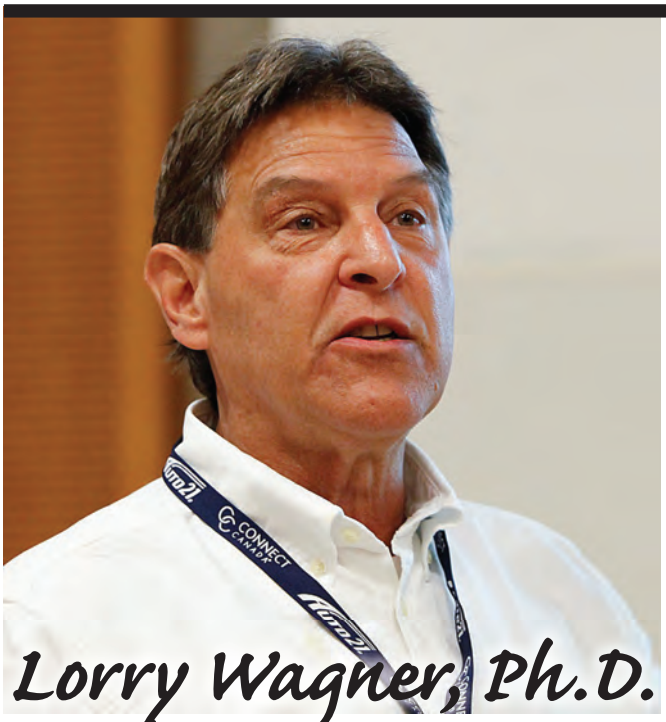
Category	2006	2016
For-Hire Transport/Warehousing	4,470	4,989
Air	487	459
Rail	227	215
Water	63	66
Truck	399	478
Pipeline	39	49
Scenic / Sightseeing	28	35
TOTAL (transport-related)	13,491	13,004

Source: BTS

U.S. Flagged Vessels as of December 31, 2017

TYPE / AGE	TOTALS	<= 5	6-10	11-15	16-20	21-25	>25
TOTALS	42,542	6,881	7,065	4,201	6,740	4,243	13,353
Self-Propelled	9,410	837	925	652	814	446	5,740
Dry Cargo	832	48	60	104	93	67	460
Tanker	79	21	22	14	7	3	12
Pushboat	3,382	421	353	169	196	106	2,137
Tugboat	2,462	128	243	139	185	84	1,683
Passenger	881	27	31	54	87	102	580
Offshore Supply	1,774	191	215	172	246	84	866
Barge (Total)	33,128	6,044	6,140	3,549	5,926	3,797	7,613
Barge (Dry / Covered)	11,452	1,835	2,090	998	3,210	1,695	1,623
Barge (Dry / Open)	8,281	747	1,019	1,416	1,529	1,322	2,245
Deck Barge	8,050	2,000	2,023	463	688	366	2,455
Dry Cargo	163	7	13	10	21	11	101
DH Tank Barge	4,991	1,453	993	660	476	393	1,016
Other Tanker	191	2	2	2	2	10	173

Source: USACE



Lorry Wagner, Ph.D.

President, Lake Erie Energy Development Corporation (LEEDCo)

Dr. Lorry Wagner has served as president of the Cleveland-based Lake Erie Energy Development Corporation (LEEDCo) since May of 2010. LEEDCo is the public private partnership behind the effort to construct Icebreaker Wind, a 6 turbine 20.7 megawatt offshore wind energy demonstration project in Lake Erie, 8 miles off the shore of Cleveland. LEEDCo has received funding from the U.S. DOE under its Advanced Technology Demonstration Projects award and has partnered with Fred. Olsen Renewables of Norway. Dr. Wagner's previous energy project experience includes nuclear, hydroelectric, solar, as well as wind. He received his undergraduate and graduate degrees from Purdue University where he developed several new heat transfer technologies for fusion reactors. Dr. Wagner has developed innovative solutions to industrial sensing challenges as well as building a land based wind project in the U.S. He previously served as CEO of several startups and is a member of Cleveland Underwater Explorers (CLUE). He brings extensive knowledge of the maritime environment, central to the deployment of offshore wind turbines. Dr. Wagner was awarded the Purdue Distinguished Engineering Alumnus award, was appointed by then- Governor Ted Strickland as the Public Member of the Ohio Power Siting Board, and has served as Chair of Purdue's School of Nuclear Engineering Advisory Committee. In 2016, he helped secure a $40 million Cooperative Award from DOE for Icebreaker Wind and in 2013 he was integral in securing the first offshore wind submerged land lease option in the Great Lakes. Separately, he was previously a Project Developer for the CWRU Wind Energy Research and Commercialization (WERC) Center Wind Turbine Research Facility and the Project Developer for the urban wind turbine at the Great Lakes Science Center. In a nutshell, Wagner is bullish on Cleveland, offshore wind, and, if he has his way, his vision for the first offshore Great Lakes wind project is about to become a reality. Listen in this month as he as explains how and why.

Tell us about LEEDCo – where and how it started and, more importantly, where it is going.

It goes back to 2004 to the Cleveland Foundation – the world's oldest community foundation and also one of the largest in the US – when Ronn Richard came in as the new CEO, and he asked, "What are we doing for economic development because we're losing jobs." And so they created an initiative to determine what the next big thing would be. Cleveland has done a lot over the years, but it effectively missed the IT boom, and was late to the biotech boom, etc. But, believe it or not, in 2004 they said, "The next big thing is energy." After all the research and looking at what skill sets were in offshore wind, it was clear that it [offshore wind] could be a real benefit to the region. The Great Lakes region is an ideal location to build an offshore wind industry: we have a fantastic offshore wind resource, we have an established and extensive advanced manufacturing sector, we have transmission capacity, we have retiring coal plants, and we have need for more clean energy, cleaner air and water. A number of community engagement and public meetings led to LEEDCo being created in 2009 as the

vehicle to move things forward. I was brought on in 2010 and since then we've been working to secure the one dozen plus state and federal permits needed, get the public to understand that this is really a good thing, secure off takers for the power output, and help develop the supply chain so that we can build a competitive industry.

You talk about this in terms of LEEDCo being a "public private partnership." What does P3 mean in the context of offshore wind?

Early on, it became apparent that there was a strong public component. Cleveland actually built a couple of the stadiums with a public-private partnership, so that was the genesis of the idea. We got the counties along the lakefront to join together with the City of Cleveland, the Cleveland Foundation, the Port of Cleveland and at the time there was a group called NorTech, which was a cluster development group. So, the private entities are the Cleveland Foundation and NorTech and the public entities are the City of Cleveland and the Counties. For us to secure site access in the lake we needed the Port Authority to co-sign a lease to allow us to get a lease with the state. The idea was to join the lakefront counties together where offshore wind could develop, and make them part of the team and then we're all working together and more importantly, that everybody shares in the benefits. For example, we have a revenue sharing agreement such that no matter which county the project goes in, the other counties benefit. The idea was to create this synergy between what was happening along the lakefront and then, of course, the City of Cleveland and the other groups. Initially, we were thinking we would be a pre-developer, to get things ready and then a private entity would come in. And in the early days, we actually attracted and engaged with a developer. But then they realized that offshore wind was not the kind of thing that suited their business model. So they left, and LEEDCo became the developer and then we won the DOE grants and we've attracted Fred Olsen Renewables to come in and actually build out and operate the project.

In terms of this whole public-private thing and the revenue-sharing and the collaboration along the waterfront, has that pretty much dissolved most, if not all, of the sort of NIMBY – Not In My Back Yard – thing that you see elsewhere on Cape Cod and places like that?

It has been very successful, and the support for Icebreaker is very broad and deep. We have support from the business, labor and environmental communities. But, like with all things these days, there is still some opposition. In our case, much of the opposition is funded by coal giant Murray Energy. And, despite the fact that wind projects do not pose a significant threat to birds, that myth has been perpetuated by a few birding organizations, some of which are funded by the oil and gas industry. We've given presentations at well over 400 public meetings and we continue to speak at events. So all things considered I think we've done really well.

The permitting process is very important. But, you've made real progress. For example, you've gotten your major federal approval (Environmental Assessment and FONSI), your Water Quality Certificate, and expect your section 404/10 permit in the next few weeks. The Ohio permit, most stakeholders agree, will come in early 2019. When that happens, will you be ready to go for construction?

I think what we've learned from the state permitting process is that it takes longer than we had hoped. I would agree that early 2019 for the permits is realistic.

In theory, then we'd be ready to go. But what you have is a two-year run-up to the actual installation of the turbines from the day you get all the permits; to get to financial close, order equipment, steel, etc. So yes, while it's true that the project is a "go" at that point, it will take two years before construction starts.

Give us an estimate in understandable language of the capacity of this initial project and what it will mean for the area.

It was always intended to be a small demonstration project. The project will power about 7,000 homes. As far as the city goes, that's roughly 10% of the Cleveland Public Power customers. Project construction will create 500 jobs and the project will create $168 million in economic impact over its life.

One of the biggest obstacles for the first offshore wind project that went in off of New England has been the competitiveness of the cost of the energy. Will any of this be subsidized by the government in any fashion? And, will it be competitive with the current local power provider, in terms of ultimate cost to the consumer?

The most important thing to understand is that all forms of electricity in this country are subsidized. The illusion is that the market determines it. But that being said, as a small demo project in an industry still in its infancy in the

U.S., our price is above the market price for electricity. We are the recipients of a Department of Energy grant for $40 million, which will help defray some of the costs. We also will take advantage of some potential tax credits, assuming they still exist when we go to build. We always knew we would be above the market price for electricity, but what I can tell you is that in Europe, where this industry started in 1991 and really, in earnest, over the last 15 years, it is now cheaper than coal or nuclear, and so it is competitive at scale. And if we look at the east coast and the US, the target pricing for the Maryland, Massachusetts and Rhode Island projects will be about half of what Block Island was. And so they're not going to be at market yet, but I think that they're definitely leading up to that. What is hard to capture in a conversation is that the development and scale up of every form of energy – let's take nuclear energy for example – has been funded significantly by the federal government. And, the first plant in the U.S. was 50 cents per kilowatt hour. Then, through subsidies and private investment, but also very good, private innovation and growth of an industry, nuclear power became competitive and a very good source of zero carbon energy. It takes time, it takes scale, and it takes government support. As the industry grows I have no doubt we will be competitive. It's just going to take time to get there.

J: So, the initial infrastructure, you're going to amortize that to a point where that's paid for, and once it is, then the cost of the energy will come down a bit. Would you agree with that?

Yes. Absolutely.

Where do you intend to get your blades and build the jackets for these things, and you've got these steel tariffs now looming. Has the price of your project just gone up? Can you do this domestically, or will you have to get foreign steel?

That's a great topic that everybody is interested in. Let's start with the turbines themselves. They typically come out of Denmark or Colorado. They're made in Colorado, they're made in Denmark, and one of the challenges we

have is getting these large blades over the road from Colorado to Cleveland. So we'll be developing a process to see if we can, indeed, get them from Colorado as opposed to just putting them on a boat in Denmark and shipping them to the Port of Cleveland. So that would be the blades, and then the towers – we are trying very hard to use a US supply partner. They currently make towers and they're certified by most of the manufacturers, but an offshore tower needs a separate certification process. Let's just say they are heavier steel and the coatings are much more robust. So, a worst case scenario we think would be the towers come from the US and then the nacelle and blades come from Europe. And then as far as the foundation goes, we always intended to build that in the US, and so we went out for a first round of bids and we found five suppliers that were competitive and also had the requisite quality control system, safety, good history, and understanding of making large steel fabrications.

Are you worried about the tariffs adding to your costs?

What I can tell you is that the day the tariff went in place, all the domestic steel went up 25%, because they now found that they could demand that. We are concerned about that and going forward we're glad we don't have to order steel today because the foundations would be more expensive. So we're hoping that we would be ordering steel maybe a year from now and that prices will have stabilized, but that is a big concern because they could just as well could go even higher if there is a trade war.

***MarineNews* will want to know the types and numbers of vessels you plan to use to build this offshore project. Will they be Jones Act-approved? Where do you intend to get them? Will you build? And can you even get the equipment in through the Locks? Lead us through the marine aspect of the particular project – something no less complicated than the rest of it.**

From a development standpoint and cost standpoint, the marine aspects, the marine installation, is the biggest challenge. And it is because the St. Lawrence Seaway was built a little bit narrow to restrict competition with the east coast. So, we do have that challenge. We've looked at a number of solutions, including modifying a US vessel. If you turn the page back, how did Europe start? And if we go back to 2000, that's exactly what they did – they modified existing barges or crane vessels to be able to handle the load. So that's one path. We also have looked at non-US vessels – there are several that will go through the locks and do the job, and so we would attempt to do something similar to what was done at Block Island and follow the Jones Act where the vessel stays offshore and you use feeder barges.

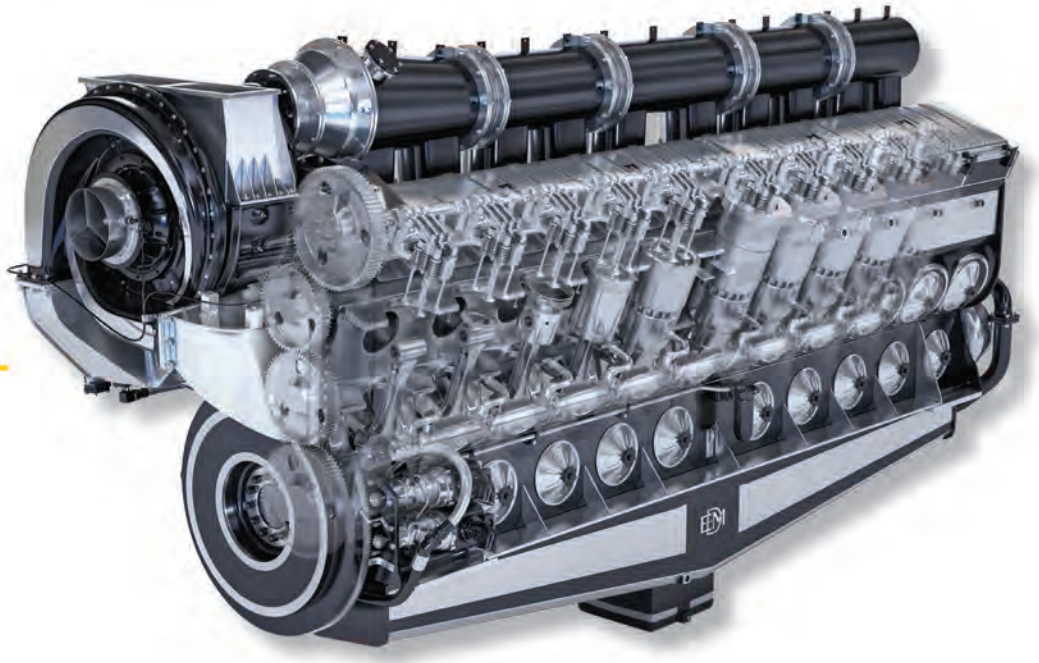
That particular vessel would only handle the equipment once it was brought out there and you would have your Jones Act feeder vessels bringing your equipment to you?

Right. While that, in a way, is the most straightforward solution, once that vessel leaves, you're stuck in the sense that you'll need something for maintenance – although this would be a smaller vessel. But, that leaves you to start all over again if another project is built. So our "51 percent lean" is toward using a US vessel and modifying it, and then it would give us an operation and maintenance solution. There are some solutions very close, but it is using, shall we say, what the Europeans did 15 years ago.

Over time, the Europeans have developed what we would consider the "gold standard" in those sorts of vessel designs simply because they've been doing it longer than we have. In fact, the only US flag crew-tender that's in use in the United States was built by Blount Boats in Rhode Island, but it was built to a Southboat design, which is a UK-based company that's been doing this for years. Tell us a little bit more about your thought process.

The other thing we're looking at is crew vessel solutions. Part of the beauty of the Great Lakes is that, certainly in Lake Erie, we've got the chop but we don't have the swells that you get in the Atlantic. And you can look at the distances involved, ours is about 10 miles, but if you think about other lakes, you're probably looking at 25 miles. So, there are other vessel solutions and they're more cost-effective. Looking at what Europe has done and then looking at our own situation, we can come up with hybrid or new solutions that haven't been used. That's because the offshore wind industry started with oil and gas people, and oil and gas solutions. Similar to the Gulf, you have crew boat solutions that are very robust, but they're designed around carrying a lot of people. All that said; we, and our European partners, have started looking at things that are much more tailored to the Great Lakes. We've looked at some of those laid-up Gulf of Mexico vessels and while we would never build one like it, we can get it at the right price, and it will work just fine. So, we do have a lot of options in that area.

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 · DNV·GL

TWO CYCLE ADVANTAGE

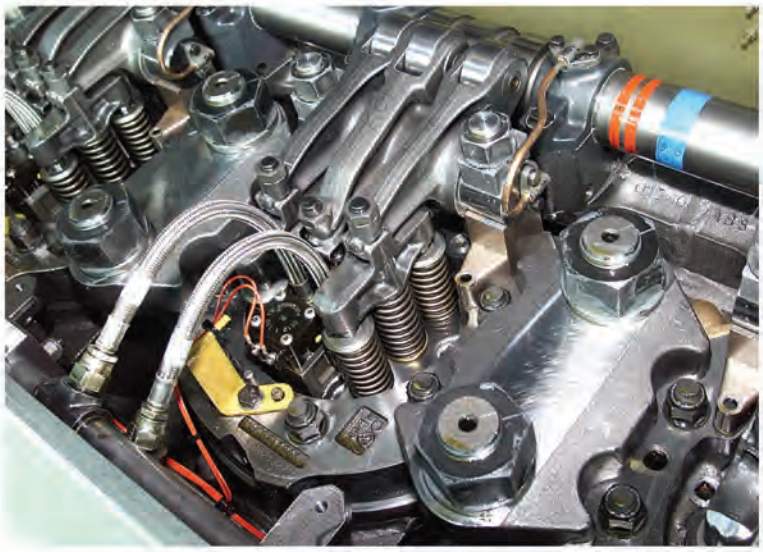
ENDURING DESIGN. LEGENDARY HERITAGE.

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

A Costly Lapse in Judgment

By Randy O'Neill


O'Neill

An allision in the maritime sector is defined as an accident in which a moving object strikes a stationary object (bridge fender, bridge deck, dock, dredging vessel, etc.). According to the Maritime Law Association (MLA) such an accident calls the "Oregon Rule" into play. Simply put, the Oregon Rule states that *"…when a moving object hits a stationary object, the moving object is presumed at fault. The moving vessel thus has the burden of proving an alternate theory of causation to show that the stationary object was actually at fault."* Good luck with that.

The issue of allision is topical again today because in recent weeks, bridge allisions have been reported on by the maritime and, in some instances, the general media after a barge-mounted crane struck a popular commuter bridge in Donaldsville, Louisiana resulting in damage to the Sunshine Bridge that officials say will cause the bridge to be closed to traffic for "…at least several months" to make necessary repairs.

And while the 'busy season' for bridge allisions is usually in the spring when rain and snow melt swell the rivers, this season's unusually high rainy conditions in the upper and lower Midwest have created unusually dangerous high water conditions this past Fall.

Credit: Petty Officer 2nd Class Anthony L. Soto

Pre-Trip Analysis is Critical

It has always been important for river pilots to know the depth, width and height of their vessel and, perhaps more importantly, those same measurements of whatever their vessel is pushing or pulling. While those measurements are generally a constant for their vessel, the variances of the size and configuration of that day's job are not. And while water levels change and navigable channels widen and narrow, bridge heights do not. So it's up to the pilots to make adjustments to their calculations and safety margins according to that day's river conditions. If that is not done, the resulting bridge allision could be the beginning of a very long and costly legal battle for the involved pilot to defend his/her license … and, quite possibly, professional career on the river.

To illustrate that point, we take you back to the story of a pilot serving onboard a towboat on a Midwest river and towing astern a 50'x50' flexifloat spud barge. On board the barge was a deck hand and two observers. The towboat pilot in question had towed flexifloat barges previously, but it was his first trip towing this specific flexifloat spud barge. The trouble began when he 'eye-balled' that the spud height above the water was approximately 33-34 feet. Unfortunately, he did not directly measure the spud height, inquire about the exact height or go onboard the barge to check the height himself. What made matters worse, was the fact that these particular spuds could be positioned either all the way up or all the way down significantly changing their height depending on how they were engaged.

Moment of Truth

The pilot then commenced what was planned to be a four mile transit route requiring passage under a vertical lift railroad bridge. The bridge, which has a vertical clearance of 35' when down and 135' when raised, was manned 24/7 by an operator who could raise it partially or completely depending on the circumstances and communications received from approaching vessels via marine radio,

Seeing that the bridge was in the down position as he approached, the pilot judged that "… he and his tow could clear the bridge with no problem." The conditions were very favorable: daylight, an ebb current and four nautical

miles of visibility.

The towboat passed under the bridge without incident but, as the flexifloat being towed was proceeding underneath the bridge, the bridge the spuds in the fully upright position allided with the lower steel beam of the bridge resulting in damage to the spuds.

While the towboat pilot was assessing damage to the barge and attending to other on board safety issues, the bridge operator immediately reported the incident to the Coast Guard before contacting the pilot to confirm that his tow had indeed struck the bridge. The pilot acknowledged the allision and reported that the lower two bolts of the forward spud were visibly bent over but still in the well, and the aft spud well's upper bolts were broken causing the aft spud and well to bend backwards. He further reported no damage to his vessel or, to the best of his knowledge, the railroad bridge.

The pilot then promptly reported the incident to his license insurer and was assigned a local maritime attorney to prep him for his initial 'informal' onsite USCG interview, preparation of the required Maritime Casualty Report (2692) and, eventually, accompanying him to his formal USCG interview.

Not much Room to Maneuver

Unfortunately, the formal USCG interview which took place a few days later was a short meeting as the pilot was promptly charged with negligence for both failing to properly check and verify the height/draft of the barge's spuds and failing to request the bridge operator to raise the crossing on his approach. He was then offered a "Settlement Agreement' stipulating his acceptance of an outright three (3) month suspension and surrender of his USCG license, with an additional nine (9) month probationary period following the completion of his 90-day suspension.

After debating the merits of contesting the terms of the Settlement Agreement being offered, both the pilot and his attorney agreed that, given the wording of the Oregon Rule and the absence of any valid mitigating circumstance, the most prudent, albeit painful, decision was to accept the Coast Guard offer and surrender his license.

The one silver lining was that the pilot had opted for income protection when purchasing his license insurance policy so he received his insured wages for the duration of his three-month suspension. While softening the economic impact, no amount of money could compensate the damage to his professional reputation caused by two lapses in judgment … not verifying the spud's height in the raised position and not requesting the railroad bridge to be raised.

As today's maritime media continues to focus on bridge allision incidents, particularly their negative consequences to the free movement of people and goods, river pilots should take all prudent action to satisfy the old axiom when it comes to bridge clearances … better to be safe than sorry.

Randy O'Neill *is Senior Vice President with Lancer Insurance Company and has been Manager of its MOPS Marine License Insurance division since 1984. Over the past 29 years, Mr. O'Neill has spoken and written on many occasions on the importance of USCG license protection. He is a regular contributor to* ***MarineNews*** *magazine. He can reached at:* ***roneill@lancerinsurance.com***

2018 Green Apple Spill Exercise

Committed to providing tugboat and towing vessel operators with a platform to meet regularity requirements and collaborate with local resources, the annual event also reminds us that ***Proper Planning Prevents Poor Performance****.*

By Richard Paine, Jr.

Paine

On September 28 2018, American Marine Associates, LLC (AMA) coordinated and hosted the 3rd annual Green Apple Spill Response Exercise in Bayonne, NJ. The Green Apple Spill Response exercise was established specifically for the tugboat and towing vessel industry operating in New York Harbor. In its third year, the focus of the Exercise remains committed to providing tugboat & towing vessel operators, such as this year's participants, Dann Marine Towing, Donjon Marine, and the Vane Brothers with a platform to meet regularity requirements and collaborate with local resources and more importantly, put names with faces, of those who would respond to an oil spill catastrophe in New York Harbor.

As in previous years, participants from multiple sectors were in attendance representing a vast array of response services. Importantly, this year's Exercise included over 25 representatives from United States Coast Guard Sector New York, the U.S. Environmental Protection Agency (EPA) Region 2, Oil Spill Removal Organizations' (OSRO), National Response Corporation (NRC) and Marine Spill Response Corporation (MSRC). "NRC enjoys participating in the Green Apple Spill Response exercise, not only because it's a great chance to meet some of our clients, regulatory agents of Coast Guard, EPA and Qualified Individuals, but it is also a requirement of the National Preparedness for Response Exercise Program, or PREP" said John Hielscher, Northeast Regional Manager, of NRC.

The Green Apple Spill Response Exercise was devised to meet the 2016 National Preparedness for Response Exercise Program (PREP) guidelines and NT-VRP (Non-Tank Vessel Response Plan – 33 CFR Part 155.5010) requirements of the Operators. The exercise scenarios are developed for Operators to maintain compliance with OPA 90-mandated federal oil pollution response exercise requirements. (Note: The new 2016.1 PREP Guidelines are effective of October 01, 2018.)

Additionally, unique to the Green Apple Spill Response Exercise, is the participation from other support services involved in an environmental pollution response and recovery incident such as the American Club representing the Protection & Indemnity (P&I) insurance side of the claim process, as well as demonstrations and subject matter expertise from spill clean-up and recovery absorbents innovators, New Pig Corporation.

According to American Marine Associates, the goal of the Exercise is not only to test response plans, but also to educate stakeholders with new technology, processes and advances in prevention and recovery techniques that may benefit them during and after a pollution emergency. "Many entities do not realize the role played by P&I Clubs in the event of Oil Pollution" said Captain Sanjive Nanda, VP & Senior Claims Executive, the American Club. The Green Apple Spill Response Exercise accomplishes that goal.

Perhaps one of the best aspects of the Green Apple Spill Response Exercise is that scenarios are developed from current events affecting the industry. This year's scenario was drafted using and modifying some of the root-causes discovered in the grounding and sinking of the Nathan E. Stewart oil spill near Bella Bella, British Columbia from October 13, 2016.

The articulated tug-barge composed of the tug Nathan E. Stewart and a tank barge went aground on Edge Reef near Athlone Island, at the entrance to the Seaforth Channel, just west of Bella Bella, BC. The Nathan E. Stewart's hull was breached and approximately 29,000 gallons of diesel fuel were released into the surrounding waterways and natural environment. Ultimately, the tug sank and separated from the barge. According to the Transportation Safety Board of Canada's investigation report, contributing factors included the second mate was standing watch alone on the bridge and had fallen asleep, thus missing a planned course change leading up to the grounding. Additionally, fatigue was considered a key factor as provoked by his previous days' workload and limited rest.

This year's Exercise built upon the Nathan E. Stewart spill and added an existing trend facing the maritime industry, operator distraction. The Exercise utilized a scenario where the Captain of the tug had just left the barge at the Gravesend Bay Anchorage and was using his cell phone while on

watch in the midst of a spirited conversation with his home. The Captain became distracted and veered off course entering the Narrows into New York Harbor, ultimately hitting the northbound Verrazano-Narrows bridge. The tug's hull was breached and released 91,000 gallons of Diesel fuel into New York Harbor, impeding commerce and impacting natural resources.

The scenario provided a worst-case discharge for not only the participating operators, but also for many of other Operators transiting through New York Harbor. This type of scenario drives home greater collaboration of response and recovery efforts, while providing operators with a greater scope of resources available and needed in the Harbor.

The Exercise also generated dialogue surrounding new technologies and their effectiveness. Such topics included the use of drones to monitor spreading of oil radius through video and temperature sensing technology, the reduction of waste oils through microbial action, and advances in training through oil spill marine causality simulator programs such as the Kongsberg platform recently introduced.

When Operators and service professionals gather as they do at the Green Apple Spill Response Exercise and other similar events, they not only test their emergency protocols for meeting regulatory requirements, they also follow the "5 Ps of Success" mantra: *Proper Planning Prevents Poor Performance.*

The Green Apple Spill Response Exercise takes place annually in the tri-state New York/New Jersey/Connecticut area and is tentatively next scheduled for September 27, 2019.

Richard Paine *is a licensed mariner, certified TSMS & AWO-RCP Lead Auditor and DPA with over 20 years of maritime and auditing experience ranging from deep sea, tugs & towing, and passenger vessels. He is an alumnus of SUNY Maritime College in both undergraduate and graduate studies. A member of PVA's Safety & Security Committee, he is currently is the Regional Director, HSSQE for Hornblower's NYC Ferry & Statue Cruises operations. Richard can be reached at* ***rjpainejr@gmail.com***

(*) all images courtesy Cruden

Training Day: Cruden's pioneering Fast Craft Simulator

Marine simulators are commonplace in the training and development of crew for large vessels. Not so much for small, fast patrol and attack craft.

From the mid to late 1970s, marine simulators developed into a viable training tool for trainee mariners. Their initial popularity developed as opportunities for practical training became scarcer and a lot costlier, too. Since then, however, the advancement of the technology has brought a new dimension to professional crew training for small, fast craft. We gained exclusive insight into this hyper-realistic advanced technology from Cruden's CEO Maarten van Donselaar.

With the success of aerospace simulators in reducing costs and fast-tracking trainees, the use of simulators in the marine context has become an important part of safety training and bringing trainees up to a higher level of competency before being let loose on large vessels. Today, the most common simulators used in our industry include those that replicate, to an incredible level of detail, a ship's bridge and control, the engine room, cargo handling, communication and Global Maritime and Distress and Safety Systems (GMDSS) plus remotely operated vehicles (ROVs).

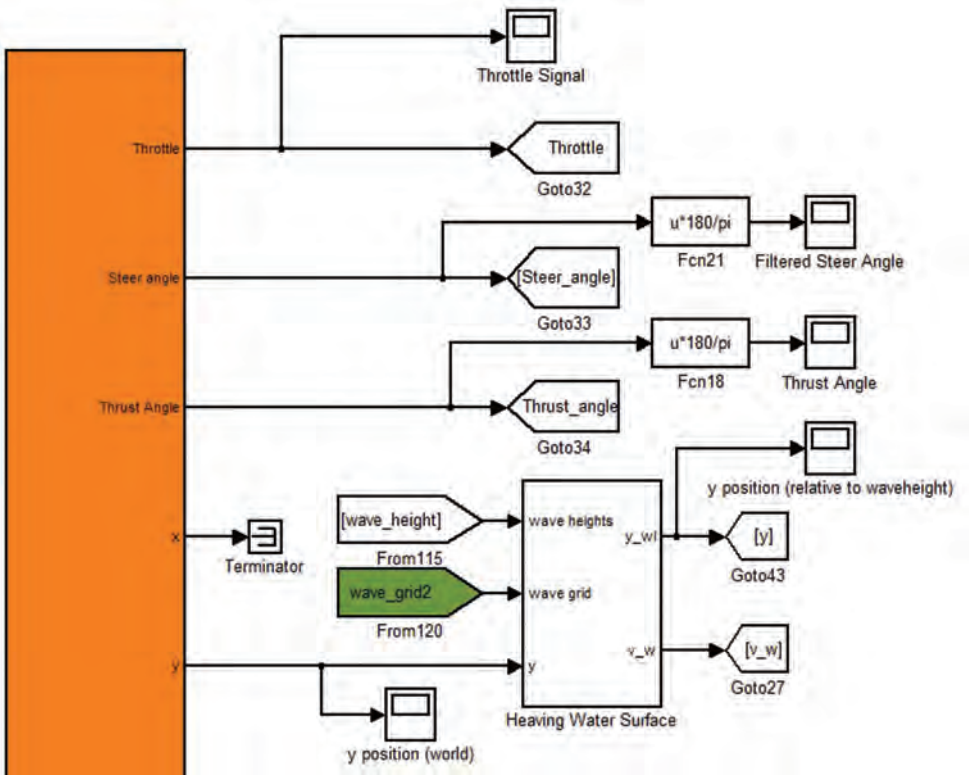
While the current crop of simulators can give novices control of anything from a Panamax container ship right up to an Ultra Large Crude Carrier (ULCC), very little has existed in the way of highly realistic tools for high-speed craft. Up to now, replicating the real-world effects of performance, handling and safety procedures for small, fast boats was, and still is, an incredibly complex task given the speed and rapid responses required to replicate the real-world experience. That training has therefore largely remained out of reach. Until now.

The Advent of Fast Craft Simulation

This all looks set to change following the recent unveiling of a production-ready fast craft simulator Dutch simulator manufacturer and integrator, Cruden. Maarten van Donselaar, CEO, Cruden, explains, "Cruden is already well-known as a provider of simulators, from our background in the motorsport, automotive and aerospace industries. For automotive and motorsport in particular, simulators play a role in the research and development of systems and vehicles. However, in the marine context, they serve predominantly as a training tool and are already widely used to train students on large vessels where movements are responses are much slower. Now though, we are seeing a particular need for a highly realistic, dynamic training tool for fast craft that complements training at sea and one that has been developed to offer training organizations increased hours; reduced costs; repeatable, programmable conditions and scenarios; realistic and detailed data-led AAR; and protection to trainers and trainees from physical stress."

Cruden's Fast Craft Simulator is the culmination of over six years of development and testing to ensure the proprietary hardware and software can replicate repeatable scenarios with the utmost accuracy and sensory realism.

"The Fast Craft Simulator is more akin to a Formula 1 set-up where a few milliseconds lag in system response can unsettle the operator because drivers are very sensitive to correctly timed responses to their input or the effects of hitting a curb. Our architecture is developed to minimize latency. Over the past six years we've worked closely with the likes of the Florida Powerboat Industry and military end users plus training providers worldwide to gather as much knowledge on boat specifica-



"We are working with a range of partners ranging from Special Forces and coast guards who deploy boats from OEMs like Boomeranger, MST, Damen and Holyhead. Training simulators go beyond just boat and crew performance assessments, it also has the capability to incorporate shore-based communications, targeting and weapons simulations."

– Maarten van Donselaar, CEO, Cruden

tions measuring physical parameters as well as every aspect of their behavior and characteristics on the water. Of equal importance is understanding the training needs in terms of the course content and evaluation criteria. Our team of experts then designs and builds the fast craft simulators exactly according to client specification," says van Donselaar.

While being able to replicate the flat water performance of a high-speed boat is impressive in itself, we pressed van Donselaar on how surface conditions can be simulated accurately. "Once we've mapped the measured parameters of the boat to the simulation model, we then begin the validation by actually measuring how the boat responds to input in various sea states and use the results to fine-tune parameters and map the surface conditions," he replied, adding quickly, "Only then are we able to build a variety of highly accurate scenarios."

"The integrated nature of all our systems means that the software and hardware are developed to complement each other and trainees will practice in front of ultra-high definition screens and simulation-grade projectors capable of delivering a horizontal field of view ranging from 210 degrees to a full 360 degrees. This enables the training provider to accurately assess students as the two parts of the system work together seamlessly for a hyper-realistic experience."

In addition to this, Cruden is currently working as part of a joint venture between the Marine Research Institute Netherlands (MARIN) and the Dutch Ministry of Defense to develop a new Fast Small Ship Simulator (FSSS). "Cruden has the capability to make simulators for virtually any requirement and our team will structure the system to mirror anything from small RHIBs to 100 ft patrol boats. This includes hull mockups mounted to the motion system that moves in six degrees of freedom. This allows the trainee to experience high-speed turns and recognize violent slam-

ming. We account for all scenarios thanks to the computer algorithms, but stop short of making it too extreme in the case of high G-force 'slamming', to eliminate any risk of knee or back injuries. The flexibility of this system is integral to making it a viable tool for craft-type training as well as defense-based scenarios," adds van Donselaar.

The arrival of Cruden's Fast Craft Simulator and development of the FSSS coincides with the growth of this market both for high-performance vessels used in law enforcement and search and rescue as well as special defense force and naval operations. The need for such training tools is adding a whole new dimension to the way in which mariners can learn and develop their skills.

Maarten van Donselaar explains: "We are working with a range of partners ranging from Special Forces and coast guards who deploy boats from OEMs like Boomeranger, MST, Damen and Holyhead. Training simulators go beyond just boat and crew performance assessments, it also has the capability to incorporate shore-based communications, targeting and weapons simulations. For weapons integration, we work with Meggitt Training Systems and so, whatever a fast craft is equipped with in real life, will also feature on the training simulator.

"Practical training has become more and more expensive as well as time consuming and it is also beholden to the prevailing weather conditions. Plus, it also carries a high element of risk. Our simulators can now enable training providers to overcome these challenges in a controlled environment whereby students can be closely assessed and correctly trained and prepared before the practical examination."

Credit: U.S. Sea Machines

THE TOP 10 STORIES FOR 2018

Choosing the 'top stories of 2018' was, this year, a difficult task. Many compelling story threads played out, dramatically impacting the North American waterfront, and in particular, the workboat sector – each in their own unique way. Read on to find out how and why.

By Joseph Keefe

Autonomous Vessels: Ready or Not, Here They Come

Futuristic, remote-controlled autonomous marine vehicles aren't coming. They are here. As the pace of change quickens, autonomous vessels are already providing service and value on the water. Out ahead of the rulemaking process, autonomous technology providers already churn out not just prototypes and designs, but also countless workboats, many already in service. For example, Robert Allan and Kongsberg Maritime are collaborating on a remotely-operated fireboat design that will allow responders to attack fires more aggressively and safer than ever before. Separately, Sea Machines demonstrated the capabilities of its SM300 product aboard an autonomous-command, remote-controlled TUCO fireboat. And, in July, shipbuilder Metal Shark joined forces with ASV Global to introduce "Sharktech" Autonomous Vessels. Scores of these hulls are already in service, filling myriad roles. One firm, ASV global, has been putting autonomous solutions on the water for many years. They've delivered more than 100 new build USVs; far ahead of its nearest competitor.

Metal Shark's Big Year

Delivering more than 14 ferries in less than 18 months might be a tall order for some yards, but not for Louisiana-based Metal Shark. At the company's 15-acre Jeanerette, Louisiana production campus, Metal Shark focuses on the production of smaller, trailerable vessels. Metal Shark's nearby 25-acre Franklin, Louisiana shipyard, opened in 2014, specializes in the production of larger vessels. Meanwhile, Metal Shark is implementing its methodologies, production and project management systems at its new "Metal Shark – Alabama" facility (formerly Horizon Shipbuilding). Metal Shark – Alabama supports aluminum and steel shipbuilding for vessels of up to 300' in length and 1,500 tons launch weight. A partnership with autonomous technology provider ASV global rounded out an exciting year, with more still to come. All told, Metal Shark was clearly one of the big success stories of 2018 and the firm continues its growth as one of the most diversified shipbuilders in the business.

Credit: Herbert engineering / Marad


Credit: Tidewater

Credit: Metal Shark

Credit: Vane Brothers

The TDW / GulfMark Merger

It wasn't too long ago that offshore giant Tidewater emerged from Chapter 11 Bankruptcy. GulfMark did the same. Shortly thereafter, the two firms agreed to merge. Along the way, an unsolicited bid from HGIM for GulfMark made the news even more interesting. The combined company will have the largest fleet, broadest operating footprint in the OSV sector. According to Tidewater CEO John Rynd, the fact that both companies worked through the process of restructuring and emerged with strong balance sheets and low leverage was an underlying enabler for the combination. The combined company will have a larger Jones Act fleet, but the percentage of the overall fleet that remains U.S. flagged will depend on where the firm sees best opportunities for its combined fleet. Whatever the outcome, and without a doubt, this merger represents a profound game changer for the global and domestic offshore energy support markets.

Marad Issues RFP for Long Awaited NSMV

The Maritime Administration (MARAD) in October released a Request for Proposal (RFP) to solicit for a Vessel Construction Manager (VCM) to deliver a new class of training ships referred to as a National Security Multi-Mission Vessel (NSMV). "The U.S. shipbuilding and repair industry is vital to the economic strength and security of our nation," said Maritime Administrator Mark H. Buzby, adding, "and this project will demonstrate that American shipbuilding remains the global standard of excellence." The NSMV will help to sustain world-class, U.S. maritime training operations at the State Maritime Academies, leveraging space for up to 600 cadets to train in a first-rate maritime academic environment at sea. Beyond this, the NSMV will also be available to support federal government efforts in response to national and international disasters, such as hurricanes and earthquakes. A persistent, long shot effort has produced fruit at last.

At Long Last, Subchapter M Arrives

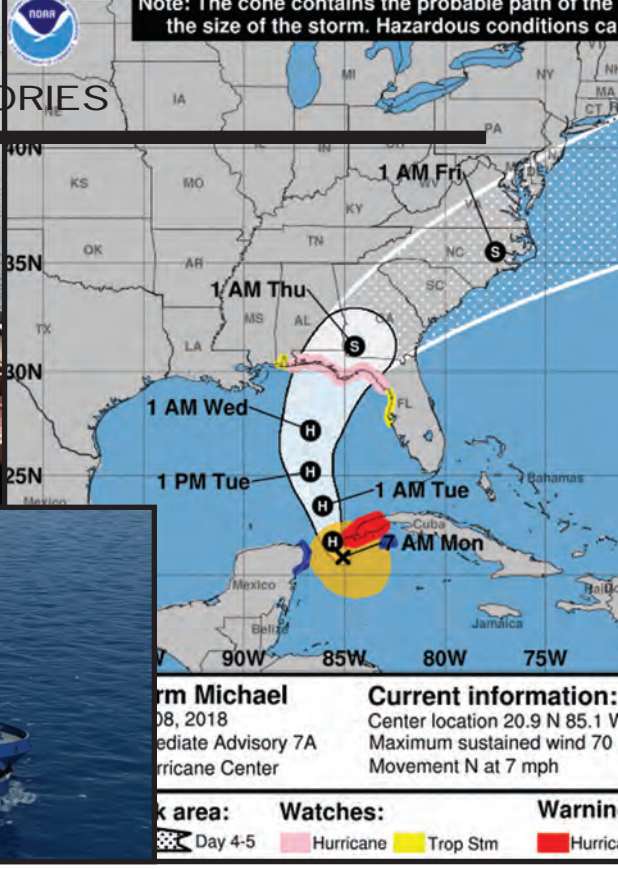
July 20, 2018 was a critical date for towboat operators; the deadline for some U.S.-flag towing vessels to comply with Subchapter M, the U.S. Coast Guard's towing vessel safety regulations. Central to subM is the Coast Guard issued Certificate of Inspection (COI), which ultimately permits the vessel to legally operate. There are two paths to certification. One is to arrange for USCG inspectors to inspect and approve a vessel's towing safety management system. The second is to work with an approved third party organization which independently documents that a vessel meets subM's requirements and recommend that the USCG issue a COI. The American Waterways Operators estimates that Sub M adds about 5,600 vessels are impacted by SubM. By July 19, 2022, all must be inspected. How are we doing? According to the U.S. Coast Guard, just 186 vessels, or a paltry 3% of the subM fleet now have COI's (as of November 6).

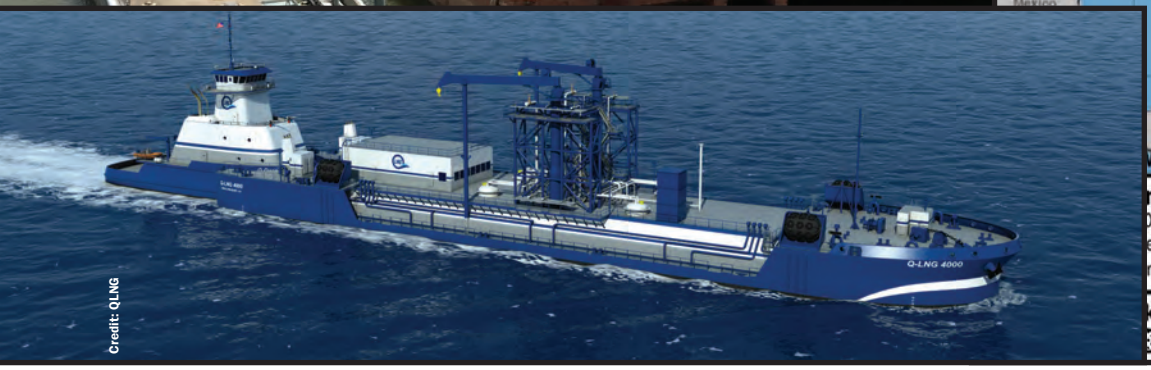
The Advent of Offshore Wind

Amidst an atmosphere of resurgence in the domestic offshore oil energy, stakeholders are reminded that there is more than one kind of offshore energy. Now underway on Lake Erie, it has already happened off New England. And, last April, the Department of the Interior's Bureau of Ocean Energy Management (BOEM) published a 'Call for Information and Nominations,' a formal process for BOEM to gather information about interest in commercial wind energy in the Atlantic outer continental shelf. Curiously, offshore wind, a long awaited source of renewable energy, has as many detractors as its fossil fuel cousins. Maritime groups are closely watching these developments; in particular, the American Waterways Operators. At a time when offshore wind finally seems ready to flourish on this side of the pond, decades after proven feasible offshore Europe, it is clear that the regulatory process will be no less onerous than that which has historically dogged the oil industry. It might prove to be harder.

Workboats See 'Biggest Bang for VW Settlement Bucks'

The $2.9 billion settlement fund Volkswagen agreed to capitalize for distribution across 50 states, tribal lands, and Puerto Rico, as a result of "dieselgate," this year presents an unparalleled opportunity to maritime companies that want to move their diesel engines up a couple of EPA notches, and stick someone else with the bill. Under the rules of the Volkswagen Mitigation Trust Fund, tug, tow and ferry owners with qualifying NOx emissions reduction projects can get the job done at a significantly reduced cost, the extent to which will depend in part on the engine upgrade option they choose. That's why many workboat operators are already stepping up to get green – both kinds of green. The pros far outweigh the cons. All that said; the sooner people apply the better, once these funds are gone – they are gone. And, that's as big a story as we've seen this year.





Olmsted: Online & Open

The ribbon cutting to officially open the Olmsted Locks and Dam took place on August 30. On the Ohio River at Olmsted, IL, this crucial piece of infrastructure is finally in place. To say that the 2,596-foot Olmsted dam is situated on a vital section of the Nation's inland waterways would not give full weight to its importance. The 90 million tons that passes through the locks annually exceeds every other section of America's inland navigation system. First authorized in 1988 at a cost of $775 million, construction was estimated to take seven years. Eventually, it took 30 years and cost a whopping $3 billion. The Olmsted project was remarkable; arguably the civil engineering equivalent to the Manhattan project. In every aspect, Olmsted evolved through an expensive learning curve. The most important lesson learned comes down to lessons applied on future projects. On an inland river system that promises countless uncertainties lurking around every bend, that's one lesson stakeholders can take straight to the bank.

Hurricane Michael

When Gulf Coast-based Eastern Shipbuilding Group resumed operations at both of its two main shipbuilding facilities just two weeks after Hurricane Michael devastated Panama City, Florida and surrounding communities, the ongoing effort underscored the grit and determination of the area's residents. The most powerful storm to ever make landfall in the Florida Panhandle, Michael was the third most powerful hurricane to make landfall in the United States. Its impact was profound. Within the gates of Eastern Shipbuilding's two sprawling production facilities, the damage was unparalleled. Eastern first took a 'family' approach to its recovery, stressing the basic needs of its employees, and only then embarking on the task of picking up the pieces. The second part – probably in no small thanks to their first effort – yielded immediate fruit and today, the majority of ESG's workforce has returned to work, as well as all its U.S. Coast Guard OPC dedicated staff.

LNG Propulsion & Bunkering Comes of Age

The news that Carnival Corporation had contracted with Shell to fuel fully LNG-powered cruise ships in North America was an important milestone in the maritime industry's quest to clean up its environmental footprint. It wasn't the only one on this side of the pond. Carnival will fuel its vessels via Shell's LNG Bunker Barge. The Bunker Barge, first of its kind in the U.S., will allow the ships to refuel with LNG at U.S. East Coast ports. The ATB is being built at the VT Halter Marine shipyard in Pascagoula on behalf of Quality Liquefied Natural Gas Transport LLC (Q-LNG). Separately, Crowley Maritime took delivery of a ConRo ship also powered by liquefied natural gas (LNG). Not to be outdone, Conrad Industries delivered the Clean Jacksonville, the first LNG bunker barge built in North America. The vessel serves TOTE Maritime at Jacksonville, FL, where it bunkers two Marlin Class containerships.

Moose to the Rescue

(*) all images courtesy Moose Boats

This West Coast boat builder stays busy creating high quality fireboats for a diverse set of demanding, multi-missioned first responders. For Moose, customer satisfaction is the name of the game. This year, they've got that box checked.

By Joseph Keefe

Vallejo,CA-based Moose Boats builds aluminum catamaran and monohull vessels designed to meet a variety of mission-specific applications for military, law enforcement, emergency response, firefighting and security patrol purposes. It's been a busy year for Moose, who also recently laid the keel for a 75' catamaran crew boat for Westar Marine Services in San Francisco. But, it is fireboats that this builder is known for. And, at present, it would not be an exaggeration to say that fireboats are 'hot' for Moose Boats.

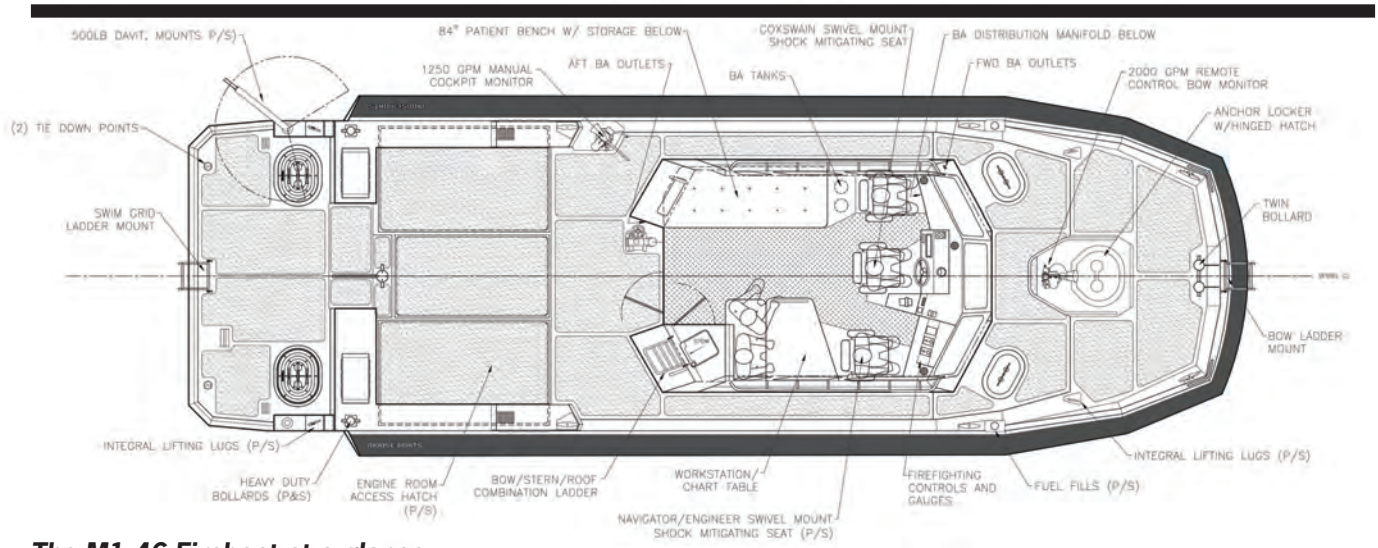
The firm has built and/or delivered no less than three fireboats in this calendar year; all of which are chronicled in this entry. Another law enforcement platform, which went straight to the head of the class in our GREAT WORKBOATS feature, can be seen on page 36 of this edition.

Operating on the site of the old Mare Island Naval Shipyard, with expanded facilities and easy access to deep water, Moose Boats has expanded its capabilities and its output is widely known for its durability, sensible design, and attention to detail. Although the firm has its standard layouts and hull forms, each boat is custom built to the needs of the customer, with every detail geared towards the boat's final mission. And, when it comes to municipal first responders, they like to cram as many capabilities onto one hull as is possible. Within this piece, we'll outline the best of three different recent deliveries.

NORTH BEACH VFD, CHESAPEAKE, MD

North Beach chose the Moose Boats M1-46 Fire Rescue Catamaran for their many needs. And those needs are plenty. The new vessel will be based in Chesapeake Beach, Maryland and serve as a search and rescue and fire suppression vessel for the Chesapeake Bay. Three forward facing shock-mitigating seats will support the crew while a full length patient care bench, a crew bench seat and head enclosure will occupy the aft end of the large walk-around cabin. Firefighting foam will be stored in the aft deck box and hose storage will be in forward deck lockers.

The M1's air-draft will be reduced to allow North Beach VFD to transit the many low clearance bridges in their



The M1-46 Fireboat at a glance …

LOA: 46 feet	Propulsion: 2x Cummins QSC8.3-600hp	Fuel: 2 x 240 Gallon Diesel Tank
Beam: 16 feet	Transmissions: 2x TwinDisc 5075SC	Water Jets: 2x Hamilton HJ322
Draft: 26 inches	Thermal Imaging Camera: FLIR M-Series	Generator: Cummins Onan 9kW
Crew Capacity: 6	Radio Comms: Icom and Motorola	Navigation Suite: Garmin
Fire Pump: Hale DSD	Intercom: Sonetics DECT7 Wireless	Deck Lights: Imtra Offshore
Life Rafts: Switlik MRP-10	Endurance: 8 hours @ 28Kts (225nm)	Climate Control: Dometic

area of responsibility. In a nutshell, the M1-46 has the ideal balance of heavy weather capabilities, shallow draft, maneuverability and fire suppression capacity to fulfill North Beach VFD's wide range of response scenarios.

"The North Beach Volunteer Fire Department chose the 46' Moose Boat for many reasons," explained Chief Chris Mills, North Beach VFD. He added quickly, "The coverage area which spans approximately 25 miles north to 30 miles South 10 miles east of our location on Chesapeake Bay. The area in which we serve has a natural gas plant and a power plant which are located 14 miles to the south."

The M1-46 Moose has a stable working platform and capable of holding 36 persons if needed for a rescue of one of many cargo ships or cruise line boats. Mills continued, "We are also a small fishing town that has a fleet of charter boats and sailing vessels along with crabbers and oystermen. The weather we encounter on the Chesapeake Bay can be treacherous at times with seas ranging from 1 to 6 feet and the seas very close together at approximately 2 to 3 seconds apart. We feel that the 46 Moose will serve our needs and then some."

Special features include Foredeck and Gunwale Fire Monitors, Foredeck 5" Diameter Hydrant Supply and 2.5" Diameter Discharges, Dedicated Fire Hose Storage, Firefighting Foam Storage, an 84" Patient Bench, EMS Equipment Storage, Breathing Apparatus Air Distribution System, Recovery Davit, Deployable Life Rafts, Combination Roof Bow and a Stern Ladder. North Beach expects to take delivery in early 2019.

CITY OF MEMPHIS

Staying competitive in terms of both price and quality, even east of the Mississippi River, Moose's third delivery to the East Coast comes in the form of the City of Memphis' new Moose Boat M2-28 Catamaran, which will be primarily used as a patrol boat for the Police Department's full time Harbor Patrol unit. Underscoring its multi-missioned capabilities and intended role, it will also serve as a shared asset with Memphis Fire Department providing search and rescue and fire suppression duties in the treacherous Mississippi River and its tributaries.

The shallow draft, stability, maneuverability and functional deck layout made the M2 Catamaran an obvious choice for the City of Memphis allowing them to fulfill all of the requirements of the vessel's multi-mission role without compromise to its daily patrol duties. The City of Memphis Harbor Patrol also works closely with the local U.S. Coast Guard Sector, making the new Moose Boat a valuable regional asset.

Special features of this dynamic hull include a 5" Diameter Hydrant Supply Valve, Breathing Apparatus, an Air Distribution System, Radiation Detector and a Patient Treatment Bench. Major William Freed of the Memphis Police Department was predictably effusive in his praise of

The Moose Boats M2-38 Patrol and Fire Rescue Catamaran at a glance …

LOA: 38 feet – 10 inches	Endurance: 8 hours @ 30Kts (240nm)	Transmission: 2X TwinDisc 5075SC
Beam: 13 feet – 10 inches	Propulsion: Cummins QSB6.7-425hp	Water Jets: 2X Hamilton HJ292
Draft: 26 inches	Firefighting Monitor: Task Force Tips	Navigation Lights: Hella Marine
Crew Capacity: 5	Navigation Suite: Simrad NSS Evo3	Search Light: GoLight LED
Fire Pump: Hale RSD	Fuel Capacity: 2X 150 Gallon Diesel Tank	Deck Lights: Imtra Offshore
Service: Joint Police/Fire	Thermal Imaging Camera: FLIR M-Series	Capacity of Fire Pump: 1,500GPM

his new hull, saying, "The boat we received from Moose Boats has exceeded our expectations. This is the first joint Police and Fire boat for the City of Memphis and our expectations were pretty high. We are looking forward to utilizing it to improve our patrol, search and rescue and firefighting capabilities on the Mississippi River."

SAN FRANCISCO FIRE DEPARTMENT

Heading west once again to Moose's very backyard, San Francisco Fire Department's new M2-28 Catamaran is another variant of Moose Boats' proven fire rescue platform with a primary focus on dive operations and search and rescue. In addition to diver deployment, the vessel is equipped for open-water fire suppression, emergency hydrant supply for the City of San Francisco, open-water, cliff and beach rescue and Homeland Security specific duties within San Francisco Bay and beyond the Golden Gate Bridge.

Supporting all those missions are myriad special features which include Dedicated Dive Equipment and Fire Hose Storage, a Custom Dive/Rescue Platform, Breathing Apparatus Air Distribution, a Search and Rescue Observation Tower, Heavy Duty Push Knee, Recovery Davit, a Beach Access Ladder and a Deck Shower.

That's important because Anthony Rivera, Asst. Deputy Chief, San Francisco Fire Department told ***MarineNews*** in November, "The San Francisco Fire Department's new M2-38 will support a wide range of emergency response scenarios, such as dive operations, search and rescue, and fire suppression. The SFFD annually responds to hundreds of marine related calls for service. The new Moose Boat is

The Moose Boats M2-38 Dive and Fire Rescue Catamaran at a glance ...

LOA: 38 feet - 10 inches	Transmissions: 2x TwinDisc 5075SC	Fresh Water Capacity: 26 Gallons
Beam: 13 feet – 10 inches	Endurance: 8 hours @ 30 KT (240nm)	Water Jets: 2x Hamilton HJ292
Draft: 26 inches	Thermal Imaging Camera: FLIR M-Series	Fire Pump: Hale RSD
Crew Capacity: 2	Radio Communications: Icom, Motorola	Navigation Suite: Simrad NSS Evo3
Diver Capacity: 4	Fuel Capacity: 2x 150 Gallon Diesel Tank	Diver Recall System: OTR
Search Lights: ACR	Propulsion: 2x Cummins QSB6.7-425hp	Capacity of Fire Pump: 1,500GPM

an additional asset that will increase our marine capability and effectiveness in serving not only the City of San Francisco but the entire San Francisco Bay Area region."

Due to the Moose Boat's Homeland Security role, it will also be equipped with a Hale fire pump flowing in excess of 1,500 gallons per minute of fire suppression water, radiation detection equipment and CBRN positive pressure cabin filtration. A heavy-duty push knee will enable the M2-38 to come in contact with larger vessels and San Francisco's many piers.

MOOSE FIREBOATS: COMING TO THE RESCUE

Over a very short period of time, Moose Boats has constructed vessels for some of the most prestigious fire departments throughout the United States, including the Richmond Fire Department, Tiburon Fire Protection District, San Francisco Airport (SFO) Fire Department and Humboldt Bay Harbor Recreation and Conservation District in California, Old Saybrook Fire Department in Connecticut, Lewes Fire Department in Delaware, Anne Arundel County in Maryland, MASSPORT Fire Rescue at Boston Logan Airport, Sandwich Fire Rescue and New Bedford Fire Department in Massachusetts, Northport Fire Department in New York, New Jersey State Police, North Kingstown Fire Rescue in Rhode Island, West Pierce Fire Rescue and Bellingham Fire in Washington.

That kind of track record doesn't happen by accident. But, even if it did, coming soon to a port near you, Moose will continue to 'come to the rescue.' www.mooseboats.com

The Very Best 10 of 2018

MarineNews showcases the ten best of North America's 2018 workboat deliveries. Domestic shipyard production is robust, innovative and getting greener. And, that translates into two kinds of 'green.'

As the domestic offshore energy support sector slowly awakens, other sectors have been happy to take the spotlight in its absence. As always, and if a hull was delivered in 2018, we took a look at it, with several areas as a focus for inclusion into this edition. For my part, I'm always excited when the U.S. boatbuilding sector can deliver for a foreign buyer. We've checked that box here. And, that's because we can compete on price, quality and when we do, it's on schedule. No less important is the environmental footprint of a vessel, and there was plenty to report on from that angle in the past 12 months. The domestic waterfront is indeed getting greener and cleaner. Finally, innovation wasn't in short supply, either. Catering to myriad requirements and missions, North American builders churned out a steady list of quality vessels, each unique in its own way. The best of those designs and deliveries are chronicled below:

M/V Tazlina

M/V Tazlina is the first ferry of its kind ever built in Alaska by Alaskans. As such, it is a symbol of Alaska Marine Highways System (AMHS) and the state of Alaska's commitment to build Alaska's maritime sector, provide more opportunity for Alaskan workers and connect Alaska citizens in remote areas. The vessel design and construction had to overcome the challenges of Alaska's heavy seas, high winds and freezing spray. Testing was performed on the hull form in a wave tank at Force Technology Denmark to allow designer, Elliott Bay Design Group, to optimize performance in heavy seas and improve passenger comfort. The vessel is classed ABS Ro/Ro, carries 300 passengers and 53 vehicles loaded via both a bow and stern door.

M/V Tazlina is the first of two Ro/Ro ABS Classed Passenger Ferries built by Vigor in Ketchikan for the State of Alaska, Alaska Marine Highway System. The two day-use ferries will be virtually identical, and will serve the Lynn Canal area. The vessels have no staterooms or crew quarters. They will have a passenger capacity of 300, and will be able to take up to 53 standard vehicles.

Type: Ro-Ro Passenger Ferry	Builder: Vigor	Engines: 2x 3000 BHP Electro-Motive (EMD)
Delivery: December 2018	Material: Steel	Propellers: Rolls Royce CPP with Promas Rudders
Breadth (molded): 67 Feet	Class: ABS	Generators: 3 (Caterpillar Model C-18)
Draft, (max): 13 feet 6 inches	LOA: 280 Feet	Car Doors: Bow with ramp, port aft, stern
Speed: 16 knots @ 85% MCR	Fuel: diesel	Capacity: 300 passengers/ 53 vehicles

Credit: Vigor

NYPD's "CT3"

NYPD Counterterrorism Division's new Moose Boats M1-46 catamaran exemplifies Moose Boats' design and execution philosophy of incorporating state of the art systems protecting the public from the unseen without compromise to day-to-day functionality. NYPD's vessel "CT3" is the evolution of the proven M1 catamaran and the most advanced Moose Boat built to date. CT3 has an around the clock mission to protect the City of New York's waterways regardless of weather and marine conditions.

Equipped with electric heated decks capable of eliminating ice, NYPD's Counterterrorism Division is always ready to respond regardless of environmental conditions. The new Moose Boat is equipped with the latest offering from Hamilton Jet called "Jet Anchor" enabling its operators hold position at the press of a button from either the enclosed pilothouse or open upper bridge station. FLIR's new M400 thermal imaging and visual camera, Coda sidescan sonar, satellite communications equipment, and the most sophisticated radiation detection system on the water make NYPD CTD's Moose Boat a true maritime surveillance, detection and maritime command center.

Credit: Moose Boats

Buzzworthy

Built to order in the United States, RIBCRAFT is the only manufacturer who specializes exclusively in building professional grade rigid inflatable boats (RIBs). The workhorse of the RIBCRAFT line, the RIBCRAFT 9.0 is designed specifically for offshore rough water conditions. RIBCRAFT's signature deep V hull coupled with full length lifting strakes provides unparalleled handling characteristics.

This RIBCRAFT 9.0, the Buzzworthy, accommodates most applications with numerous deck configurations available ranging from an open center console for workboat operations to multiple seats for tour operations or a console enclosure for all weather operations. New England EcoAdventures took delivery of a new USCG certified RIBCRAFT 9.0 to provide whale watching excursions, thrill rides, and coastal tours in Kennebunk, Maine. With jockey-style pod seats forward of the operator console, this 29' RIB was certified to carry 14 passengers. Featuring a heavy duty yellow 1670dtx Hypalon tube with black rubstrake and upholstery, an aluminum canopy top with two folding dive ladders, a marine head with holding tank, and a full Garmin electronics package including GPS, radar and AIS, this boat is ready for adventures all over the Maine coast. Powered by twin Yamaha 300HP engines, the RIB will reach speeds in excess of 50mph.

LOA: 29'7" Feet	Material: Fiberglass Hull / Hypalon Tube	Delivery Date: Summer 2018
Speed: 50+ mph	Owner: New England EcoAdventures	Engines: Twin Yamaha 300HP
Fuel Type: Gasoline	Fire Detection: FireBoy Clean Agent	Class: USCG Subchapter T
Liferafts: 17153107	AIS: Garmin VHF 210 with AIS	Radars / Radio: Garmin

Credit: Ribcraft

Assateague

While celebrating its 120th anniversary early in 2018, Vane Brothers took delivery of the first of three new articulated tug/barge (AT/B) units ordered through Conrad Shipyard: the 4,400-horsepower tug Assateague (designed by Castleman Maritime and built at Conrad's Orange, Texas, facility) and 80,000-barrel barge Double Skin 801 (designed by Bristol Harbor Group and built at Conrad's Amelia, Louisiana, facility). This was the first new AT/B to join the Vane fleet since 2007. The Assateague Class of AT/B tug now also includes the Chincoteague, delivered this summer, and will add the Wachapreague this winter. All 130 active Vane Brothers vessels are primarily tasked with the movement of petroleum products engaged in the North Atlantic coastwise trade. Assateague no doubt will more than aptly augment Vane's already impressive fleet and capabilities.

Material: Steel	Builder: Conrad Shipyard	Naval Architect: Castleman Maritime
LOA: 110 Feet	Operator: Vane Brothers	Classification: ABS-A1 TUG, AMS, ABCU
Speed: 13 Knots	Breadth (molded): 38 Feet	Engines: Cummins QSK60M EPA T3
Fuel Type: Diesel	Depth (molded): 16.5 Feet	Propellers: Four-bladed MN-BRZ
Type: AT/B tugboat	Draft (maximum): 14.5 Feet	Gears: Reintjes WAF 873 gears
Owner: Vane Brothers	Delivery Date: February 2018	Generators: Two Cummins QSB7 / 125kW

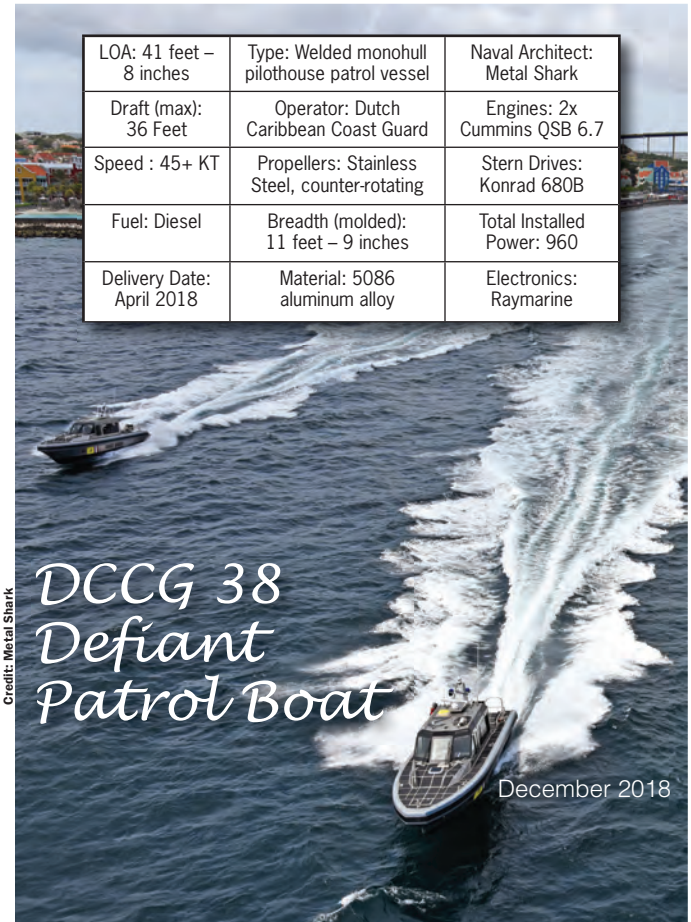
Credit: Vane

Dutch Caribbean Coast Guard 38 Defiant Patrol Boat

Four new high speed patrol boats manufactured by Louisiana, USA-based shipbuilder Metal Shark for the Dutch Caribbean Coast Guard (DCCG) have been commissioned on the island of Curacao. The new vessels are the first to be delivered to the DCCG under a 12-boat order announced last year. Designed in-house by Metal Shark and built at the company's Jeanerette, Louisiana production facility, the welded aluminum, enclosed-pilothouse, 38 Defiant monohull patrol boats are the result of a multi-year effort by the DCCG to procure a replacement for its fleet of open-cockpit RIBs. The new vessels will serve as the DCCG's main interceptors, patrolling the territorial waters of Aruba, Bonaire, Curacao, St. Eustatius, St. Maarten, and Saba.

The 38 Defiant reaches top speeds in excess of 45 knots. A fully-enclosed pilothouse shields the crew from the elements, while Metal Shark's signature "Pillarless Glass" pilothouse arrangement assures unimpeded visibility, day or night. Specially engineered composite armor panels provide ballistic crew protection from unfriendly fire. Shockwave Corbin shock-mitigating seating has been provided for a crew of six, and anti-fatigue floor covering has been employed in the pilothouse and the below decks crew spaces. A urethane-sheathed, closed-cell foam Wing collar provides durable and resilient fendering. For extended patrols at sea, accommodations include an enclosed head compartment, galley, and v-berth.

LOA: 41 feet – 8 inches	Type: Welded monohull pilothouse patrol vessel	Naval Architect: Metal Shark
Draft (max): 36 Feet	Operator: Dutch Caribbean Coast Guard	Engines: 2x Cummins QSB 6.7
Speed : 45+ KT	Propellers: Stainless Steel, counter-rotating	Stern Drives: Konrad 680B
Fuel: Diesel	Breadth (molded): 11 feet – 9 inches	Total Installed Power: 960
Delivery Date: April 2018	Material: 5086 aluminum alloy	Electronics: Raymarine



Credit: Metal Shark

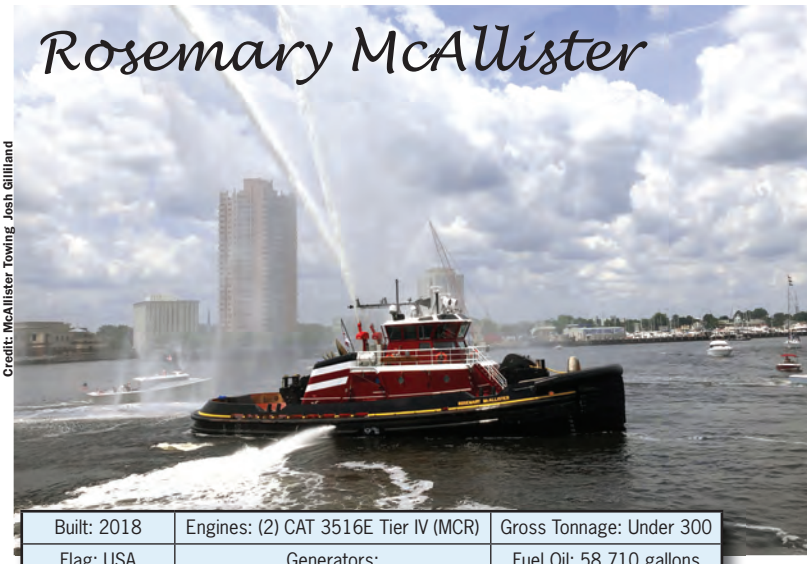
Credit: Nichols Brothers

Venture

The National Geographic Venture is a Jones Act compliant, purpose-built expedition cruise vessel made for exploring coastal waters, shallow coves, and fast-moving channels where wildlife congregates; while sailing with the luxury of supreme comfort for both guests and crew alike. This state-of-the-art-vessel, designed and built by Nichols Brothers in the USA, sails internationally to Costa Rica, Panama, and Belize, and nationally to Baja, California; Alaska; and the Pacific Northwest. The impressive Venture carries 100 guests and 50 crew members who embark on a once-in-a-life-time expedition. The ship is fully stocked with exploratory equipment, from zodiacs, kayaks, cameras, snorkel equipment and so much more. The ship has 50 luxury guest staterooms accommodating 100 guests with access to an expansive dining room, spacious and luxurious lounge, on board gym and spa, equipment lockers, sun deck, and observatory deck.

Rosemary McAllister

McAllister Towing's tug Rosemary McAllister is the second in a series of four 80 metric ton bollard pull tugboats, and is the 32nd tractor tug in McAllister's fleet. Notably, The vessel is powered by 3516E Tier IV Caterpillar engines with twin Schottel SRP4000FP units. Packed into her hull is 6,770 horsepower. She has already exceeded expectations as she achieved 82.75 metric tons during her ABS bollard pull certification. The Rosemary joins sister vessel Capt. Brian A. McAllister as one of the earliest EPA Tier IV tugs on the U.S. East Coast. Combining her power with a class III escort winch on the bow and a 2 1/4" wire towing winch on the stern puts the Rosemary at the head of her class of ship-docking tugs. State of the art remote controlled fire monitors and deluge systems (ABS FiFi certified) complete the package, making the tug a total Escort /Shipdocking/Rescue vessel unique to any East Coast port. The Rosemary McAllister is named after the matriarch of the company. Rosemary is Chairman Capt. Brian A. McAllister's wife and mother to President Buckley McAllister and CFO Eric McAllister.



Credit: McAllister Towing Josh Gilliland

Built: 2018	Engines: (2) CAT 3516E Tier IV (MCR)	Gross Tonnage: Under 300
Flag: USA	Generators: (3) CAT Tier III C7.1 Keel Cooled	Fuel Oil: 58,710 gallons
Type: Tractor Tug	Potable Water: 3,075 gallons	Lube Oil: 545 gallons
LOA: 104 feet	Free Running Speed: 14 Knots	AFF Foam: 750 gallons
Breadth: 40 feet	Bollard Pull: 80 metric tons	Class: ABS
Depth: 16.4 feet	Built: Eastern Shipbuilding	Radar: (2) Furuno

Crowley's El Coquí

Crowley Maritime's El Coquí is one of the world's first combination container/roll on-roll off (ConRo) ships powered by liquefied natural gas (LNG), from shipbuilder VT Halter Marine Inc. El Coquí is the first of two Commitment Class LNG-powered ConRo ships being built for Crowley's shipping and logistics services between Jacksonville, Fla., and San Juan, Puerto Rico. The new Crowley ship, built specifically for the Puerto Rico trade, will be able to transport up to 2,400 twenty-foot-equivalent container units (TEUs) at a cruising speed of 22 knots. A wide range of container sizes and types will be accommodated, including 53-foot by 102-inch-wide, high-capacity containers, up to 300 refrigerated containers, and a mix of about 400 cars and larger vehicles in the enclosed, ventilated and weather-tight Ro/Ro decks. This type of shipboard garage is offered exclusively by Crowley in the trade.

The vessel, in a nutshell, is one of the most technically-advanced and environmentally-friendly vessels in the world today. Fueling the ships with LNG will reduce emissions significantly, including a 100-percent reduction in sulphur oxide (SOx) and particulate matter (PM); a 92-percent reduction in nitrogen oxide (NOx); and a reduction of carbon dioxide (CO2) of more than 35 percent per container, compared with current fossil fuels. Working with Eagle LNG Partners, the ships will be bunkered from a shoreside fuel depot at JAXPORT.

Credit: Crowley

Flag: USA	Length: 219.5 meters	Operator: Crowley Maritime
Class: DNV	Breadth: 32.2 meters	Capacity: 26,500 DWT / 2,400 TEU
Type: ConRo	Depth: 18.0 meters	Capacity: 400 vehicles / 300 reefer plugs
Speed: 22 Knots	Fuel: LNG &/or ULSD	Builder: VT Halter Marine

Credit: Gladding-Hearn

Hampton Roads

This is not your grandfather's pilot boat. The 55-foot Chesapeake class MKII launch built by Gladding-Hearn Shipbuilding was delivered to its station in Virginia Beach this summer, equipped with a range of state-of-the-art technologies for improved safety, stability, reliability and efficiency. Chief among Hampton Roads' high-tech features is its Volvo Penta propulsion system. The vessel is powered by twin 13-liter 900 hp D13-700, EPA Tier 3-certified diesel engines, each connected to an IPS-3 propulsion pod with integrated underwater exhaust, as well as Volvo Penta's EPS electronic steering and control system. The IPS uses highly-efficient steerable pod drives with dual counter-rotating forward-facing propellers that pull the boat through "clean" water rather than push, said Jens Bering, VP, marine sales, Volvo Penta of the Americas. The setup provides a number of operational enhancements, including 20 percent faster speeds (top speed over 32 knots) and 30 percent lower fuel consumption compared to a traditional inboard shaft system, the manufacturer said. It also slashes onboard noise and vibration levels by half.

Comfort and greater stabilization are delivered by a transom-mounted interceptor system from Humphree USA. The electric-powered interceptors deploy retractable blades that adjust automatically to create lift that counteracts the vessel's roll and pitch motions. The system optimizes the attitude of the boat underway, helps to save fuel, takes load off of other systems, and provides better control

LOA: 56 feet	Main engines: (2) Volvo Penta D13-700, EPA Tier 3	Hull Type: Deep-V monohull
Beam: 17.2 feet	Genset: 12 kW Northern Lights/Alaska Diesel, Tier 3	Keel Laid: April 7, 2017
Depth: 9.1	Radar: (2) Furuno TZT-14" MFD display w/chart plotter	Delivered: June 26, 2018
Draft: 4.11 feet	Potable water: 25 U.S. gallons	Fuel: 800 U.S. gallons
Compass: 5" Richie	Crew: Captain & 1 deckhand	Speed (loaded): 32+ knots

Credit: GLDD / Eastern Shipbuilding Group

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

and safety while maneuvering. In other words, the Hampton Roads, built by perhaps the most recognizable name in the pilot boat industry, has all the bells and whistles, ready for any mission that might come next.

Ellis Island

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

The state-of-the-art vessel's first assignment was the Mississippi Coastal Improvement Program project. The Jones Act compliant, Dual Mode Articulated Tug/Barge (ATB) Trailing Suction Hopper Dredge was built by Eastern Shipbuilding. With the tug designed and engineered by Ship's Architect, Inc. and the Hopper Dredge Barge detail designed by Bay Engineering, both vessels are based on concept designs by Ocean Tug & Barge Engineering. The construction of the new build ATB hopper dredge ELLIS ISLAND and tug DOUGLAS B. MACKIE took place in Panama City, Florida at Eastern Shipbuilding Group.

Arlen "Benny" Cenac Jr. Navigates a Different Course Line, MAKING A DIFFERENCE

Cenac Marine Services and its dynamic, third generation leader, Arlen "Benny" Cenac Jr., continue to flourish, in good times and bad. Through it all, leadership, philanthropy and investments that extend far beyond the company's gates have made all the difference.

By Joseph Keefe

(*) all images courtesy Cenac Marine Services

As this year quickly churns to its inevitable close, Cenac Marine Services isn't the nation's biggest towboat operation, but its profound impact on the people and environment of the U.S. Gulf Coast and beyond is unquestionable. At a time when most operators are happy to simply strive for an environmentally correct and regulatory compliant business signature, Arlen "Benny" Cenac Jr. regularly reaches outside his core business of towing and transportation to improve the lot of those around him, and the world they live in.

Some would argue that all that philanthropy and community investment is nice, but doesn't have anything to do with Cenac Towing's ongoing success. Nevertheless, Benny Cenac would tell you that the two efforts are inextricably entwined. In Cenac's world, then, the philosophy of 'making all the boats float when the tide comes in' has yielded fruit for more than 90 years. According to Mr. Cenac, even as he navigates the rapidly changing landscape of the domestic Jones Act business climate, the Cenac way of doing things is one thing that won't.

CORE VALUES

Cenac Towing today finds itself operating about 100 marine vessels with a full-time staff of 400 marine professionals. But that doesn't tell the full story of where all that emanated from. The company is guided by the values and principles es-

tablished by Benny Cenac's grandfather, Jock Cenac, over 88 years ago: a commitment to employee satisfaction and great company morale. Cenac takes pride in continuing the legacy started by his grandfather that was continued by his father, Arlen Cenac Sr., until it was passed down to Benny in 1981.

A third-generation owner of Cenac Towing Company, originally founded in 1927, Benny, has led the company since 1981 through several industry hardships by focusing on customer service, efficiency, quality and safety in its marine transportation services. Cenac Marine Services has clients across the country and focuses primarily on transporting liquid petroleum barges.

Cenac is guided by the values and principles established by Benny's grandfather over 85 years ago: a commitment to employee satisfaction and great company morale. Benny takes pride in continuing this legacy, and is certain that all current employees would share that the company operates as a family and everyone from the boat captains right on down to the security guards are treated as such.

In addition to Cenac, Benny owns several other business entities in the gulf coast region, touching a wide-range of industries such as retail, manufacturing, wholesale and agriculture. As an entrepreneur at heart, Benny enjoys seeking out new business opportunities across the region, in part because it helps cultivate a strong local economy.

LOCAL ROOTS, GLOBAL REACH

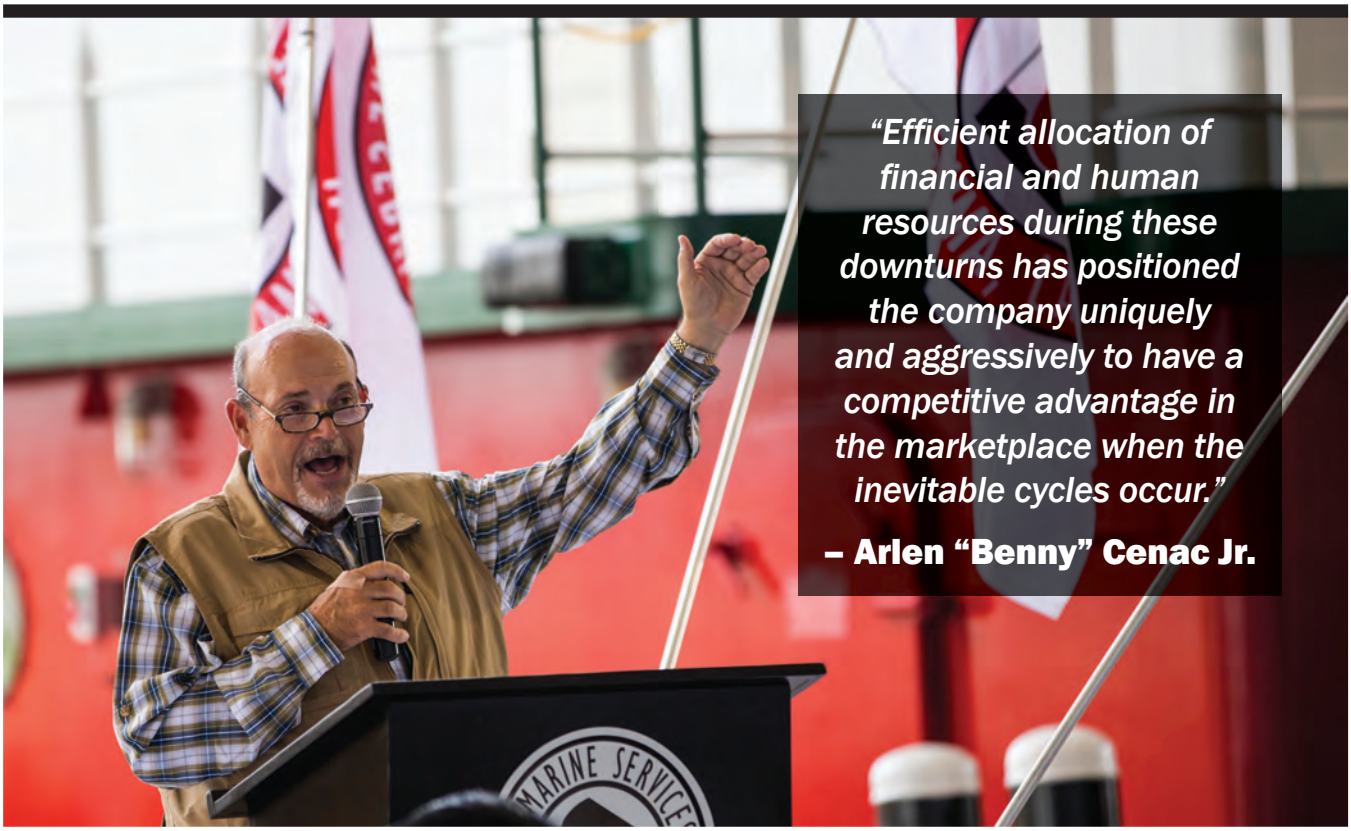
Arlen "Benny" Cenac Jr. has been described as a Louisiana-based entrepreneur with global reach. In fact, Cenac's entrepreneurial streak is widely credited with being the driving force for success for Cenac Marine Services. But, Mr. Cenac's first entrepreneurial mountain was climbed when he assumed sole control of the family business and took major risks in a large expansion and modernization of the existing fleet. His expertise in construction and operational management of towing assets allowed the company to blossom and grow exponentially. Eventually, this success led to a sale of all of the company's assets. Nevertheless, and after the sale, Cenac's entrepreneurial spirit still burned brightly. Eventually, he recreated the company based on the traditional values of Cenac Towing and has managed the business to even greater heights today.

Benny Cenac is often quoted as saying, "Bigger is not necessarily better." Hence, the Cenac model for what is 'better' has the firm, in his mind, 'right sized' for its intended missions. That's because Arlen "Benny" Cenac Jr. has always believed that customer service, reliability, and technology were the most important components in towing excellence. His close attention to the size of the fleet

allows him to be hands on for the concept, design and construction of every barge and boat Cenac has ever built. This model has served the company well by allowing all aspects of the operation to be properly sized for his personal attention. In an industry where some operators 'make do' with acquired assets that might not be just right for the job at hand, Cenac Towing operates only fit-for-purpose hulls with a high level of efficiency.

CENAC TOWING: BUSINESS EXCELLENCE 101

Benny has led the company through multiple industry downturns and always emerged even stronger as the tide rises. As those industry downturns impact and ultimately absorb other firms, Cenac Marine Services' success has allowed them to build on a solid financial base. Arlen "Benny" Cenac Jr. navigates the downturns by investing in construction and modernization at lower costs. And,



he insists, "Efficient allocation of financial and human resources during these downturns has positioned the company uniquely and aggressively to have a competitive advantage in the marketplace when the inevitable cycles occur."

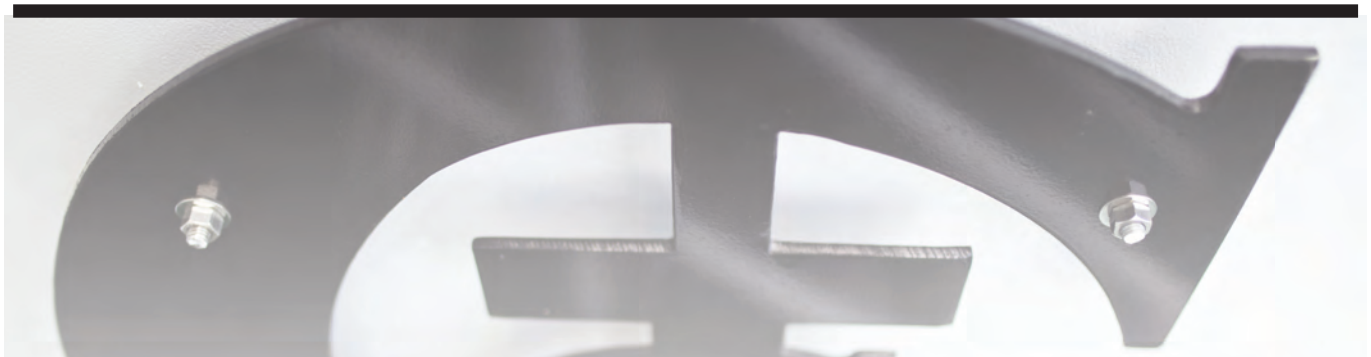
For example, Cenac Towing's 2015 acquisition of Main Iron Works (MIW) is noteworthy in that it married an experienced, well-regarded shipyard to an established transportation leader. In fact, MIW built the majority of the Cenac fleet. Cenac's mother's father started MIW and built the majority share of Interstate Transportation's fleet, Dixie Carrier's fleet, and Harvey Gulf's fleet, and most of those boats are still in operation today. Cenac adds quickly, "We have always been a company that believes in internal repairs and construction of our fleet, so this acquisition was the perfect fit for our company's overall goals."

With the addition of MIW to the Cenac portfolio, Cenac joined a growing number of operators who own and operate their own tonnage but also can build from within at their own yards. Eliminating the middle man does create economy of scale, but that's not necessarily what Benny Cenac was looking for when they brought the yard into the Cenac portfolio. "It's not a question of less expensive tonnage, but the internal controls of the equipment and being able to assure our customers, construction staff and repair staff that jobs are completed in a professional and timely manner."

SAFETY FIRST

Benny's focus on his people and by default – an ironclad focus on safety – has served the company well. The safety of his team is and has always been of utmost importance to Cenac, and therefore training is key. In addition to tankerman training being utilized with their partnership with South Louisiana Community College (SLCC), team members also participate in simulator training with the school as well. This gives Cenac professionals additional hands on training that is the bedrock to furthering their professional development. You can't do that unless you do it safely. To that end, the company has also been awarded the LWCC Safest 70 Award several years in a row.

Where the advent of subchapter M is giving some firms headaches, Cenac seems to be sailing through the transition nicely. That's in no small part a function of Cenac's participation in the AWO's RCP program – something most would credit as the nexus of today's regulatory rules. It's 'no accident' that Cenac has been an AWO member since its beginning, and is fully SubM Compliant today. In fact, Cenac Marine Services was issued one of the very first Certificate of Inspection's (COI) as subM kicked off. On the journey to full compliance, Cenac awarded a Third-Party Organization (TPO) contract to ABS, a recognizable stakeholder on the domestic waterfront. Cenac chose that route and ABS because of their reputation, resources and man power.



OUTSIDE THE GATES: GIVING BACK

As an avid philanthropist to the gulf coast region and strong supporter of coastal wetland restoration, Cenac's reputation is almost unrivalled. Beyond the company's donation of a spud barge to Terrebonne Parish, this philanthropy extends to multiple areas. That's because, over time, coastal conservation efforts, coastal restoration and preservation have been a cause that Arlen "Benny" Cenac has recognized, embraced and robustly supported for decades. Where some firms point to a "green footprint," Cenac lives that policy at work – and at home. That outreach extends to protecting the land that he lives in and loves, through, as one example, the creation of his own levee system on his personal property in order to preserve the marshes in the area.

Another recent donation he is most proud of his investment into maritime training/education by the donation of a fully refurbished and functioning barge to SLCC's maritime training program. With a firm belief that maritime training and education is a key component to the area and the industry, that investment and partnership pays dividends within his fleet, every day.

Cenac's partnership with SLCC yields tanker operations and simulator training for all wheelhouse members, while at the same time, gives hands on experiences to others that would otherwise not made available to the public. Cenac explains further, "Not only are Cenac employees able to utilize the barge for improved hands on training, but some of our boat captains have been certified by the Coast Guard and have given their time to train other tankerman during their time off. This allows us to improve our employee training while also providing tools for others to improve their learning experience while enrolled in SLCC's maritime training courses. It's a great partnership for all involved."

LEADERSHIP: ON THE WATER, IN THE COMMUNITY – AND BEYOND

Leadership means different things to different people. In Benny Cenac's case, it means treating employees and mariners as family. But, this type of philosophy and operations model is easier talked about than it is to put it into real practice. Nevertheless, the family approach has been an integral component of the long term success at Cenac Marine Services. But, Benny Cenac does more than just talk about it.

The company hosts many unique events that employees enjoy throughout the year. Wild game, fresh fish, and seafood are cooked by employees for employees and their families, throughout the year. In particular, the Halloween Festival and the annual Christmas Concert Gala during the holidays are events which all Cenac employees look forward to.

Leadership also means being out front on industry trends. Over time, Cenac has led the marine industry with many 'firsts.' These include being the first to institute the U.S. Coast Guard tank barge self inspection program, and with the Coast Guard's approval, the first to institute its own tankerman training program. As part of Conoco's Magnolia project, they were the first company to moor a liquid petroleum barge to a dynamic positioning drilling rig in the Gulf. And, of course, Cenac was one of the first companies to build a fleet of double skinned barges, well prior to it being required by the regulations.

Away from his primary day job, and as a dedicated leader in his community, Benny has served on several boards and committee's, including Nicholls State University College of Business Advisory Board, Nicholls State University Foundation and Restore or Retreat. Benny is also a member of Waterways Operators, South Central Industrial Association, Bayou Community Foundation and Greater New Orleans Foundation.

A devoted philanthropist, donating both his time and money to dozens of regional, national and international causes, his community reach impacts thousands of people in Louisiana, and beyond, every day.

RIGHT SIZED FOR THE RIVER AHEAD

According to their web site, Cenac Towing Company operates approximately 38 boats, 68 barges and has 400

employees, stretching across almost a century of rich history. We asked Cenac's chief executive where those numbers might be in five years and beyond that, ten. In other words, what's the long term strategy? "The fleet will always be maintained at the level where Cenac Marine Services customers can receive the sustained excellence they have come to expect," he explained, adding quickly, "It will always be large enough to accommodate growth but small enough to maintain the high performance levels we deliver to every customer, every day. The fleet represents the best in safety, technology, reliability, and efficiency. Those core values will drive any expansion over time."

Indeed, core values have always been at the heart of this firm's existence; on the water, in the shipyard and outside the gates in the greater community. Along the way, no one can deny that Arlen "Benny" Cenac Jr. has navigated a curiously different course to success. And, that's made all the difference.

DATA MANAGEMENT FOR COMPREHENSIVE FUEL MANAGEMENT AND COMPLIANCE

FUELTRAX optimizes uptime and reduce costs with a real-time marine fuel management solution. Solving your emissions and fuel monitoring reporting and compliance headache is what they are all about.

By Joseph Keefe

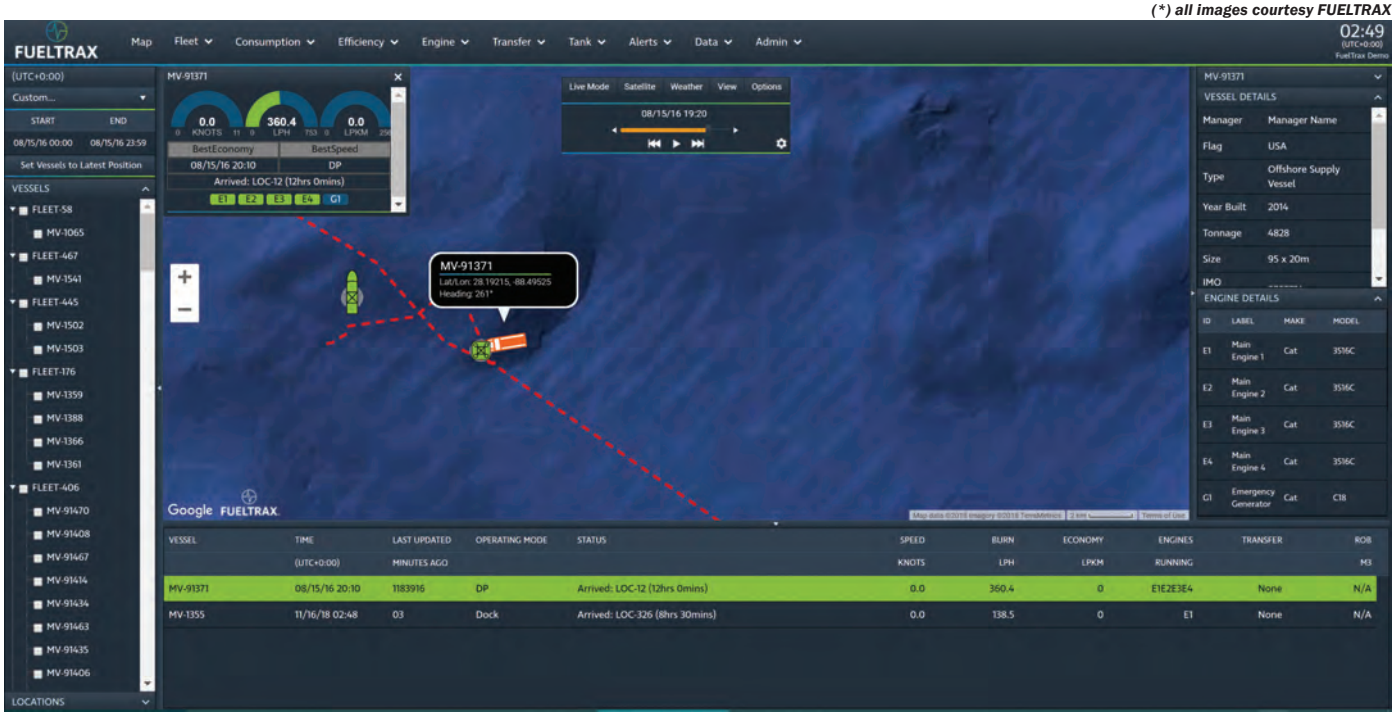
In today's operating environment, it would be an understatement to say that detailed insight into fuel consumption and efficiency is one key to managing marine operations. But, beyond the operational headache of determining where and why you are consuming so much fuel and so quickly, regulatory compliance is also emerging as a fundamental requirement of modern marine operators. The two cannot be separated any longer. And, that's where FUELTRAX, a smart, self-contained fuel and data management solution comes in.

FUELTRAX operates in real-time, standardizing the acquisition, securely transfers and tracks analysis of accurate vessel and fleet performance data. Simple to install, it operates with any vessel class, fuel type, engine model or geographic location. For inland operators concerned with their bottom line, especially as it relates to a far flung fleet of many workboats, operating in multiple local jurisdictions, the possibilities for leveraging this technology are literally unlimited.

In simple terms, FUELTRAX manages fuel use, recording secure, reliable, real-time data. It improves asset value, in part by taking the strain out of monitoring and reporting. The data captured and organized by FUELTRAX helps to ensure compliance with legal requirements for monitoring, reporting and verification (MRV) of CO2 emissions. It logs fuel consumption against time, distance and cargo.

For those operators concerned about the laborious ask of determining where and how much fuel was expended within each taxation zone on inland waters, FUELTRAX provides a simple and verifiable solution. And, because inland operators already contribute a massive amount of

(*) all images courtesy FUELTRAX



taxes to the inland waterways maintenance fund, these calculations are critical to the health of their bottom lines.

Separately, and for offshore operators moving in and out of dynamic positioning (DP) mode, similar efficiencies can be gleaned from the FUELTRAX solution. In reality, there are many moving parts to that effort.

Real Applications, Economical Solutions

A recent case study developed by FUELTRAX revealed that as much as 22% of 'fuel spend' happens in DP mode. In this instance, the data collected by FUELTRAX onboard was automatically categorized into the correct fuel activity category based on real-time fuel flow measurements, location, and other key data points. A report was then generated in FUELNET, in this case cataloguing fuel over the space of one calendar year, for the DP activity mode set for this fleet. The fuel activity modes were automatically generated, allowing the operator to target operational changes to fuel activities with the greatest spend.

In this instance, analysis of the data recommended operational changes for the number of engines used during the DP operation. It was found through expert analysis in the FUELNET database that one Captain operated on DP using 2 engines instead of the default of 4 engines. By studying the fleet, it was found that 37% of fuel was saved by Captains using 2 engines in DP mode instead of 4. Maximum savings were received for this operator by replicating these results across the fleet.

Secure Data Collection & Transmission

FUELNET is a fully secure cloudbased data-center that works hand in hand with FUELTRAX. It delivers fully self-contained, end-to-end, secure communications directly from the vessel to your desktop. Data is collected in real-time and analyzed by the second onboard. Minute-by-minute averages are then packaged for transmission, and a live updated is made to FUELNET every 15-minutes. Key data points are available instantly in FUELNET, such as real-time fuel consumption, number of engines running, fuel activity Mode, and live GPS location. More detailed raw data is then transferred once per day to give a complete historical analysis of the day's fuel activities.

For inland markets, FUELTRAX fleet geofencing is used to capture operational modes. Categorizing fuel spend in modes that can be customized as needed by the operator, such as time in port, alongside pier, at anchor, etc. MODES are tailored to the vessel operation types for the fleet and include the geofencing parameters as needed.

The Cost of Fuel: Quality & Quantity

The cost of fuel – especially in an IMO 2020 world – will be increasingly important to OSV operators who are only just now slowly pulling tonnage out of layup and positioning themselves to operate in a depressed day rate market. Everyone's eyes are on initiatives for 2020, and more importantly the impact the IMO's regulations will have on the cost of fuel. Here and overseas, OSV operators are seeing this as fuel responsibility pivot back to themselves due to the increased cost. 2020 will make fuel spend a more closely guarded OPEX for OSV owners than required for today's OSV operations. Operators do recognize this need and are getting ahead of the initiatives by becoming early adaptors of expert fuel monitoring services. FUELTRAX is one way to get to the Promised Land.

And, while theft isn't as big a deal in domestic markets as it might be in – say – Nigeria, inaccurate fuel measurement is a problem everywhere, including the United States. Typically, in North American waters, this can take the form of unintentional inaccurate measurement due to manual errors. According to FUELTRAX, the more human interven-

tion process there is in measurements, the more opportunity there is for inaccurate accounting or errors. The global issue of both nefarious and unintentional slippage due to traditional, ineffective methods still in use today is something that FUELTRAX technologies work to combat against.

The FUELTRAX onboard solution – the Mobile Measurement Unit or MMU – monitors against bunkering issues includes a siren to alert crew in-real time to stop any transfers being received of the out-of-spec fuel. The firm also recently launched 6 systems mobile, stand-alone units in West Africa to accomplish this task shoreside. These units include custody-grade transfer meters, a siren, all communications equipment, and other tamper-proofing measures for a cohesive, stand-alone automated bunkering tool that can be used at any location in the world.

FUELTRAX utilizes Coriolis mass flowmeters delivering real-time measurements of temperature, density, and mass. This allows for fuel quality to be detected in real time, and counters quality issues such as fuel adulteration measures like additives, low-grade fuels, water, air, or heating. A density alarm is provided for the onboard system alert on any fuel received that is out of spec based on the density settings in the FUELTRAX onboard system. A density alarm is also included on the MMU for alerts while bunkering in port.

Monitoring, Reporting and Verification (MRV)

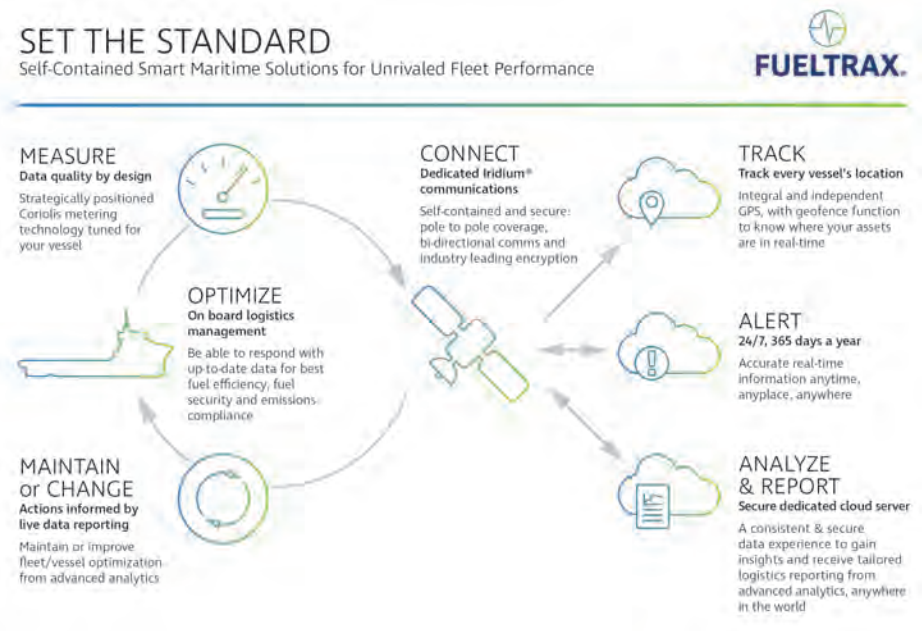
As the EU Monitoring, Reporting, Verification (MRV) regulations enter into force, these rules require operators, in certain areas, to monitor, report and verify CO2 emissions for vessels larger than 5,000 gross tonnage. This also calls for data collection on a per voyage basis.

Addressing this pressing environmental reality, FUELTRAX automatically measures and reports on the key parameters needed to verify operations are performed in accordance to the IMO guidelines. Because FUELTRAX data is stored in perpetuity, these reports can be automatically generated from the time of system installation and onward.

Bolstering the Bottom Line

FUELTRAX provides evidence to help you make decisions about fuel use, compliance and ways to make efficiencies, so that you can stay on track. Users spend less time on report generation and analysis, with current and historic data at their fingertips. Whether focusing on improving efficiencies for a single vessel or across an extensive fleet, there are additionally no integration headaches or other communications costs required.

On-board technology identifies relevant data fast, uses it effectively, and supplies predictive analytics to help keep your vessels competitive. In a nutshell, FUELTRAX lets operators know where they stand on fuel management, compliance and protecting asset health. With FUELTRAX on board, you can optimize the performance of your assets – legally, economically and with greater confidence. That's one less thing to worry about, isn't it?



Marine News 2019 Editorial Calendar

JANUARY

AD CLOSE: DEC 21

Passenger Vessels & Ferries

MARKET FEATURE: **Training & Education**

TECHNICAL FEATURE: **Driveline- Shafts, Seals Bearings**

PRODUCT FEATURE: **Pumps, Piping and Valves**

SPECIAL REPORT: **Simulation Tech & Trends**

EVENT DISTRIBUTION

PVA Maritrends: Jan 17-20, New Orleans, LA
Great Lakes Waterways Conference: Feb 5-6, Cleveland, OH

FEBRUARY

AD CLOSE: JAN 24

Dredging & Marine Construction

MARKET FEATURE: **U.S. Coast Guard**

TECHNICAL FEATURE: **Communication Technology – Satcom, Radios and Cellular**

PRODUCT FEATURE: **Water Treatment, Ballast, Grey, Drinking**

SPECIAL REPORT: **Inland Port Development**

EVENT DISTRIBUTION

Inland Waterways Conference: Mar 19-20, Cincinnati, OH

MARCH

AD CLOSE: FEB 21

Pushboats, Tugs & Assist Vessels

MARKET FEATURE: **Winches and Capstans**

TECHNICAL FEATURE: **Naval Architects**

PRODUCT FEATURE: **Hybrid Drives**

SPECIAL REPORT: **Thrusters & Inland Propulsion**

EVENT DISTRIBUTION

Shipping 2017 (CMA), April 2-4, Stamford, CT
Clean Waterways, April 16-18, Cincinnati, OH
NACE Corrosion, March 24-28, Nashville, TN

APRIL

AD CLOSE: MAR 21

Boatbuilding, Construction & Repair

MARKET FEATURE: **ATB's**

TECHNICAL FEATURE: **Coatings/Corrosion Control**

PRODUCT FEATURE: **CAD/CAM Software**

SPECIAL REPORT: **Arctic Operations**

EVENT DISTRIBUTION

IRPT Conference

MAY

AD CLOSE: APR 21

Inland Waterways

MARKET FEATURE: **Offshore Vessel Repair & Maintenance**

TECHNICAL FEATURE: **Management & Operations Software**

PRODUCT FEATURE: **Marine Jets and Thrusters**

SPECIAL REPORT: **Subchapter M Update**

EVENT DISTRIBUTION

Inland Marine Expo: May 20-22 St. Louis, MO
Tugnology: May14-15, Liverpool, UK
OTC: May 6-9, Houston

JUNE

AD CLOSE: MAY 24

Combat & Patrol Craft Annual

MARKET FEATURE: **Salvage & Spill Response**

TECHNICAL FEATURE: **Marine Cranes for Small Craft**

PRODUCT FEATURE: **Passenger and Crew Safety Equipment**

SPECIAL REPORT: **Outboard Engines**

EVENT DISTRIBUTION

SeaWork: June 26-28, Southampton, UK
MACC: / TBA Dates & location

JULY

AD CLOSE: JUN 23

Propulsion Technology

MARKET FEATURE: **Lubricants, Fuels & Additives**

TECHNICAL FEATURE: **Safety & Fire Prevention**

PRODUCT FEATURE: **Workboat Engines**

SPECIAL REPORT: **Ballast Water Treatment**

AUGUST

AD CLOSE: JUL 25

MN 100 Market Leaders

MARKET FEATURE: **Boatbuilders**

TECHNICAL FEATURE: **Marine Operators**

PRODUCT FEATURE: **Cordage, Wire Rope & Rigging**

SPECIAL REPORT: **Energy Efficiency Systems**

EVENT DISTRIBUTION
Seatrade Offshore Marine & Workboats:
Sep 23-25, Abu Dhabi, UAE

SEPTEMBER

AD CLOSE: AUG 24

Vessel Conversion and Repair

MARKET FEATURE: **Offshore Wind**

TECHNICAL FEATURE: **DP Equipment & Training**

PRODUCT FEATURE: **Hull and Deck Coatings**

SPECIAL REPORT: **LNG as a Fuel – Where are we?**

EVENT DISTRIBUTION
Shipping Insight: Stamford, CT
Clean Gulf: Nov 2-5, Houston, TX
Interferry 2019: Oct 5-9, London, UK

OCTOBER

AD CLOSE: SEP 22

Autonomous Workboats

MARKET FEATURE: **Multi-Mission Workboats**

TECHNICAL FEATURE: **Communications**

PRODUCT FEATURE: **Electronics & Navigation Equipment**

SPECIAL REPORT: **Shipyard Exports**

EVENT DISTRIBUTION
SNAME: Oct 29- Nov 2, Tacoma, WA

NOVEMBER

AD CLOSE: OCT 25

Workboat Annual

MARKET FEATURE: **Outfitting Today's Workboat**

TECHNICAL FEATURE: **HVAC / Ventilation**

PRODUCT FEATURE: **Deck Machinery-Winches and Cranes**

SPECIAL REPORT: **The Digitalization of Workboats**

EVENT DISTRIBUTION
Workboat Show: Dec 4-6, New Orleans, LA

DECEMBER

AD CLOSE: NOV 22

Innovative Products & Boats – 2019

MARKET FEATURE: **Fire, Patrol & Escort Craft**

TECHNICAL FEATURE: **Emissions Compliance and Monitoring**

PRODUCT FEATURE: **Fire & Safety Equipment**

SPECIAL REPORT: **Top 10 Stories for 2019**

EVENT DISTRIBUTION
SNA 2020 - Crystal City, VA

Information may be subject to change

IMTRA Mourns the Loss of Nat Bishop

IMTRA Corporation and its employees are saddened by the passing of former CEO and longtime member of the IMTRA family, **Nat Bishop**, after a 15-year battle with melanoma. Bishop joined IMTRA, the leading manufacturer, supplier and importer of quality marine products, in May 1974 and worked there until his retirement at the end of 2013. He opened its southeast operation in Clearwater, Florida, which proved to be pivotal for the company's growth and profitability. As a member of the IMTRA leadership team, he was responsible for numerous acquisitions and growth activities. In 1997, Bishop became the CEO, and after retirement, he remained an active member of the IMTRA board of directors. Bishop's care for his employees, customers and vendors set a tremendous example on how to live and lead.


Greene


Buono


Metcalf


Flanagan


Sirmenis


Lee

Greene, President of TOTE Services, to Retire in 2019

Rear Admiral (USN-Ret.) **Phil Greene** announced his retirement from TOTE Services effective January 4, 2019. With a career spanning more than 40 years between his navy, government and private sector careers, Greene served as President of TOTE Services since 2013. Jeff Dixon will succeed Greene as President of TOTE Services.

Marad Names Buono as USMMA Superintendent

Marad Chief **Mark Buzby** announced that **Jack Buono** is the new superintendent for the U.S. Merchant Marine Academy. Buono took command on November 9, having most recently served as President and CEO of ExxonMobil's shipping subsidiary, SeaRiver Maritime. Following his graduation from the U.S. Merchant Marine Academy, Buono worked his way up from Third Mate to an unlimited Master Mariner with ExxonMobil Corporation. He received a bachelor of science in marine transportation from the U.S. Merchant Marine Academy in 1978, and was commissioned an Ensign in the U.S. Naval Reserve.

WISTA Elects New BoD, Honors 2018 Personality of the Year

Women's International Shipping and Trading Association (WISTA) elected Connie Roozen, Director of C&B More as Treasurer and Angie Hartmann, Vice President Crew Affairs, Starbulk S.A. as Board Member to the WISTA International Executive Committee at their 38th International Annual Meeting. Sanjam Gupta, Director Sitara Shipping was re-elected to a third term on the Executive Committee. **Kathy Metcalf**, CEO of The Chamber of Shipping of America, was honored as the 2018 WISTA International Personality of the Year at the Annual General Meeting. Metcalf is also the Chairman of the International Chamber of Shipping's Environmental Sub-Committee.

Flanagan Named Yanmar America's Marketing Manager

Yanmar America Corporation announced that **Dave Flanagan** joined the company as Marketing Manager for all Product Divisions, which includes Industrial Diesel & REMAN Engines, Diesel Generators, and High Speed Commercial Marine Diesel Engines. Dave comes to Yanmar with more than 20 years of marketing executive experience across multiple industries from B2C to B2B, distribution to manufacturing and public to private.

Witt O'Brien's Welcomes New MD, Corporate Resilience

Witt O'Brien's, a subsidiary of SEACOR Holdings announced that **Devin Sirmenis** has joined as Managing Director of Corporate Resilience. He will help expand the firm's crisis management, business continuity and resilience solutions for the private sector.

Port of Oakland appoints New Commissioner

Yui Hay Lee has joined the Port of Oakland's Board of Port Commissioners.


KVH Industries

Bruun Woodhead


Fieldman


Cohen


Yoseph


Noble


Nagle


AAPA

Friedman Cernak

Mr. Lee was sworn in to a seat on the seven-member Board. Lee, President and CEO of Oakland-based YHLA Architects, replaces eight-year Board veteran Alan Yee, whose latest term expired.

KVH Announces Two Key Leadership Positions

KVH Industries announced that **Brent Bruun** has expanded his responsibilities as chief operating officer, and **Mark Woodhead** has been named executive vice president of mobile connectivity. The promotions leverage the business and maritime industry experience of the two leaders. Bruun will now spearhead corporate business development; oversee all operational and financial aspects of KVH's mobile connectivity and inertial navigation businesses; lead financial planning and analysis; foster investor relations; and work toward organizational excellence across the global company.

Fieldman Joins Bouchard as Risk Manager

Bouchard Transportation announced that **Rick Fieldman** joined the Company as Risk Manager. Fieldman has over forty years of experience in the marine insurance field. Aside from working with four multinational marine insurance brokers over the years, Rick also spent a total of six years on the marine insurance underwriting side, in addition to a short stint with a large Stevedoring company where he served as Director of Insurance and Claims.

Bouchard's Cohen Promoted to Director of ISM

Bouchard Transportation recently congratulated **Lawrence Cohen** on his successful completion of International Safety Management (ISM) Certification Training. The firm also announced his promotion to Director of ISM and Audit Inspections. Cohen joined Bouchard in August, 2016 as Safety and Vetting Coordinator. He graduated from SUNY Maritime College in 2013, with a degree in Marine Transportation. He holds licenses as a 2nd Mate of Unlimited Tonnage and a Senior Dynamic Positioning Officer.

Ashur Yoseph Joins WSP's San Francisco Office

Ashur Yoseph has joined WSP USA as a senior vice president in the firm's San Francisco office. Yoseph will be responsible for business development in support of WSP's property and buildings and transportation and infrastructure businesses. His more than three decades of experience includes advancing and implementing strategies to increase public as well as private sector expansion.

BRP Marine Group Appoints Network Development Director

BRP Marine Group has named **Dustin Noble** to be their new director of network development. Noble will be responsible for managing and expanding the BRP Marine Group dealer and distributor network. Noble served as director of sales – PG&A at Textron prior to joining the BRP Marine Group team, and has also served in positions of progressive leadership and responsibility with both Arctic Cat and Honda Motor Company. Noble has a bachelor's degree in business marketing from St. Mary's University.

AAPA CEO Nagle Will Retire in 2019

Kurt J. Nagle, long-time president & chief executive officer of the American Association of Port Authorities (AAPA) announced last month that he will be retiring from the association next fall, following more than 33 years of service. Nagle began his work at AAPA in 1985 as the membership services director, following seven years at the National Coal Association and Coal Exporters Association. In 1995, he was appointed AAPA's president & CEO, a position he has held for 23 years.

Port of Cleveland CEO William Friedman Named AAPA Chairman

William D. Friedman, president and chief executive officer for the Port of Cleveland, has begun his one-year term as the 2018-19 chairman of the board for the American Association of Port Authorities (AAPA). The Port of Cleveland is a growing international gateway serving Midwestern industries on the Great Lakes while spurring job creation and economic vitality in Ohio's Cuyahoga County. Friedman succeeds **Steve Cernak**, chief executive and port director for Broward County, Fla.'s Port Everglades.

Barrow Hennessey Scheib Short Smith

Inland Rivers, Ports & Terminals

Metal Shark Alabama Announces New Appointments, Newbuild Contract

USA shipbuilder Metal Shark has announced its entry into the towboat market with a contract to build three 120' x 35' river towboats for Florida Marine Transporters, Inc. of Mandeville, Louisiana. The four-decked, welded-steel, USCG Subchapter "M"-compliant towboats were designed by John W. Gilbert Associates. Construction is underway at Metal Shark Alabama, with deliveries commencing in 2019. The contract signals Metal Shark's expansion into the steel shipbuilding sector and formal entry into the inland towboat market following the company's June acquisition of the assets of Horizon Shipbuilding. With that purchase, Metal Shark, best known as a builder of welded aluminum vessels, assumed ownership of a fully developed 35-acre Alabama shipyard and announced its intent to significantly expand its steel shipbuilding efforts. To support its growth plans, Metal Shark named **Tim Scheib** as President of Metal Shark. **Mike Hennessey**, former Brownsville Marine Products VP of Sales and Marketing, now serves as Metal Shark's Director of Commercial Sales – Inland Waterways. **Billy Smith III**, former founder, shareholder, and Vice President of Trinity Yachts, LLC., now serves as a Key Account Manager for Metal Shark. **Doug Barrow**, formerly General Manager of Great Lakes Towing Company and Great Lakes Shipyard, now serves as a Vice President at Metal Shark and directs operations at Metal Shark Alabama. **Travis Short**, formerly President and CEO of Horizon Shipbuilding, was retained in Metal Shark's acquisition of Horizon and now serves as an Executive Vice President at Metal Shark Alabama.

IRPT Congratulates Accredited Marine Port Executives

Inland Rivers, Ports & Terminals (IRPT) recently congratulated IRPT members as part of the Accredited Marine Port Executives (AMPE) Class of 2018. In that group were Paul Aucoin-AMPE and Dale Hymel-AMPE, both of the Port of South Louisiana; Susan Taylor-AMPE, Port of St. Louis (MO) Authority; and Crystal Hutchinson-AMPE, Louisiana International Gulf Transfer Terminal Authority. According to IRPT, the Accredited Marine Port Executive (AMPE) certification is the highest level of professional certification offered.

OSVDPA Opens 2019 Membership Enrollment

The Offshore Service Vessel Dynamic Positioning Authority (OSVDPA) is now accepting Individual and Corporate Membership Applications for the 2019 calendar year. Membership provides individuals and companies involved in the dynamic positioning industry the ability to advise the OSVDPA on the content and requirements of the OSVDPA DPO Certification Scheme. OSVDPA Executive Director, **Aaron Smith**, said, "The input and feedback we continue to receive from our member has proven to be invaluable. In particular, we're proud of the fact that we are willing to go to bat for our members in all aspects of our scheme, be it training, industry standards and guidelines, or communication with other certification schemes and entities."

EPA Awards $4.7 Million to Curb Diesel Pollution

The U.S. Environmental Protection Agency (EPA) in November announced funding for three clean diesel projects totaling $4.7 million to reduce air pollution from aging diesel engines in the Mid-Atlantic region. Cumulatively, this funding will result in overall lifetime emissions reductions of more than 1,013 tons of ozone-forming oxides of nitrogen (NOx); 58.7 tons of particulate matter (PM); more than 240 tons of carbon monoxide (CO): 724 tons of carbon dioxide (CO2); and, will save more than 91,000 gallons of fuel. EPA will provide $2.5 million to the port of Baltimore to assist MES in its efforts to reduce diesel emissions at the port. This project will replace or repower cargo handling equipment, as well as marine engines on the vessel, The Spirit of Baltimore. Additionally, EPA will provide Wash-COG with $882,000 to partially fund the repowering of four diesel propulsion engines and four auxiliary engines on two marine passenger vessels.

EDT Approved as TPO under Subchapter M

The Towing Vessel National Center of Expertise (TVNCOE) announced

Smith

AdobeStock © dbvirago

The U.S. Environmental Protection Agency

Buzby

that the Coast Guard has approved Engineering Design & Testing (EDT) as a third-party organization (TPO) to carry out certain functions in accordance with Subchapter M. A complete list of all ten Coast Guard approved TPOs can be found on the TPO webpage. Organizations other than recognized and/or authorized classification societies that conduct TPO functions for towing vessels must be Coast Guard approved.

Marad Chief Buzby Welcomes Cadets to Annual WOW Conference

Maritime Administrator Mark H. Buzby welcomed female cadets from the seven U.S. maritime academies to the 10th annual Women on the Water Conference, held November 1-3 at Maine Maritime Academy in Castine, Maine. The conference showcases the successes of women in the maritime industry. "The demand for a highly trained mariner workforce increases daily," said Administrator Buzby. "By providing our female cadets with the opportunity to learn from other female maritime industry leaders, we hope to inspire them to greater levels of achievement in their careers." The WOW Conference is held annually at one of the seven maritime academies across the country, focuses on encouraging female cadets by providing them with access to the maritime industry's top female professionals.

PRODUCTS

In-Mar Solutions: Wynn Marine Type C & Type D, Heavy Duty Straight Line Wipers

Wynn Type C (internal motor) and Type D (external motor) Straight Line Wipers offer the most advanced design of linear action window wiping systems for marine and other specialized applications. Optimum window coverage can be achieved and enhanced by utilizing a twin-bladed or dual-arm/blade design.

www.inmarsolutions.com

ABB Ability Marine Pilot Vision for Ship Automation

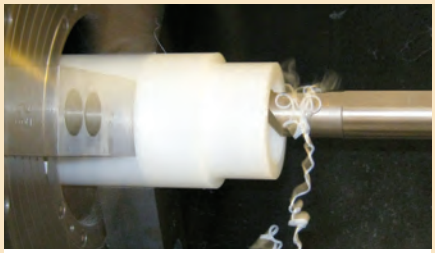
ABB has unveiled a new situational awareness solution that will make vessel operations safer and more efficient. The solution can be used anywhere onboard and marks the next step towards remotely controlled and ultimately autonomous ships. ABB Ability Marine Pilot Vision takes advantage of the latest advances in sensor technology and computer vision to offer multiple real-time visualizations of a vessel's surroundings.

www.abb.com

YANMAR Launches Smallest CR Inboard Diesel

YANMAR is launching a new generation common rail (CR) diesel engines, the compact YANMAR 3JH40 inboard engine. The 3-cylinder 3JH40 is reportedly the marine industry's smallest CR inboard diesel engine, enabling commercial operators to benefit from the performance of electronically-managed CR fuel-injection technology. With minimal fuel consumption, low noise and emission levels, the YANMAR 3JH40 surpasses EPA Tier 3 and EU RCD Tier 2 emission regulations.

www.yanmarmarine.com



Vesconite Celebrates 60th Anniversary

2018 marks the 60th anniversary of VescoPlastics and Vesconite, its first engineering plastic. The company's line of thermopolymers is used in the marine and pump sectors. VescoPlastics has warehouses and stocking agents on every continent, and serves customers in over 100 countries. Self-lubricating Vesconite and Hilube are advanced ultra-low friction polymers, offering dimensional stability and load strength, and a wear life up to 10 times that of bronze.

www.vesconite.com

Holdfast - Lightweight, High Grip, High-Strength, Floating Line

Holdfast is the ideal blend of strength and grip, utilizing high modulus polyethylene (HMPE) fiber and nylon fibers to deliver a lightweight, high-strength, floating line that grips on H-bitts and capstans where 100% HMPE lines won't. Coated with TEUFELBERGER's proprietary abrasion resistant coating, engineered for higher strength and durability for barge lines, tug pendants, tug winch lines and many other applications, it comes in assorted colors.

www.teufelberger.com

Conveyor Components Accessories Catalog Simplifies Ordering

Superior Industries has published a conveyor components accessories catalog. The manufacturer says the 50-page catalog includes data related to product part numbers, measurements, weights, replacement data and more. Components distributors, OEM's and dry bulk material producers can access the catalog at bit.ly/2rIFSGw. Superior Industries supplies bulk crushing, screening, washing and conveying systems for industries including construction aggregates, bulk terminals, agriculture, power and biomass.

www.superior-ind.com

Fireboy-Zintex Means Fire Safety

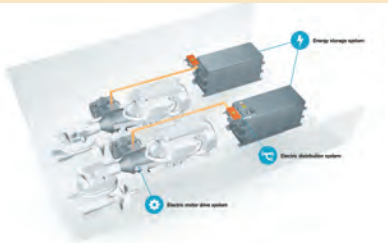
Fireboy-Xintex supplies Fire Detection, Fire Suppression and Gas Detection systems for the marine industry. Featuring products that comply with USCG, ABS, IMO/SOLAS and RINA, the firm has been in business since 1973, celebrating its 45th anniversary this year. Fire-Xintex provides Pre-engineered Clean Agent Fire Suppression systems, Engineered Clean Agent Fire Suppression systems Fire Detection systems, Carbon Monoxide Detection systems and Gas and Propane Detection systems.

www.fireboy-xintex.com

Schuyler Companies Marine Fender Products

Schuyler Companies, an OEM provider of marine fender products for the vessel and dockside markets is celebrating its 68th birthday. The Schuyler story begins with visionary founder Fred B. Schuyler. Fred transformed an industry by introducing more durable rubber products, thus enhancing durability, affordability, and safety. The fenders produced today, as they have been in the past, are made from 100% recycled rubber.

www.schuylerco.com



Volvo Penta's Hybrid Marine Propulsion Concept

Designed to enable zero emission running for marine vessels, Volvo Penta has unveiled a hybrid concept for its IPS propulsion system. The electric-only mode allows entry into environmentally sensitive zones, as well as offering enhanced onboard comfort and boat handling characteristics. Designed to extend further IPS's advantage, the hybrid variant will also bring additional benefits, including lower noise, vibrations and running costs.

www.volvopenta.us/brand/en-us/home.html

Harken Industrial's C-Hero Man Overboard Rescue System

Harken Industrial's C-Hero Man Overboard Rescue System includes the C-Hero Vertical Rescue Davit, a lightweight portable man overboard system, which consists of a small crane and a self-tailing Harken winch, that quickly attaches to any bitt on a boat. The radial winch in this system provides mechanical assistance that allows a rescue to be performed by a single crewmember. The crane's boom is long enough to clear tires and fenders.

www.c-hero.com

Wing Inflatables Announces New Certifications

Wing Inflatables has been awarded two certifications that will continue to grow its worldwide footprint. Now ISO 9001:2015 certified, Wing's quality management system and the knowledge of its employees have met rigorous international-standard requirements. Wing also received a CE (European) boat certification for its P4.2 Craft, meeting the EU Recreational Craft Directive requirements, including essentials such as stability, buoyancy and flotation.

www.inflatablesolutions.com

Caterpillar Marine's Next Generation Azimuth Thrusters

Caterpillar Marine's latest generation of MTA v3 azimuth thrusters is based on the proven, reliable design of the v2. The MTA v3 provides tug customers with fuel efficiency and the best operation modes for their performance needs. The MTA v3 lineup covers the entire Cat 3500 range and provides the benefits of large savings in maintenance costs, lower maintenance and service risks, and simple FiFi installation.

www.caterpillar.com

PRODUCTS

Wärtsilä's Lock Entry Assist System Prevents Damage

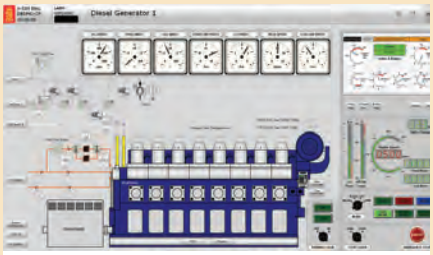
Wärtsilä has developed a lock entry assist system that facilitates a vessel's approach and entrance into waterway locks. The system uses high performance global navigation satellite systems (GNSS) to measure the vessel's position to centimeter accuracy as it enters the lock. Speed adaptive controls, together with allocation of the thruster and rudder, minimizing the influence of external forces from wind and current when entering the lock.

www.wartsila.com

Victaulic Simplifies Maritime Gasket Specification

Victaulic's new DNV GL Type Approved Grade T "Type A" Nitrile gasket, designed for use with Victaulic couplings and flange adapters, simplifies gasket specification and offers superior fire-resistant performance. Applications include open-ended piping containing flammable liquids heated above flash point, open-ended liquefied gas, flammable liquids below flash point, sea water, fresh water, sanitary/drains/scuppers, sounding/vent, air and other systems.

www.victaulic.com/shipbuilding



Kongsberg Digital: DNV GL Approval for Engine Room Simulator

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

www.kongsberg.com

SF Marina celebrating 100 years

SF Marina has been a leader in providing concrete Pontoons and breakwaters for a century. Internationally recognized for providing tailor-made marinas and advanced floating solutions, SF Marina has delivered more than 1000 marina references worldwide. Their products survive typhoons, storms, hurricanes, ice, tides, and sun and salt exposure throughout the year. 100 years later, SF Marina is still there after the storm.

www.sfmarinausa.com

Dellner Brakes Goes Global

Dellner Brakes' global product range brings together power transmission products from their US, Swedish and German operations for the first time. This global product offering follows the company's acquisition of US brake and clutch specialist Gummi USA in September 2017 and Pintsch Bubenzer. Products include drum shaft brakes, reduction gear clutches, torsional couplings and rotary unions as well as technologically advanced braking solutions.

www.dellner-brakes.com

Cox Powertrain's CXO300 Diesel Outboard

Cox Powertrain's game-changing CXO300, diesel outboard engine has arrived. Built for professional marine use from the ground up, the CXO300 is the highest power density diesel outboard engine ever developed. With a 25% better range and longer service intervals, it has been designed to live up to three times longer than an equivalent outboard engine, something crucial to the operation and performance of fast response vessels.

www.coxmarine.com

Shell Marine 40 Launched for Tug Markets

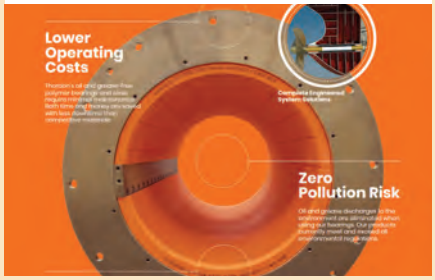
Shell Marine 40, an engine oil for high-speed diesel engines in the tugboat segments, enhances the performance of engines on board some of the world's hardest working vessels. Formulated to react to the combustion processes that take place in high-speed engines, it gives added protection and extended machinery life to vessels whose unavailability can have disproportionate cost consequences further along the supply chain.

www.shell.com

Thordon's New Bearing Informational Portal

Thordon Bearings has unveiled a web-based platform to provide information about the commercial, technical and environmental advantages of using grease-free and water-lubricated polymer bearings across a wide variety of applications. The website is designed to provide shipowners, shipyards and propulsion system integrators with the information they need to make more informed procurement decisions, especially with regards to water-lubricated propeller shafts.

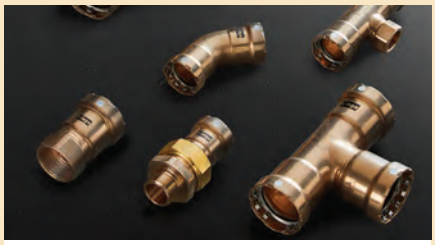
www.thordonbearings.com



The X-Factor Barge Cover Handling System

Contractors Industrial Supply's (CIS) X-Factor "No Boots on the Barge" Barge Cover Handling System can dramatically reduce the safety risks facing barge operators. X-Factor is a safe, efficient system for barge cover handling that prevents the need for human assistance. X-Factor quickly, efficiently and safely removes fiberglass barge covers without exposing terminal operators to the hazard of physically being on the product barge.

www.cismarinedivision.com



Viega MegaPress Stainless, MegaPress CuNi add USCG, ABS Approvals

Viega has obtained ABS type approval and an acceptance letter from the USCG for Viega MegaPress Stainless and MegaPress CuNi piping systems. These join previously approved MegaPress and MegaPressG systems for use with carbon steel and galvanized pipe, providing a full line of materials—carbon steel, galvanized, stainless and copper nickel. Viega applications include compressed air, sprinklers, cooling water, low-pressure steam, fuel, lubes and more.

www.viega.us

MJP's Next Generation of WaterJet Propulsion – X Series

Marine Jet Power (MJP) latest advancement in waterjet technology is the X Series. The new range of waterjets capitalize on MJPs successful duplex steel product line by offering a highly efficient, highly durable product at a much lower price point. The unique technology reduces power demand by 20 percent and reduces weight by up to 10 percent compared to axial flow jets.

www.marinejetpower.com

MobileOps Platform Bolsters Safety, Maintenance and Compliance

The MobileOps Platform is a cloud-based subscription solution that includes both a Web Application and an online-capable iPad application called Voyager. Companies choose MobileOps because it is easy to use, cost effective and backed by great customer service. Deploying MobileOps across a fleet of vessels bolsters safety, maintenance, and regulatory initiatives. MobileOps is easy to use and features collaborative management-crew dynamics.

www.mobileops.co

Marine Marketplace

Powered by www.maritimejobs.com

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

MaritimeJobs.com
where employers and job seekers connect
The Maritime Industry's Leading Employment Website. For more information contact: Jean Vertucci at vertucci@marinelink.com

VESSELS FOR SALE / BARGES FOR RENT

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

emr
We buy barges, ships, and other marine vessels and structures for scrap.
We adhere to the highest ES&H standards.
Serving the rivers and coasts of the U.S.
AMELIA • BROWNSVILLE
LAKE CHARLES • MOBILE
MORGAN CITY • NEW ORLEANS
us.emrgroup.com
CALL 800 - GO SCRAP

10 years online over 2 million users
MaritimeJobs.com
where employers and job seekers connect

NEW PRODUCTS

LLEBROC INDUSTRIES
WWW.LLEBROC.COM • 800-284-5771
On the Leading Edge of Marine Seating.

Phoenix SERIES 2 HELM CHAIR
GSA
Llebroc Seats Now Available at
S3 MARITIME SYSTEMS • SERVICE • SUPPORT
206-420-4932 • www.s3maritime.com

TriState Coating & Machine
MARINE & DREDGE DIVISION
Leading The Way

Hard Coated Liner Sleeves • Marine Propulsion Shafts • Pump Rebuild Replacement Parts
Jockey Bar & Steering Linkage Pins
1-800-477-4460
www.TriStateCoating.com

Operator panels
X2 marine
Built for life at sea
X2 series. Strong. Stylish. Smart.
Learn more at beijerelectronics.com/x2marine

ABS KR CCS CE FC
X2 marine panels are available in 7 and 15 inches with optional high brightness display and integrated CODESYS PLC functionality.
Beijer ELECTRONICS

NEW PRODUCTS

Marine Marketplace

NEW PRODUCTS

Marine Marketplace

NEW PRODUCTS

PROFESSIONALS

ADVERTISER INDEX

Page	Company	Website	Phone#
5	AER	www.aersupply.com	(281) 474-3276
27	Ahead Sanitation	www.aheadsanitationsystems.com	(337) 330-4407
1	Citgo Petroleum Lubrication	www.clarionlubricants.com	(855) 692-5274
C2	Cummins Commercial Marine	www.marine.cummins.com	Please visit our website
49	Diesel America West, Inc. / LOADSTAR	www.dawest.com	(360) 378-4182
C3	Fireboy-Xintex LLC	www.fireboy-xintex.com	(616) 735-9380
56	In-Mar Solutions	www.inmarsystems.com	(225) 644-7063
11	MAN Engines & Components Inc.	www.man-engines.com	Visit us online
18,19	Marine Systems, Inc	www.marinesystemsinc.com	(985) 223-7100
55	McDonough Marine Services	www.mcdonoughmarine.com	(504) 780-8100
25	Metal Craft Marine Inc.	www.MetalCraftMarine.com	(613) 542-1810
21	Metal Shark Boats	www.metalsharkboats.com	(337) 364-0777
3	Moose Boats	www.mooseboats.com	(707) 778-9828
C4	R.W. Fernstrum & Company	www.fernstrum.com	(906) 863-5553
23	SF Marina USA	www.sfmarinausa.com	(207) 347-4237
11	Surface Navy Association	navysnaevents.org/national-symposium	Please visit our website
7	YANMAR America Corporation	www.yanmar.com/us	Visit us online

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

FIRE SUPPRESSION & FIRE DETECTION SYSTEMS

For USCG Compliance

FIREBOY® - XINTEX®

A Darley Company

ON BOARD, ON GUARD!

Clean Agent Fixed
Fire Suppression Systems
up to 17,500 cu. ft.

Elite RSM

Alarm Strobe

Smoke Detector

fireboy-xintex.com

YOU DON'T WORRY ABOUT KEEPING YOUR COOL —

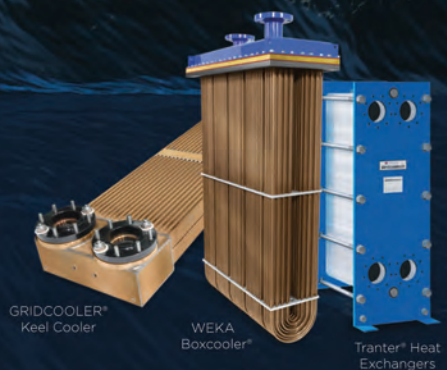
UNTIL YOU LOSE IT.

Get it. Never lose it.

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

R.W. Fernstrum Cooling Solutions.

fernstrum.com | 906.863.5553 | sales@fernstrum.com



FERNSTRUM®
R.W. Fernstrum & Company

R.W. Fernstrum & Company is an ISO 9001:2015 Certified Company