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Volume 29 • Number 5

Marine News

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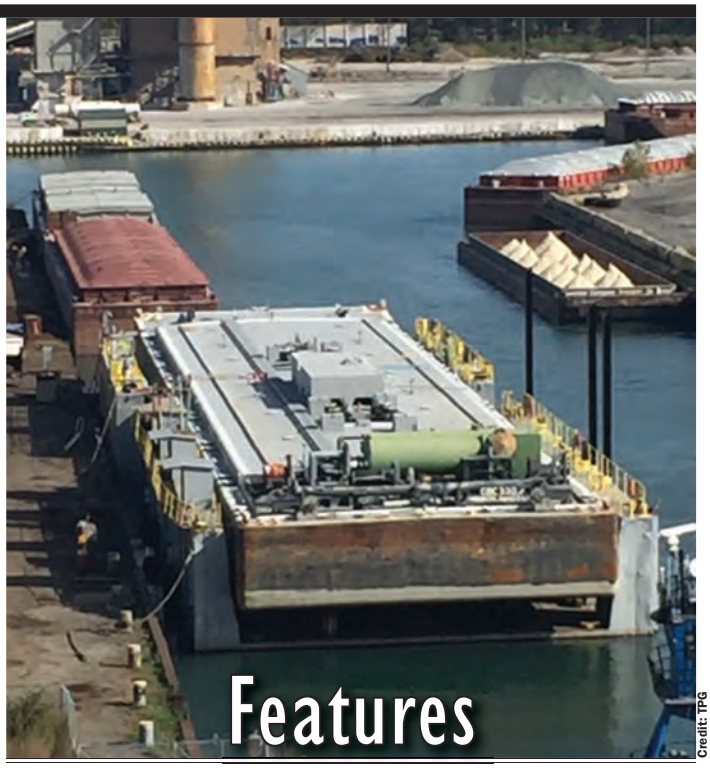

Features

Credit: TPG

ON THE COVER

The enduring value of the inland waterways to the nation's commerce and wellbeing cannot be overstated. Hard work – on the water, in the office and inside the Beltway – is the collective force that keeps it moving.

Image credit: Gregory Thorp

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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.

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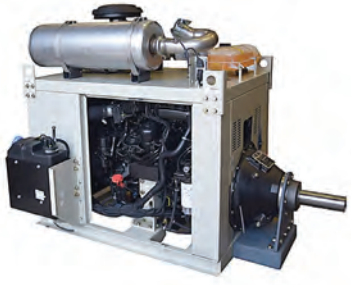

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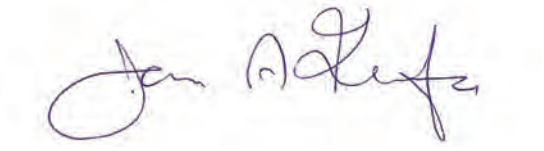
If I can get across just one point to readers in a given year, I always choose to reiterate that the U.S. merchant marine today is largely comprised of a brown water fleet and the mariners who operate that collective tonnage. Indeed, one of my favorite statistics is that of the roughly 40,000 hulls under U.S. flag, approximately 39,700 of those assets can be classified as inland, coastal, or brown water workboats of one kind or another. Also not lost on our inland stakeholders is that a large subset, more than 5,500 vessels, are now being impacted by the Coast Guard's so-called Subchapter M towboats rules.

There's no better vehicle for me to expand upon the importance of our domestic commercial fleet than our annual Inland Waterways edition. And, since ***MarineNews*** has – by a wide margin – the largest (BPA) audited readership of any North American workboat b-to-b trade publication, then you've come to the right place to learn about the foregoing topics. Moreover, when you have the chance to hear the collective wisdom of both Dr. Craig E. Philip at Vanderbilt University (previously President & CEO of Ingram Barge Company) and Mark K. Knoy, the current President and CEO of American Commercial Barge Line, all in the same edition, then you know why ***MarineNews*** has become the 'go-to' reference for all things 'inland.'

With ACBL commanding a versatile and far-flung fleet of almost 3,800 inland towboats, barges and myriad logistics hubs, chief executive Mark Knoy has his finger on the pulse of inland waterways like no one else. His insights, starting on page 14, bring current business conditions into sharp focus for stakeholders. Likewise, Dr. Philip's previous tenure in a similar situation, coupled with his academic research, delves deeply into intermodal safety at a time when no other issue is demanding as much attention. It is 'must-read' copy.

Separately, and also within this robust edition, ***MarineNews*** contributor Patricia Keefe tenaciously digs into the nitty-gritty details of the widely publicized but (sometimes) poorly understood Volkswagen Mitigation Trust Fund settlement. The $2.9 billion (with a ***B***) settlement promises to further the already impressive effort to clean up the air on the domestic waterfront. With that said, why are you lingering on this paragraph when you should be turning to page 40 to find out how, why, when and where your next marine engine replacement will take place – mostly on someone else's nickel?

Finally, this edition, appropriately enough, also touches upon the importance of workboat communications, especially in the public service, littoral military and response craft markets. Inside, you'll find out just how important that is, why, and where to get it. Here at ***MarineNews***, we're all about goods comms, as well. In this case, and in every edition that follows, it's about communicating the most important business, financial, operational and regulatory news of the day, clearly and in a compelling fashion. We do that quite well. The largest North American workboat audience, voting with genre-leading subscription numbers, thinks the same thing.



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MarineNews
May 2018
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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.

Dr. Craig Philip is Research Professor of Civil and Environmental Engineering at Vanderbilt University and Director of Vanderbilt's Transportation Center (VECTOR). He spent 35 years in the rail, intermodal and maritime industries, notably serving as President/CEO of Ingram Barge Company, the largest US marine transport carrier. He earned his doctorate in Civil Engineering from MIT and his bachelor's degree from Princeton.

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Safely Transporting Hazardous Liquids and Gases in a Changing U.S. Energy Landscape

A newly issued *National Academies of Sciences, Engineering, and Medicine* report has expressed concerns about the safety of rail to transport energy liquids and gases. According to the report, pipelines and maritime transportation have more comprehensive safety systems in place. With the sharp and largely unexpected increase in the long-distance movement of domestically produced crude oil, ethanol, and natural gas since 2005, a number of concerns have arisen about the safe transportation of these hazardous energy liquids and gases. To examine these concerns, the *National Academies of Sciences, Engineering, and Medicine*, through the auspices of the *Transportation Research Board*, sponsored a study of the relative safety of transporting these commodities by pipeline, barge, and rail. The report recommends policies that can help reduce the likelihood of future safety incidents and ensure an effective emergency response when incidents do occur.

The report also explains that direct comparisons of the safety performance of the individual modes are hindered by inconsistencies in safety and traffic volume data. For example, such comparisons can also be irrelevant to decision making when the modes are not viable alternatives to another.

The committee found that pipelines and waterways have accommodated major portions of the growth in domestic energy liquids and gases, and they have done so without creating major new safety problems and within the basic framework of their longstanding regulatory and safety assurance systems. Railroads, on the other hand, have an opportunity to create a more robust safety assurance system for moving crude oil and ethanol, one that resembles those of the maritime and pipeline carriers according to the committee. That's because, prior to 2005, railroads had little experience carrying ethanol and crude oil in large quantities. The surge in domestic production of oil and ethanol resulted in a glut of energy resources in parts of the country that lacked sufficient barge and pipeline takeaway capacity. Therefore, railroads began to transport hazardous energy liquids in tank cars that had not previously carried these flammable materials in bulk and with shippers that lacked experience transporting them.

Preventing the derailment of these older railroad tank cars is imperative. In addition to car design, post-incident investigations of severe flammable liquids train derailments indicate track wear and defects are common causal factors. Questions remain about the technical basis for the track inspection standards, which set an allowable failure rate, and whether these allowable rates and repair priorities should be adjusted for routes that continue to be used by tank car unit trains. Emergency response preparedness has improved but opportunities for improvement remain. Many communities lack familiarity with responding to large-scale incidents involving trainloads of flammable liquids. Industry and government authorities face a continuing challenge in ensuring that these response procedures are widely known and that existing training opportunities are exploited.

Between 2010 and 2016, oil transmission pipeline mileage grew by more than 40 percent, but incident rates have been generally stable, with year-to-year fluctuations stemming from periodic high-consequence events that are sufficiently rare as to limit judgments about their underlying risk. Although the committee found no new safety problems have emerged from the increased use of pipelines transporting larger volumes of domestic oil and gas, substantially more pipeline mileage and higher traffic volumes may result in more pipeline releases over time, simply because of the increase in exposure.

Conversely, when the committee examined the safety record of energy liquids movement by waterways, it found no reports of ethanol or natural gas liquids releases over the past 10 years and only rare reports of crude oil releases. A series of incidents 30 years ago led to statutory and regulatory safety reforms producing a robust and anticipatory safety culture that can serve as a model for other energy transport modes. Pipelines and barges have accommodated major portions of the growth in domestic energy liquids and gases, and they have done so without creating major new safety concerns.

The committee recommended that the Pipeline and Hazardous Materials Safety Administration (PHMSA) undertake a comprehensive review of the successes and

Mode	Tank Vessels (#)	Pipelines	Rail
Rate of Spillage (*)	0.001 barrels	0.002 barrels	0.005 barrels
Data Reference Dates	2003 – 2012	2010 – 2015	2010 – 2015

(*) Rate of spillage for every 100 barrels transported. (#) includes tankers, barges and ATB's. Data: courtesy Dagmar Etkin

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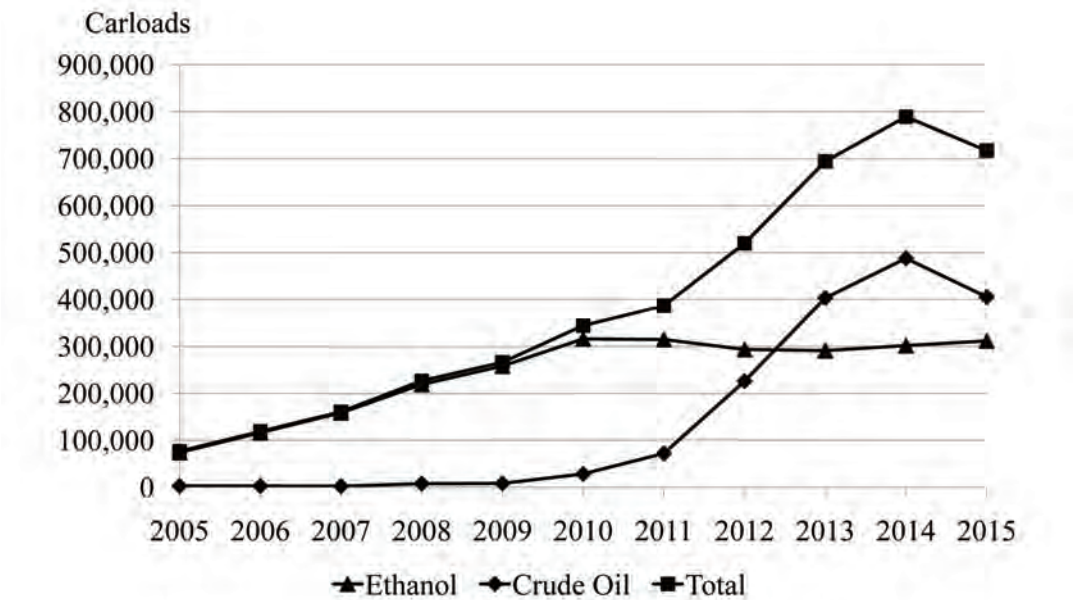
failures in responding to transportation safety challenges since 2005, in order to inform the development of more anticipatory and robust safety assurance systems. PHMSA should take the lead organizing federal emergency preparedness grants and review training opportunities to respond to the needs of communities. Moreover, PHMSA and other safety regulators should encourage pipeline, barge, and rail carriers to make greater use of quantitative risk analysis tools, for instance, to inform decisions about priorities for maintenance and integrity management of the equipment and infrastructure and about the routing of energy liquids by rail.

The safety record of energy liquids movements by barge has been exemplary. In contrast, railroads were in a much different position when the domestic energy revolution commenced. Unlike waterways, railroads had virtually no experience transporting large volumes of crude oil and ethanol. The industry and regulators were compelled to react to incidents and the new safety issues they presented. As these safety issues have become better understood, and the demand for rail transportation of crude oil has slowed, the challenge for the rail industry and regulators is to develop a safety assurance system that has a high degree of robustness like that of the maritime sector.

Annual Oil Spillage from Tank Vessels into US Waters (Selected years)

Year	Tankers	Tank Barges	Total
1968	576,488	7,333	583,821
1977	4,748	37,178	41,926
1987	35,623	13,044	48,667
1997	527	3,805	4,332
2007	339	210	549
2012	396	46	442
Total: 1968-2012	**2,988,128**	**1,147,064**	**4,135,192**



U.S. crude oil and ethanol rail carloads, 2005-2015.

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The Transportation Research Board's report, Safely Transporting Hazardous Liquids and Gases in a Changing U.S. Energy Landscape (2017), can be found at the National Academies Press at www.nap.edu

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President and CEO, American Commercial Barge Line

ACBL named Mark Knoy as its president and chief executive officer in August 2011. Prior to joining ACBL, he was vice president of American Electric Power's (AEP) Fuel, Emissions and Logistics Group and president of AEP River Operations, having joined AEP with its 2001 purchase of MEMCO Barge Line. From 1984 to 1994, he was owner/operator of The Mark Twain Towing Company and Delmar Marine, Inc., Pekin, Illinois. He began his career in 1973 working aboard towboats on the inland waterways as a deck hand and then as a captain. Today, Knoy serves as a director of the Corps of Engineer's Inland Waterways Users Board, a Board of Trustees' member for both the Coast Guard Foundation and The Seamen's Church Institute and its Center for Maritime Education and Ministry on the River, chairman of the National Waterways Foundation, and board member for the H.T. Pott Inland Waterways Library at the University of Missouri - St. Louis. He is a past chairman of both the Waterways Council, Inc. and the Midwest Region of the American Waterways Operators. Quite simply, there is perhaps no better known name, with more impressive credentials, on the inland waterfront. This month, he weighs in for ***MarineNews*** readers on a wide range of issues impacting the commercial, inland waterfront.

Give us your assessment of today's market conditions on U.S. inland waters, especially in the areas that ACBL operates.

Stating the more obvious, there are too many barges in both the dry and liquid markets, creating cheap freight prices. For dry commodities, the biggest culprit is coal. At its peak in 2006, barges delivered more than 160 million tons of coal to utilities. In 2017, early estimates suggest that number was barely 90 million tons. We have increased competition from South America in the Agricultural sector, with Brazil and Argentina now both major players in the global market. There's a lot going on with the steel and aluminum tariffs on imports, but it isn't yet clear how that will shake out in the end, but I believe it will be good for our industry in two ways. One, barge prices are increasing with higher steel prices and will need higher revenues to justify investment. Secondly, we should handle more steel inputs with less semi-finished imports.

Another bright spot is the construction industry, which accounted for more than 40% of steel shipments in 2016 as well as construction materials. It looks like it might be about to turn the corner and finally show some solid recovery following the recession. We also expect to see some benefit from promised infrastructure development – not only in terms of waterways infrastructure but in demand for the commodities needed to bring it to fruition.

Demand for liquid barges surged in the middle of the last decade when the country experienced massive growth in crude oil production and relied heavily on rail and barge to deliver their product. That demand slowed as more pipeline capacity became available. There is, however, a great deal of construction activity going on, particularly along the Gulf Coast, to support growth in the refining and chemicals industries. Inexpensive and abundant supplies of natural gas and crude oil have enticed companies from all over the world to invest in U.S.-based petrochemical production. The American Chemistry Council estimates that there are more than 300 projects representing capital investment of $185 billion in various stages of development due to shale gas. U.S. crude oil production is increasing at a remarkable pace and is expected to exceed average production of 11 million barrels per day in 2018. Finally, over the last five years, exports of U.S.-made ethanol have more than doubled to total 1.3 billion gallons in 2017. All these developments will lead to exciting opportunities in our liquids business.

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What will it take for freight rates to improve on the inland rivers?

Simply put, more demand or less supply. Higher steel prices create higher scrap prices and that could drive some barges into retirement early basis the scrap revenue against the current market freight earnings. Secondly, the current freight market will not support hopper barges that will soon exceed $600,000 to build. I would expect tank barge prices to move up sharply as well and that should curtail investor building as these new construction prices aren't supported by today's revenues.

You are unique among your inland CEO peers in that you've worked on deck and as a Captain, prior to stepping into the boardroom. What do you bring from the wheelhouse to the c-suite that helps you run a better company?

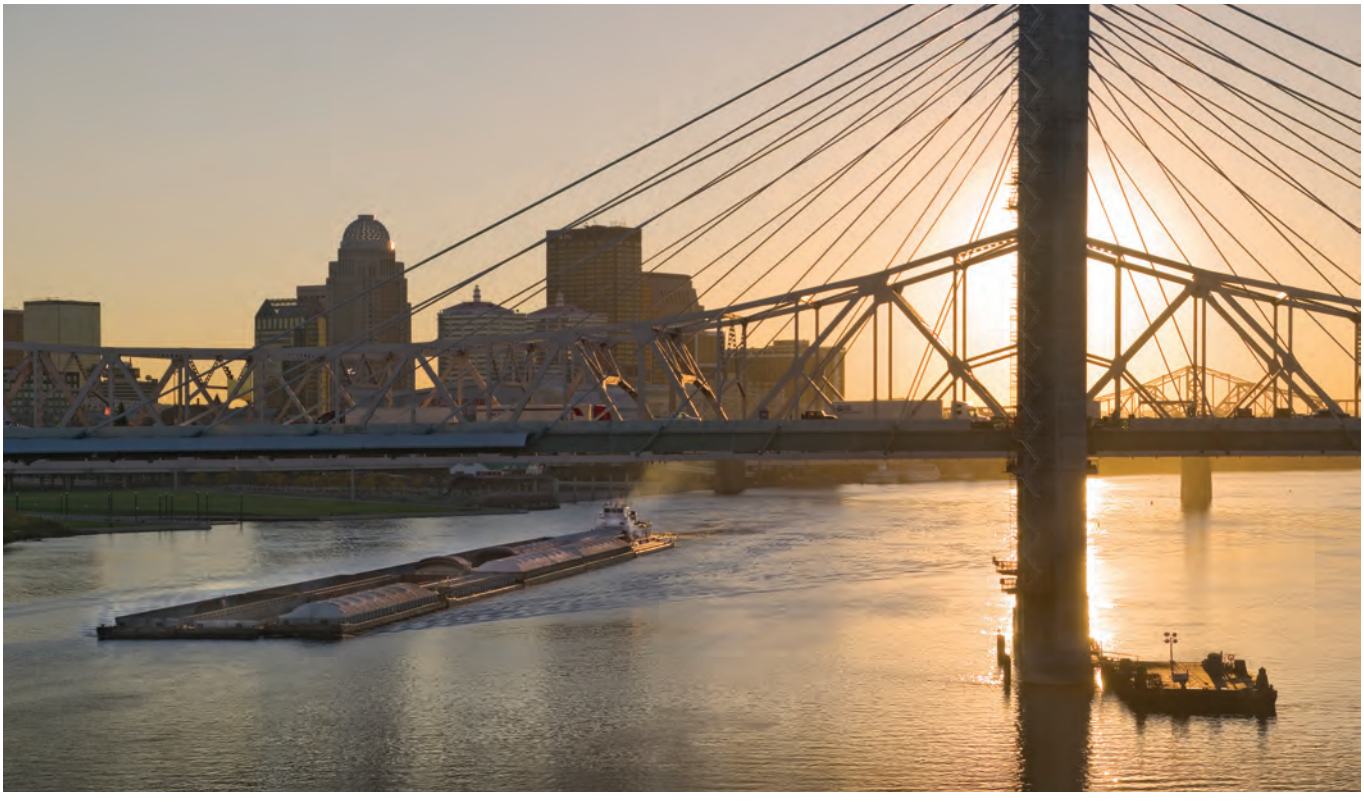
It really is apples and oranges in working on a boat versus leading a company, but we're still in the same family, and that's people. Leading people is the secret to any team's success and I love the challenge and opportunity that this team gives me every day. I certainly have a firsthand understanding of the risk that we are asking our mariners to manage. My towboat experience gave me a greater appreciation of the commitment and sacrifice that mariners make daily to keep freight moving along our waterways. Therefore, I'm very passionate about the safety and wellness of our mariners and their families. I always strongly encourage our new teammates to get out on a boat, to a fleet, dock, terminal or shipyard and see how these pieces fit together to deliver to the building blocks of our nation, distribution energy resources and moving agricultural products to export in the most efficient and safest mode there is.

Do you see more consolidation ahead, as operators struggle to get the rates they need to keep quality equipment and mariners on the water?

We are all struggling in these challenging markets with surplus equipment. Nobody sets their sights on selling at the bottom, so I think we'll have to see some upswing before consolidation comes back into play. The industry is fairly well consolidated already. On the dry cargo side, there are only six operators with 90% of the equipment; and eight tanker barge operators handle 77% of all tankers.

Your 2017 sale of some ACBL tonnage and assets came an interesting time. On one hand, coal has made a bit of a rebound (some would say temporary). What was behind the transaction and what's next for your firm?

Utility demand for barged coal has declined by roughly 70 million tons since its peak. Utilities are not building new coal plants because they do not believe one or two administrations will significantly alter the environmental trends or cost differentials that have been driving them



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away from coal for the past several years. It is simply not worth the risk to invest in an expensive plant that probably won't be cost-effective to operate. It is true that coal exports have seen a rebound over the past couple of years, but they are still well below their peak of more than 125 million tons in 2012. It is important to understand that the U.S. is a swing supplier to the global market. Countries typically only "shop" the U.S. for coal when they must because of higher shipping costs due to relative the length of the ocean voyage. Also because of shipping distances, East Coast ports are generally preferred to the Gulf Coast. If/when coal exports decline, the first to feel it will be the Gulf Coast and the barge industry.

The ACBL fleet of more than 3,600 barges and 140 towboats, coupled with your network of logistics hubs and transshipment facilities brings together a multimodal, flexible supply chain for customers. Tell us about the value that this brings.

Anytime we can differentiate ourselves from our competitors, we have an edge and that's what we're constantly looking for. In Memphis, we can offer liquid customers delivery from barge, through our terminal and directly to their local plant, one stop shopping. In St. Louis, we transfer western coal to barges for final delivery to their generating station. We handle all of their logistics and help with surging inventories. Have a high-speed unit-train transfer facility below the last locks keeps us operational year round. Lastly, in Lemont, we offer break-bulk handling of steel materials from barge to warehouse to truck to final delivery. In each of these cases, we make it easy for our customers to manage their transportation logistics with one contact and one final invoice.

In 2015, AEP River Operations was sold by its parent company to ACBL. Talk about the integration and what's happened in the interim.

There was a tremendous amount of synergies in the business, and great number of talented mariners, and teammates with relationships throughout the industry. Overall, the integration went extremely well from our perspective and we continued to crank out efficiencies in the operations for a couple years. I think we're now operating with the most efficient model. There were many similarities between the cultures, but change is always challenging no matter how similar goals and objectives may be. Managing the change through this process is the most difficult, and the most rewarding.

Transporting agricultural products to deep draft export venues is one of the most important functions of domestic inland rivers. Competitors from South America are trying to do the same thing. Are we doing enough to maintain our inland infrastructure, locks and dams?

Having the Inland Waterway System we have in our country benefits not only the farmer, by being more competitive in a world market, but also benefits our coal exports, and our manufacturing, that relies on our Inland Waterways for the efficient movement of raw materials needed for production of products that consumers purchase on a daily basis. While other countries are improving their delivery systems, Congress seems to be satisfied with just barely maintaining our Inland Waterways. In comparison to many other programs, the inland waterways system could be brought up to world class standards of less than $10B. That seems like a bargain when compared to other infrastructure challenges.

The federal FY18 Omnibus includes $6.83 billion for the U.S. Army Corps of Engineers (Corps), an increase of $789 million from fiscal 2017. The President speaks of so-called P3 projects for infrastructure. What are your thoughts on that score?

Public Private Partnerships on other modes of transportation may work, however on the Inland Waterways we have had a Public Private Partnership since the Inland Waterways Revenue Act was codified in 1978. Since this legislation was enacted the Inland Waterways Industry, via the Inland Waterways Trust Fund (IWTF) have contributed $2.8 Billion into rebuilding our Inland Waterways Infrastructure while the U.S. Treasury has contributed $3.7 Billion into our infrastructure. So how does adding additional P3's that could impose additional tolls, lockage fees, or vessel fees, make our countries exports more competitive in the world economic environment?

Jeffboat, one of the nation's oldest, largest and best-known inland builders will close its doors, owing largely to an extremely quiet barge-building sector. That said; certain sectors of our barge fleets are quite mature, while others very new. What's the time sequence that you would see for any uptick in the barge newbuild sector, and what will eventually precipitate that movement?

One the dry side, we anticipate it will take through at least 2019 before attrition brings the size of the fleet more in line with demand. Significant demand growth would, of course, speed up the process. The pressure index on tank barges is well into the negative with significant new builds over the past several years that were not supported by increasing demand. Most of the new builds were unit tow barges. It looks like the fleet has somewhere around 500 too many barges for current demand levels.

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Subchapter M is here and it is impacting the inland waterfront like nothing that came before it. Will SubM be largely a 'non-event' for your tonnage and mariners or will there be certain things that you'll need to do different?

ACBL is certainly ready for the implementation of SubM, as should other AWO members that have been following these new regulations. It certainly will not go without notice here at ACBL, as the volume of paperwork itself is staggering. Excluding the paperwork, I do think the new regulations will separate our industry into compliant and non-compliant operators and it will be up to the USCG to enforce the new rules. Even without enforcement, we will all be better operators, but it will cost some operators additional dollars if they have not been living and breathing the AWO RCP or another SMS.

Inland operators depend heavily on the maintenance of inland waterways. Many stakeholders agree that this is not keeping pace with failing infrastructure that is well past its intended life span. Your past role with WCI positions you well to speak about solutions. What are your thoughts?

In 2015 the Corps received ~$649 Million in O&M funding for Inland Waterways, the Omnibus legislation that just passed funds Inland Waterways O&M at $992 Million, ~35% increase in O&M for Inland Waterways, so it would seem we are getting our message to our Federal Appropriators on the importance of increasing O&M funding for our Inland Waterways.

Regarding inland infrastructure, so much depends on it – your business as well as the supply chain itself. What would be the consequences of a major lock failure on our primary tributaries?

Over the last six months, ACBL has lost nearly $10M due to the closures at Lock 52. Reference the most recent joint study between the National Waterways Foundation and the U. S. Maritime Administration, compiled by the Vanderbilt University and the University of Tennessee, which found a catastrophic failure of an important lock failure, on our primary tributaries, would result in ~$1.1 Billion and ~$1.7 Billion in annual transportation costs.

Does coal have a future?

Coal absolutely has a future. There are still many highly efficient, low emission coal-fired power plants producing electricity. These plants have long lifespans and will continue to supply the grid for many years to come. The lion's share of domestic coal consumption (93% in 2017) is for electrical power generation. That being said, domestic utility coal is not a growth market. No new coal-fired power plants are under construction or even on the drawing board. The Department of Energy projects coal consumption by the electric power sector to fall from 675 million tons in 2017 to a low of 595 million tons by 2022. Although they do predict a rebound from those lows, they don't expect coal consumption by the electric power sector to surpass 641 million tons through their forecast out to 2050. In terms of exports, the Department of Energy projects incremental increases in coal exports but not exceeding 100 million total tons through 2050. The small growth in exports is just not enough to offset the downturn in domestic consumption. Over the last two decades, Utility coal moved on waterways dropped 54 million tons while the barge fleet only shrunk by 1,342 barges, or about half of what the historical coal to barge ratio was.

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Countdown to Subchapter M:

Last Minute Tips for Choosing the USCG or TPO/TSMS Option from an industry subject matter expert ...

By Richard J. Paine, Jr.

Paine

Subchapter M will finally be implemented in the tugboat and towing industry in only a few short months. It has taken over ten years to arrive, but the build-up and in some cases, hysteria, can only be compared to the Y2K scare at the end of 1999. During that period, the world said Y2K would cause computer crashes, commerce to end and daily life to come to a crashing halt.

Now, fast forward almost twenty years and enter Subchapter M. The date, July 20, 2018, does not have the same media grabbing headliner impact as 01.01.2000, but it does remain at the forefront of owner/operators, as well as the United States Coast Guard's (USCG) attention. However, the Subchapter M date can yield the same uneventful Y2K results, if owner/operators have done their due diligence or at least are prepared for a strong finish. To that end, a few last minute planning tips can lead to a better result. Understanding of how the traditional USCG option and the differences offered in the Third-Party Organization (TPO) alternative will impact Subchapter M compliance, in a crowded and growing inspected commercial vessel industry, will make all the difference.

The Coast Guard Option

The USCG option is the traditional method for owners/operators to become compliant with regulations and receive a Certificate of Inspection (COI). The OCMI (Officer in Charge, Marine Inspections) has a dedicated team of inspectors within each local Sector that performs this

Credit: Eric Norcross

"The feedback from industry and regulators during the bridging period allowed USCG to acknowledge their limited resources and identify other ways to offset the daunting task of increasing their inspected vessel fleet. One of those areas builds upon the Coast Guard's strong working relationship with owner/operators that have been voluntarily participating in UTV program over the years. The success of that program has provided industry with another path to expedite the COI process."

duty. Historically, the USCG inspection program has dedicated much of their time to the passenger vessel industry for their COI compliance. So, how does that affect the tugboat and towing vessel industry?

The answer comes down to a matter of numbers. The passenger vessel industry has been in the USCG inspection process now for years. The active passenger vessel sector is comprised of over 6,000 inspected vessels in the entire country. In each of those operations, the USCG and owner/operators work collectively to submit and review required documentation, schedule required annual, or more frequent inspections, as well as including drydock inspections.

In order to understand the full breadth of the USCG daily inspection responsibilities, let's use the Port of New York as an example. The Port of New York & New Jersey, alone, will introduce an additional 300-plus tugboats and towing vessels into their COI database and that only includes who they currently anticipate will require COIs. Nationally, the expectation is that a minimum of 5,000 tugboat and towing vessels will require COI's. That means that additional vessels and operators may still be added to that capacity, but more importantly that means that there will be more competition for scheduling dates and time of the team of inspectors. At this time, there will reportedly be no new USCG OCMI inspectors added to take on the increase in tugboat and towing vessel COI inspections.

Outside of potential scheduling headaches, there remain some cost-savings benefits to the USCG option. The initial year's user's fees have been waived but will return following the year one roll-out period. The overall COI inspection process will remain similar to the passenger vessel industry in that towing vessel owner/operators must contact

Tug & Barge Crew Member Training Program:

Meeting the USCG 46 CFR Subchapter M Regulations

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An ECM Group Company

The new Subchapter M regulations will affect thousands of vessels across the maritime industry. A towing vessel must have a Certificate of Inspection (COI) as of July 22nd, 2018. This COI will be issued based upon the tug and barge crew members being properly trained pursuant to Subchapter M training requirements.

In anticipation of the new Sub Chapter M regulations coming into effect, ECM Training Services, LLC has prepared the **Tug and Barge Crew Member Training Program** which is self-paced and completely on-line. Our Tug & Barge Crew Member Training Program is designed with the latest training requirements set forth by the USCG under 46 CFR Subchapter M including all of Part 140–Operations, 141.240 & 142.245.

This program comes with a 30 day user license. After successful completion of all the course requirements, such as study time, quizzes and tests, ECMTS will award the user a program completion certificate. We also provide ongoing user support through subject matter experts.

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OCMI 90 days in advance to begin the COI process. This process includes document review and other preparatory requirements. Upon completion and meeting of the first requirements, owner/operators may schedule their vessel inspections within 30 days. If you are planning on using the USCG and have not reached out to your local OCMI yet, then stop reading and contact them now.

The feedback from industry and regulators during the bridging period allowed USCG to acknowledge their limited resources and identify other ways to offset the daunting task of increasing their inspected vessel fleet. One of those areas builds upon the Coast Guard's strong working relationship with owner/operators that have been voluntarily participating in UTV program over the years. The success of that program has provided industry with another path to expedite the COI process.

USCG implemented policy that recognizes those vessels that have a valid UTV decal within three years from the date the towing vessel is required to undergo its initial COI issuance, the decal will be applied as full credit that an initial inspection for certification has occurred, provided a few conditions are met. Those conditions include that if the TPO option is selected, the TPO must have issued TSMS certification to owner/operator of the vessel at least six months before the date the vessel is scheduled for its initial COI issuance. There must be no outstanding major non-conformities and a copy of the report must be submitted to the OCMI with the Application of Inspection (CG-3752) at least 30 days in advance of the scheduled initial COI issuance date. (2) The vessel has successfully completed both a vessel audit and a survey with no major non-conformities. *(Refer to USCG CVC Policy letter 17-01 for further guidance.)*

The TPO/TSMS Option

Changing course to one of the more insightful and accommodating areas of Subchapter M is the TPO/TSMS (Towing Safety Management System) alternative. The TPO alternative is unique to the tugboat and towing vessel industry and allows owner/operators the flexibility of choosing a TPO to complete their COI. As we covered earlier, this option will be critical to meet the high demand of inspections to meet Sub M compliance. Additionally, it provides owners/operators with the opportunity to select a TPO from traditional classification societies such as ABS, DNV-GL or choose a newer TPO, such as the Towing Vessel Inspection Bureau (TVIB). Owners/operators can make the best business decision that meets their goals, timelines, and more importantly, their budget.

Additionally, Owners/Operators can use an existing safety management system to obtain an initial Certificate of Inspection. Owner/Operator holding valid ISM will be considered compliant to TSMS requirements. Other accepted safety management systems, such as AWO-RCP may also be considered as meeting the TSMS requirements along with objective evidence that the vessel complies with Subchapter M. *(**Note:** As of March 7, 2018, USCG Policy was amended to include 3-year objective evidence in lieu of holding TSMS Certificate for six-month prior to issuance of vessel's initial COI. [Refer to USCG CVC Policy letter 17-02 (Ch.01) for further guidance.])*

The real strength to the TPO/TSMS option is that it is specific to tugboat and towing vessel industry. This means that there is less sharing of resources and time, specifically with the domestic passenger vessel market and competing for limited resources currently available within United States Coast Guard. For Owner/operators

that are still debating on their Sub M compliance avenue, the TPO option may be right choice, especially this late in the game. Here are some of the key differences and planning tips to consider.

- ***Select a TPO that best meets your needs, including your wallet:*** *Owner/operators should be aware of the benefits to outsource their external audit and vessel surveys through TPOs. There is added flexibility to shop around to use certified auditors and surveyors that meet owners/operators' needs. The TPO market is filled with both established players such as ABS, DNV-GL, ClassNK America and also newer TPOs, such as TVIB and Meridian Global.*
- ***Schedule a TSMS External Audit/Vessel Survey:*** *Owners/operators must demonstrate compliance and proficiency to the requirements of the TSMS. This is verified by a TSMS approved Lead Auditor and a Certified vessel surveyor. Certified auditors and surveyors have been vetted and are authorized to work through TPOs. This area provides owner/operators with the greatest tool to meet their compliance needs. The biggest benefit is that due to the pool of certified talent available, there is scheduling and pricing flexibility available to owner/operators and with each day getting closer to July, that becomes invaluable. (Refer to USCG CVC Policy letter 18-01 for further guidance.)*

Many owners/operators have done their due diligence and are in good position to make July 20, 2018, just another day of doing business. However, for those still uncertain about selecting the USCG or TPO/TSMS option, there is no time to wait. Remember, there is no wrong choice. The only wrong choice is to not make a decision and move ahead. Consider this your warning: The final countdown to Subchapter M is officially here and you're running out of time. Choose wisely.

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***

The Mississippi River is Boiling!

U.S.-Flag dredgers answer the call in the Mississippi River Basin.

By William P. Doyle

Doyle

Major flooding this winter in the Mississippi River Basin has created significant increased shoaling in the Southwest Pass Channel of the Mississippi River. Shoaling is generally described as the river containing elevated levels of sand and sediment resulting in high water levels and river swelling. The Southwest Pass, spanning the lower end of the Mississippi River (Baton Rouge, LA) to the Gulf of Mexico, services four of the top 20 major ports in the Unites States.

There are more than six dredgers working in the Louisiana's Southwest Pass. The U.S.-Flag private sector is answering the call. Manson Construction sent three hopper dredges (the Bayport, Newport and Glenn Edwards) and the cutter suction dredge (Mitch M White); Dutra Group sent its hopper dredge the Stuyvesant; and Weeks Marine enlisted the cutter suction dredge the GD Morgan.

Greg Bush, President of The Federal Pilots of Louisiana said, "The Mississippi River level started rising early this year and silted up the Southwest Pass in short order. The U.S-Flag dredging companies responded immediately with their dredgers and equipment and continue to do an excellent job clearing the sediment allowing ships and vessels to transit."

The authorized depth for Southwest Pass is 45 feet. Early on this year, even before the spring season, the channel began showing signs of degradation. The channel depth for transit has been lowered to 42 feet and degraded channel conditions and draft restrictions have multiple impacts such as the increased potential for vessel groundings and accidents. There is also the potential for damage to the environment due to flooding; economic losses because ships would have to light-load their ships or transfer cargo to lightering operations.

Of note, USACE opened the Bonnet Carré Spillway in

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early March – only the 12th time in the spillway's 87-year history. However, Sean Duffy, Executive Director of the Big River Coalition points out, "That's true, but the Bonnet Carré has been opened four times in the past ten years." Duffy continued, "Four openings over the last decade indicates the system is changing and I remain concerned about the increasing frequency of high river levels and related flood events. We appreciate the U.S. dredging industry's help." The Mississippi River crested just below the 17-feet flood stage at the Carrollton Gage in New Orleans on March 19, 2018. At the peak of this year's opening, 183 of the river diversion structure's 350 bays were opened.

According to USACE, the Bonnet Carré Spillway is located 28 miles above New Orleans and is a vital element of the multi-state Mississippi River and Tributaries (MR&T) System. Located on the east bank in St. Charles Parish, it can divert a portion of the river's floodwaters via Lake Pontchartrain into the Gulf of Mexico, thus allowing high water to bypass New Orleans and other nearby river communities. The structure has a design capacity of 250,000 cubic feet per second (cfs), the equivalent of roughly 1.87 million gallons per second.

The Dredging Contractors of America and its member companies have kept in close contact with the Army Corps. USACE's preventive and immediate actions to maintain operable navigation channels include routinely scheduled channel surveys, and close collaboration with industry stakeholders such as the U.S. Coast Guard and local Bar Pilots regarding the river's condition and navigation aids.

Water levels on the Mississippi are receding, but the river remains at an elevated level and the U.S.-Flag dredges will remain in the Southwest Pass until their job is complete.

We put America first, it's our duty as American Dredgers to make sure the Big River flows, commerce moves, and the environment is respected.

William P. Doyle is the CEO & Executive Director of the Dredging Contractors of America (DCA). Twice a U.S. Senate confirmed Presidential appointee to the U.S. Federal Maritime Commission (FMC), Doyle has, over the course of a long and celebrated career, worn many prestigious hats. Prior to his FMC appointment, Mr. Doyle served on cabinet and executive level boards and committees under both the Obama and George W. Bush Administrations. Before that, he served as an officer in the U.S. Merchant Marine as a U.S. coast Guard licensed marine engineer aboard numerous classes of vessels.

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By Brendan Neligan, Regional Vice President of Ocean & Inland Marine, at XL Catlin

Neligan

US Inventor Thomas Edison once said: "There is no substitute for hard work." Nobody knows this better than the men and women who operate diverse and industrious workboat fleets.

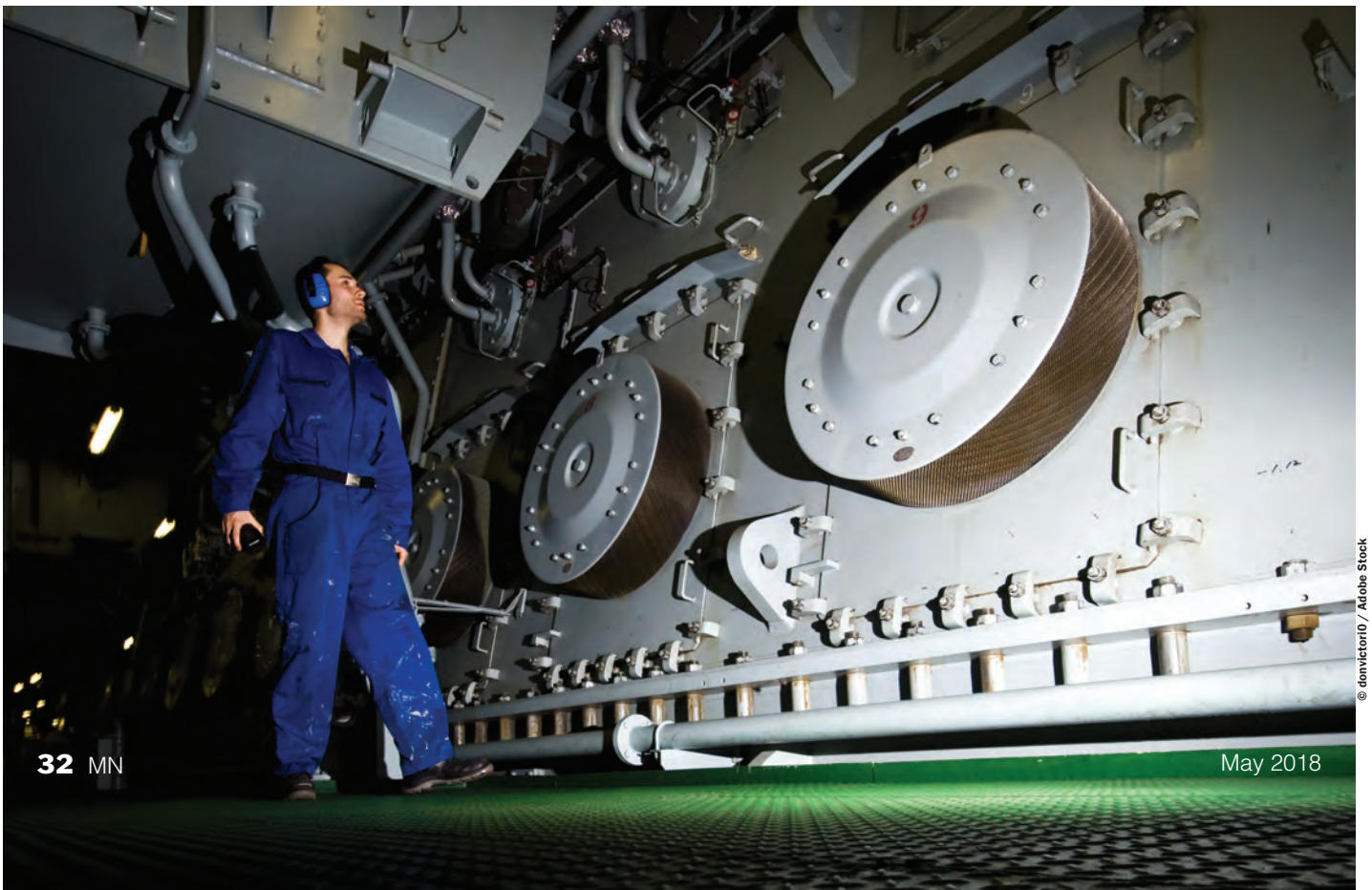
Ferrying commuters, towing dry and liquid bulk, and assisting larger ocean vessels maneuvering through more crowded ports only scratches the surface of the tasks performed by workboats and their crews. The work is hard and laborious, coupled with an environment that grows more challenging every day … and one that certainly needs appropriate precautions and protections in place.

Inherently Dangerous

As in any industry, accidents happen. Most will admit workboats are inherently dangerous places to work. From pulling a large barge to handling powerful equipment on choppy waters, serious accidents happen on a regular basis. One example is when a deckhand recently lost his lower left arm in a line handling accident in New York Harbor.

In 2016, the National Transportation Safety Board's (NTSB) safety and information manual cited the most significant factors leading to workboat accidents include operator fatigue, use of medication, distractions such as cell phone usage, and errors in procedures when operating in a strong current.

Despite an overall steady downward trend in work boat



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Marine News

EDITORIAL CALENDAR

JANUARY

Ad Close: Dec 15

Passenger Vessels & Ferries

MARKET: Training & Education
TECHNICAL: Hybrid Propulsion
PRODUCT: HVAC & Ventilation
SPECIAL REPORT: Ballast Water Treatment
REGIONAL FOCUS: U.S. East Coast

PVA Maritrends:
Jan 28 - 31, Savannah, GA

FEBRUARY

Ad Close: Jan 16

Dredging & Marine Construction

MARKET: U.S. Coast Guard
TECHNICAL: Marine Lubricants
PRODUCT: Pumps, Pipes & Valves
SPECIAL REPORT: Inland Port Development

Inland Waterways Conference:
Mar 20 - 21, New Orleans, LA

MARCH

Ad Close: Feb 15

Pushboats, Tugboats & Assist Vessels

MARKET: Winches & Capstans
TECHNICAL: Naval Architects
PRODUCT: Workboat Engines
SPECIAL REPORT: Thrusters & Inland Propulsion

CMA Shipping:
Mar 12-14, Stamford, CT
Clean Waterways:
April 4-5, St. Louis, MO

APRIL

Ad Close: Mar 15

Boatbuilding, Construction & Repair

MARKET: Marine Cranes
TECHNICAL: Coatings/Corrosion Control
PRODUCT: CAD/CAM Software
SPECIAL REPORT: VGP Compliance
REGIONAL FOCUS: North American West Coast

NACE Corrosion: April 15-19, Phoenix, AZ
OTC: Apr 30 – May 3, Houston, TX

MAY

Ad Close: Apr 16

Inland Waterways

MARKET: Barge Building & Outfitting
TECHNICAL: Workboat Comms
PRODUCT: Cordage, Wire Rope & Rig
SPECIAL REPORT: Subchapter M Towboat Rules

IMX: May 21-23, St. Louis, MO
Electric & Hybrid Marine World Expo:
Jun 27-29, Amsterdam, NL

JUNE

Ad Close: May 15

Combat & Patrol Craft Annual

MARKET: Salvage & Spill Response
TECHNICAL: ATB's
PRODUCT: Pollution Prevention & Response equipment
SPECIAL REPORT: Shipyard Exports

Clean Pacific: Jun 19-21, Portland, OR
SeaWork: Jul 3-5, Southampton, UK

JULY

Ad Close: Jun 15

Propulsion Technology

MARKET: Lubricants, Fuels & Additives
TECHNICAL: Safety & Fire Prevention
PRODUCT: Shafts, Seals & Bearings
SPECIAL REPORT: Workboat Repair
REGIONAL FOCUS: Great Lakes

AUGUST

Ad Close: Jul 16

MN100 Market Leaders

MARKET: Boatbuilders
TECHNICAL: Marine Operators: Crew Training and Retention
PRODUCT: Hull and Deck Coatings

SEPTEMBER

Ad Close: Aug 15

Offshore Annual

MARKET: OSV & Offshore Trends
TECHNICAL: Dynamic Positioning Equipment & Training
PRODUCT: Pumps, Pipes & Valves
SPECIAL REPORT: Regulatory Outlook

OCTOBER

Ad Close: Sep 17

Autonomous Workboats

MARKET: Multi-Mission Workboats
TECHNICAL: Management & Operations Software
PRODUCT: Electronics & Navigation Equipment
SPECIAL REPORT: Simulation Tech & Trends

SHIPPINGInsight: Oct 9-11, Stamford, CT
Commercial Marine Expo:
Oct 17-18, Providence, RI
SNAME: Oct 23-27, Providence, RI

NOVEMBER

Ad Close: Oct 15

Workboat Annual

MARKET: Outfitting Today's Workboat
TECHNICAL: Marine Gears
PRODUCT: Deck Machinery-Winches and Cranes
SPECIAL REPORT: The Marine Fuel Debate
REGIONAL FOCUS: Gulf Coast

Clean Gulf:
Nov 13-15, Houston, TX
Workboat Show:
Nov 28-30, New Orleans, LA

DECEMBER

Ad Close: Nov 15

Innovative Products & Boats

MARKET: Fire, Patrol & Escort Craft
TECHNICAL: Emissions Compliance and Monitoring
PRODUCT: Fire & Safety Equipment
SPECIAL REPORT: Top 10 Stories for 2018

accidents, the leading cause of death is falling overboard. According to the Coast Guard's Maritime Commons blog, falls overboard account for approximately 50% of towing vessel fatalities.

Other Risk Factors

Workboat owners and operators find it increasingly difficult to hire the right talent. As in many industries, the maritime industry is dealing with an aging workforce and faces challenges in recruiting new talent. Workboats are not a typical 9-5 operation; instead they are often a 24-hour operation, requiring small crews to spend days or weeks aboard while taking turns sleeping and working. Finding the right talent is a pressure felt throughout the maritime industry. A shrinking workforce also translates to severe gaps in experience. And of course, inexperience poses significant risk.

Most workboat fleets are at least 40 to 50 years old, and built to traverse less complex lock and dams with smaller barges in tows. Over time they have been worn down and pushed to their brink, resulting in high repair costs and more time in "layup." New-builds are too expensive to buy. Plus, re-builds – those with new propellers and engines – are generally just as effective as the new-builds. Aging boats require operator/owners to be especially vigilant in maintenance and upkeep to ensure the boats remain in good, working condition. Boats in layup are a drain on the balance sheet, so owners walk a fine line in ensuring new upgrades will make for more efficiency over a greater period of time.

Consolidation is also having a major impact on the workboat industry. Most of today's workboat operators are smaller, family-owned regional operators. With no succession plans in place for 10 to 15 years down the road, larger work boat operators are acquiring smaller regional operators. Such consolidation requires a careful look at how crews are integrated and how owners and operators are properly protecting newly acquired assets and crews.

The 411 on Insurance

Fortunately, whether it's a single barge on the Mississippi, a fleet of towboats on the Ohio River or ferries shuttling commuters, a growing marine insurance industry is quite adept at tailoring coverage for workboats' diverse needs. According to a recent market study released by Technavio, the global marine insurance market is projected to grow to USD 39.75 billion by 2021, at a Compound Annual Growth Rate of nearly 3% over the forecast period.

Growth opportunities have prompted many new entrants in the marine insurance market. Some sources estimate there are more than 100 marine insurers active today. More marine insurance carriers, along with additional factors, have created a very competitive marketplace in recent years. As a result, workboat insurance rates – across all lines of cargo, hull & machinery, and marine liability – were on the decline. But as anyone in the maritime industry knows, winds change and particularly following the 2017 Hurricane Season, many anticipate that insurance rates will change direction too.

This Hurricane Season resulted in an early estimated $206 billion of losses in the insurance industry, which could bear the distinction of being the costliest hurricane season in US History. As most lines of insurance have been underpriced for years, insurers are seeking rates that are more realistic and sustainable for the risks that they are assuming.

It is also important for workboat owners and operators to evaluate potential insurers prior to making an insurance decision. It is important to evaluate the insurer's longevity in the market space and track record. It is important to see how they have supported their maritime clients over time, and especially in the wake of a large loss event. Most insurers enter the maritime market when the going is good. After suffering losses, they tend to reevaluate and reconsider which lines of coverage they will underwrite. These market exits leave clients searching for other options.

As in any business arrangement, there are plenty of benefits in developing a long-term partnership. It certainly isn't any different when partnering with an insurer. If an insurer has a longstanding commitment to the marine industry with seasoned marine underwriters, there is a greater degree of certainty that they are more cognizant of a workboat fleet's risk profile, the perils they face every day, and the risks they see on the horizon.

Think like an Insurance Underwriter

Insurance underwriting is an analytical process. Especially when insuring workboats, all of which can be operated so differently and perform a wide array of duties, underwriters will perform a thoughtful analysis to accurate price a workboat's risk.

Thinking like an underwriter can help workboat owners/operators not only better understand the insurance underwriting process, but also pinpoint areas on which to focus risk management/loss prevention efforts. Thinking like an insurance underwriter will help you get the best coverage for the best price. Here are basic areas to think about:

- *Maintenance: Are the engine and other mechanical parts in good repair? Is safety equipment stowed on boards and easily accessible if needed? Do you have an ongoing Safety Program in place?*

- *The Crew: Is the crew skilled and knowledgeable? Do crew members have the right paperwork? Do you provide proper training and incentivize your crew for promoting a Safety Culture?*
- *Operations: What kind of services/ operations does the fleet provide? Do you have an Operations Director or Risk Manager?*
- *Navigation area: What risks are posed by the workboat's working environment? Are they working the coasts or just the inland rivers? Do you know that some jurisdictions in which you operate are more litigious than others?*
- *Value: Is the valuation correct on your vessels? What upkeep procedures are in place to ensure that operating equipment fits the job? Are your Condition & Valuations up to date?*
- *Risk Management Response: What are a fleet's claims trends and frequencies? When something happens, how well does the owner/ operator get to the root cause of the loss? How does the company respond to these causes? What's done to make a correction or take a precaution?*

Other things to consider when building an insurance program that works right for a workboat fleet is risk retention. Challenge underwriters to propose deductible options. Strong consideration is often given to those insureds who want to have "skin in the game." Especially as insurance rates begin to change direction, more maritime companies may be looking to retain more risk to balance potentially increasing rates.

Also, determine what loss prevention services the insurance carrier will provide. Often these are provided at no additional cost. They can reveal an unidentified exposure or validate that your current procedures are sound.

Maritime risks are growing ever more complex. Bigger vessels are moving larger volumes of cargo moving around the globe into much busier ports. And workboats are often right on the front lines of it all. To protect your interests, partner with committed marine insurers and brokers to make the insurance buying process more efficient and easier to navigate.

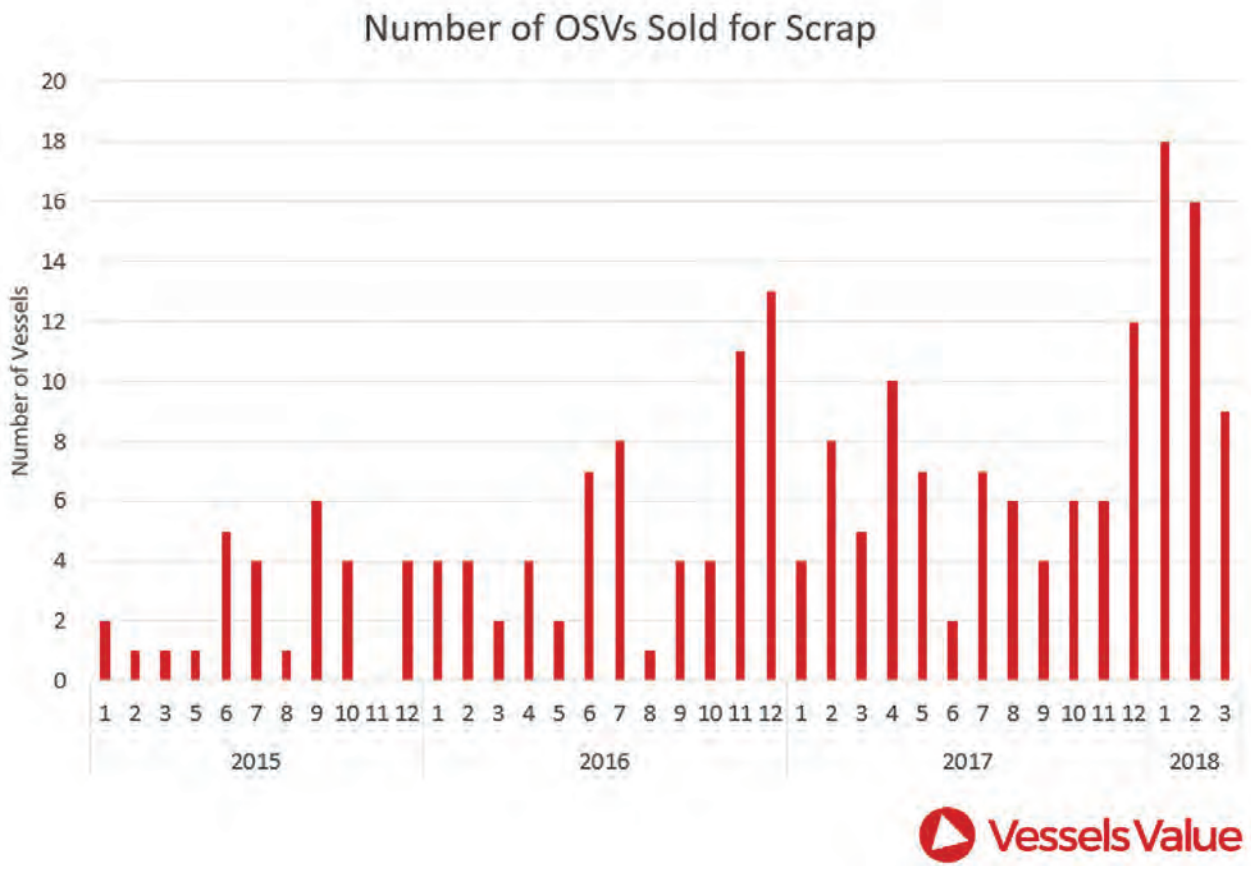
OSV YTD Scrapping Rates Increase by 153%

As the severity of the offshore energy downturn has increased and the likelihood of older vessels returning to work begins to diminish, owners have slowly come round to the importance of scrapping these vessels. According to VesselsValue, U.S. owners might be leading the way.

According to VesselsValue, an online valuation and market intelligence service for the maritime and offshore sectors, in this current period of downturn, critics of offshore shipowners will say that owners have been guilty of not scrapping older tonnage in order to maintain a young and advanced fleet. Though this is justified, rewind to pre-downturn, these debt free older vessels were able to get work on a fairly regular basis, and were a cash flow generator for owners.

The abrupt way in which the offshore party ended in 2014/15 meant that due to their aforementioned earning power, owners have many now idle old OSVs on their books. No one knew the downturn would be so severe, but analysts and market commenters were quick to point to the high number of these older vessels as one of the principle problems with the overall market.

During the first years of the downturn (2015-2016), owners resisted the calls to scrap, no doubt thinking of how these vessels were solid earners in previous years. However, as the severity of the downturn increased and the likelihood of these older vessels returning to work began to diminish, owners have slowly come round to the importance of scrapping these vessels.



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All stats from 01/02/2018

"What also concerns analysts and market commentators is the fact that the banks are the ones who need to cooperate with the shipowner in order for this process to occur, and it could be the case that they are preventing other shipowners from following Tidewater and Gulfmark."

– Charlie Hockless, VesselsValue Offshore analyst

Scrapping Accelerates

So far in 2018, a total of 43 OSV vessels have been sold for scrap. In the first three months of 2017 only 17 vessels were sold. This increase shows owners are biting the bullet and realizing that if they are to survive these poor market conditions, they need to think of the future market rather than the market of the past. Despite the low scrap value of old OSVs, owners are putting faith in the restructuring process and emerging a leaner entity on the other side. A prime example of this being Tidewater, who are unsurprisingly top of the scrapping leaderboard selling 13 vessels for scrap in 2018.

According to VesselsValue Offshore Analyst Charlie Hockless, U.S. companies are leading the way for the OSV market when it comes to restructuring. He explains, "Unlike in other operational areas in the global OSV space, companies are facing up to the debt they have with financiers. Using large USA offshore owners Tidewater and Gulfmark as an example, they tackled the bad market head on and both filed for Chapter 11 bankruptcy protection. This saw initial cutbacks and challenging internal decisions being made. The result of this is positive however, as they are now lean businesses ready for the market to recover. What is worrying is that we have not seen many other offshore entities taking the same action, 'kicking the can' down the road so to speak."

Hockless adds, "What also concerns analysts and market commentators is the fact that the banks are the ones who need to cooperate with the shipowner in order for this process to occur, and it could be the case that they are preventing other shipowners from following Tidewater and Gulfmark." Notably, though, and in early March, Louisiana-based Harvey Gulf International Marine LLC, which has more than 50 vessels in its fleet and supplies offshore oil rigs among other services, also filed for Chapter 11 bankruptcy in Houston.

Better News Ahead?

Separately, Norway-based DOF, an operator of 67 purpose-built offshore support vessels, sees the offshore supply vessel market improving. According to a Reuters report in mid-April, DOF's chief executive said that the cost of chartering offshore supply ves-

sels (OSVs) will continue to rise as many ships that were mothballed up during the downturn will not return to the market. With the number of OSV's now being scrapped on the rise, he might just be right.

As oil prices plunged between 2014 and 2016, many offshore support firms were forced to merge with competitors as their oil company clients cut spending for exploration and drilling. Within the last twelve months, however, rates for hiring specialized vessels such as platform supply (PSV), diving support (DSV) and anchor-handling vessels (AHTS) have begun to recover.

The North Sea market has been leading the charge, with rates for some sectors climbing by as much as 30 percent from a year ago, but activity is showing signs of life in other regions, as well. "The rate levels for PSVs have increased quite a bit from low levels (last year) ... Now, at least, you can pay interest rates," DOF's Mons Aase told Reuters. Beyond this, his firm recently won a three-year contract from Petrobras for a diving support vessel (DSV) in South America.

Also according to Reuters, his optimism was based on the expectation that a majority of offshore supply vessels laid up in Europe will not return to the market. Aase added, "Many of those vessels parked in Europe came from Africa and Brazil, and they don't meet the (European) specifications... We clearly see that a significant portion, about two-thirds, will not be back,"

Meanwhile, the Norwegian Shipowners' Association puts the number of offshore supply vessels and drilling rigs in layup during 2017 at 183, or almost one-third of the Norwegian offshore fleet. But, that number had shrunk to 162 vessels by February of this year. And, there was more good news by the end of April.

Back on the U.S. side of the big pond, French oil major Total announced that it had acquired several assets in the Gulf of Mexico, as part of Cobalt International Energy's bankruptcy auction sale. The deal, which was reported to have cost Total $300 million, involved a 20 percent stake in the North Platte asset. Once consummated, Total will control a 60 percent overall stake in North Platte, with Statoil holding the balance. Total will reportedly buy as many as 13 offshore Gulf of Mexico exploration blocks.

Statoil isn't sitting on its hands, either. Already with interests in eight GoM producing fields and with two more in development, their production is eventually expected to reach 110,000 boe per day, making Statoil a top-five producer from the deepwater Gulf of Mexico. In a prepared statement, the Norway-based oil major said, "The portfolio will by 2020 achieve an average cash margin of at least USD 45 per barrel after tax at an oil price of USD 70."

With the price of oil on the rise or at least holding steady in the face of expanding U.S. production and inventories, offshore support providers everywhere are hoping that the return to better market conditions is just around the corner. If so and when it does come, the latest scrapping figures suggest that there will be fewer vessels on the water to compete for available business.

Workboat Sector Sees Biggest Bang for VW Settlement Bucks

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Tug and ferry engine upgrades represent the best bet for NOx Reductions as marine engine overhauls could come for some at 40% to 75% cost savings.

By Patricia Keefe

When it comes to financing engine upgrades and replacements using other people's money – this is as good as it will ever get. That's because 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" – its criminal dodging of required auto emission levels – 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.

There is no better use of the funds than to clean up marine diesel engines. That's because in terms of tonnage of NOx reduction for dollars spent, the cleaning up of marine diesel engines is the most cost-effective by virtue of the number of hours they operate, the amount of fuel consumed and the emissions profile of the engines currently in use.

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 on the engine upgrade option they choose, and whether the vessel is privately or publically owned.

In the latter case, projects are 100% funded. That's why, and how, Washington State is hoping to build, and pay for, three new all-electric ferries. Officials there estimate that a single such ferry could cut carbon dioxide emissions by 620 metric tons a year, the equivalent of taking about 132 cars off the road. It also cuts fuel consumption 100 percent.

In the former case, owners of commercial vessels running on pre-Tier 3 diesel engines can get back 40% of the cost of installing a new Tier 3 or Tier 4 diesel or alternate fuel engine, or by installing an EPA-certified remanufactured system or verified engine upgrade, in this case moving pre-tier or Tier 1 engines to T2. According to the EPA, Tier 4 rules cut NOx by 80 percent and particulate matter

(PM) by 91 percent.

Go all-electric and you can get 75% of the cost covered, plus additional monies to install charging stations and related equipment. Apply under the Diesel Emissions Reduction Act (DERA) option, which is allowed under the trust rules, and states can use trust funds to match the DERA grant, and in doing so, reap an additional DERA bonus equal to 50% of the base sum. It's manna from heaven, basically, to do work that needs to be done.

It just can't be mandated or already scheduled work. "There is a requirement to show funds will be used in a situation to reduce emissions where it might otherwise not happen," says George Lin, Technical Manager, Global Regulatory Affairs, Global Marine, Caterpillar, Inc.

But it could be used think bigger, and greener, notes Buckley McAllister, president of McAllister Towing and Transportation Co., Inc. and a veteran of several incentive grant projects. "A major overhaul can exceed a half million dollars, and if you factor that into the concept of installing a new engine, and that gets you a subsidy and a main engine that will require less maintenance than a 30-year-old engine, it's a great thing."

The Volkswagen MTF is narrowly focused on cutting PM and nitrogen oxide (NOx) emissions, which contribute to smog, and in the case of the maritime sector, only available to specific classes of vessels – which must operate solely in U.S. waters – tugs, tow boats and ferries.

EVERYONE'S A WINNER

The amount each state receives varies as a function of the number of illegal VW vehicles registered inside its borders and puts each in a position to map out a 10-year emissions reduction plan and to dedicate monies toward specific goals. For coastal and brown-water states looking for the fastest, cheapest and biggest reduction bang for the buck – the marine sector can't be beat.

"If you take one of these pre-EPA Tier engines and upgrade to one of the newer engines, the emission reduction

The Top 10 Recipients of VW Mitigation Trust Funds	
$423 Million – California	$103.9 Million – Washington
$191.9 Million – Texas	$97.7 Million – Illinois
$152.3 Million – Florida	$87.6 Million – Virginia
$117.4 Million – New York	$87.2 Million – North Carolina
$110.7 Million – Pennsylvania	$71.4 Million – Ohio

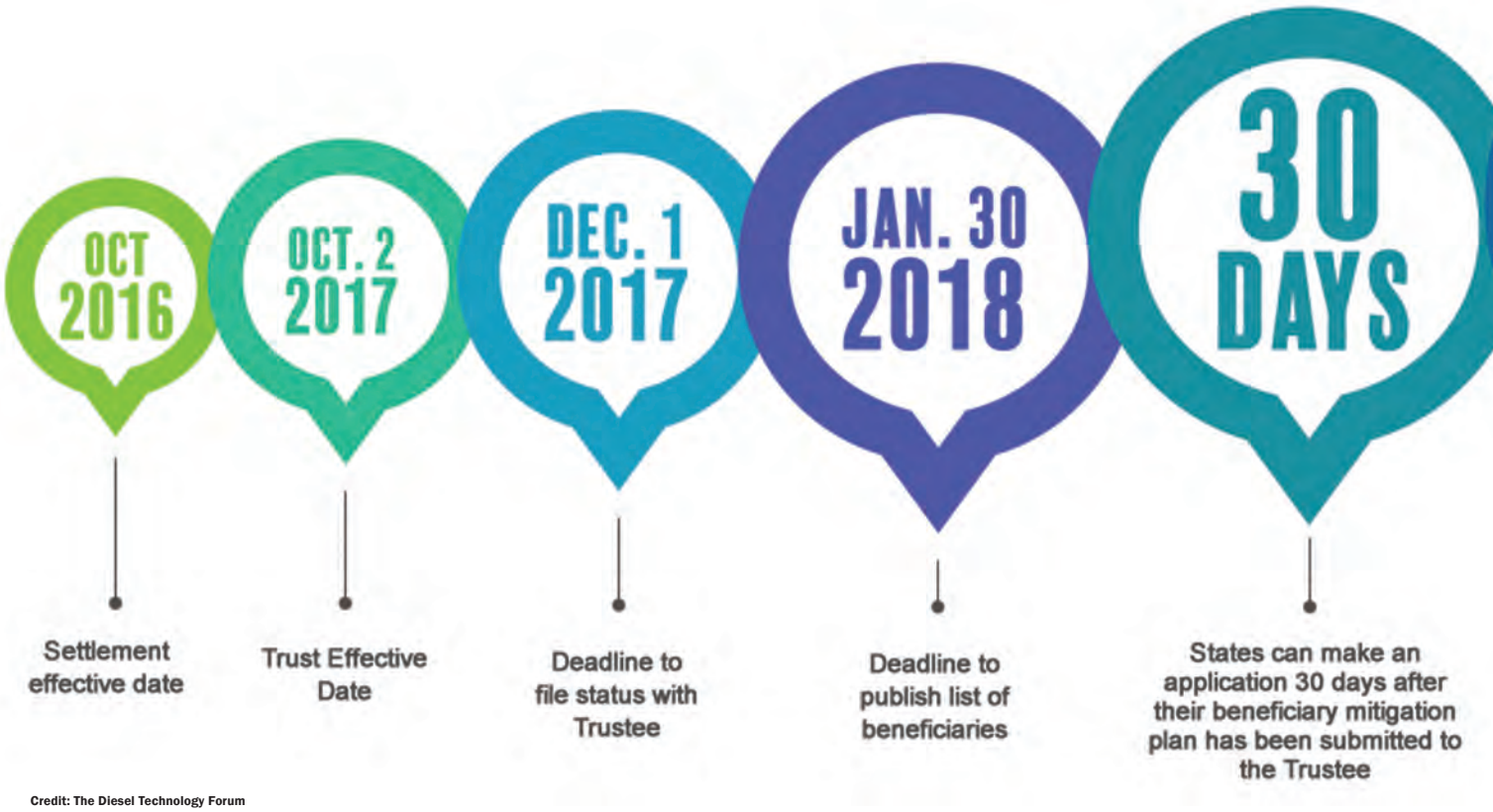
"The sooner people apply the better, once these funds are gone – they are gone."

– David L. Holt,
Energy & Transportation Industry consultant for Caterpillar Global Aftermarket Solutions

is dramatic," says McAllister, who has installed some of the first Tier 4 engines (Caterpillar 3516) found on tugboats.

According to the Diesel Technology Forum (DTF), of the roughly 47 marine workboats in New York Harbor, 28 are powered by pre-emission standard engines. Swapping out an older "uncontrolled" engine for a Tier 4 engine in just one tugboat removes an estimated 96,000 lbs of NOx per year, equivalent to replacing 76 older trucks or removing 74,000 cars for one year, according to a new report on "emission reductions and cost-effectiveness for marine and locomotive projects," from the DTF, a diesel industry organization, and the Environmental Defense Fund.

By comparison, marine transportation consultant Paul J. Moynihan, vice president, technical services, M.J. Bradley & Ass. LLC, estimates that a rough approximation of the total tons reduced and equivalent trucks replaced and cars removed from the road by going to Tier 3 instead of Tier 4, might be somewhere in the neighborhood of 76,000 pounds NOx reduced annually, 60 old trucks replaced and 58,500 cars removed for one year.



Credit: The Diesel Technology Forum

STILL UP IN THE AIR

The VW settlement represents an unparalleled opportunity to upgrade or replace engines at a significant cost reduction versus no regulatory incentive to do so. In its absence, by 2020, the EPA has estimated that only three percent of tugboats, and five percent of ferries, will be running on Tier 4 available engines. The hope is that trust fund will motivate vessel owners to more quickly lower the industry's emissions output. "These grants really help people get technological advances for their fleet in an affordable manner," says McAllister.

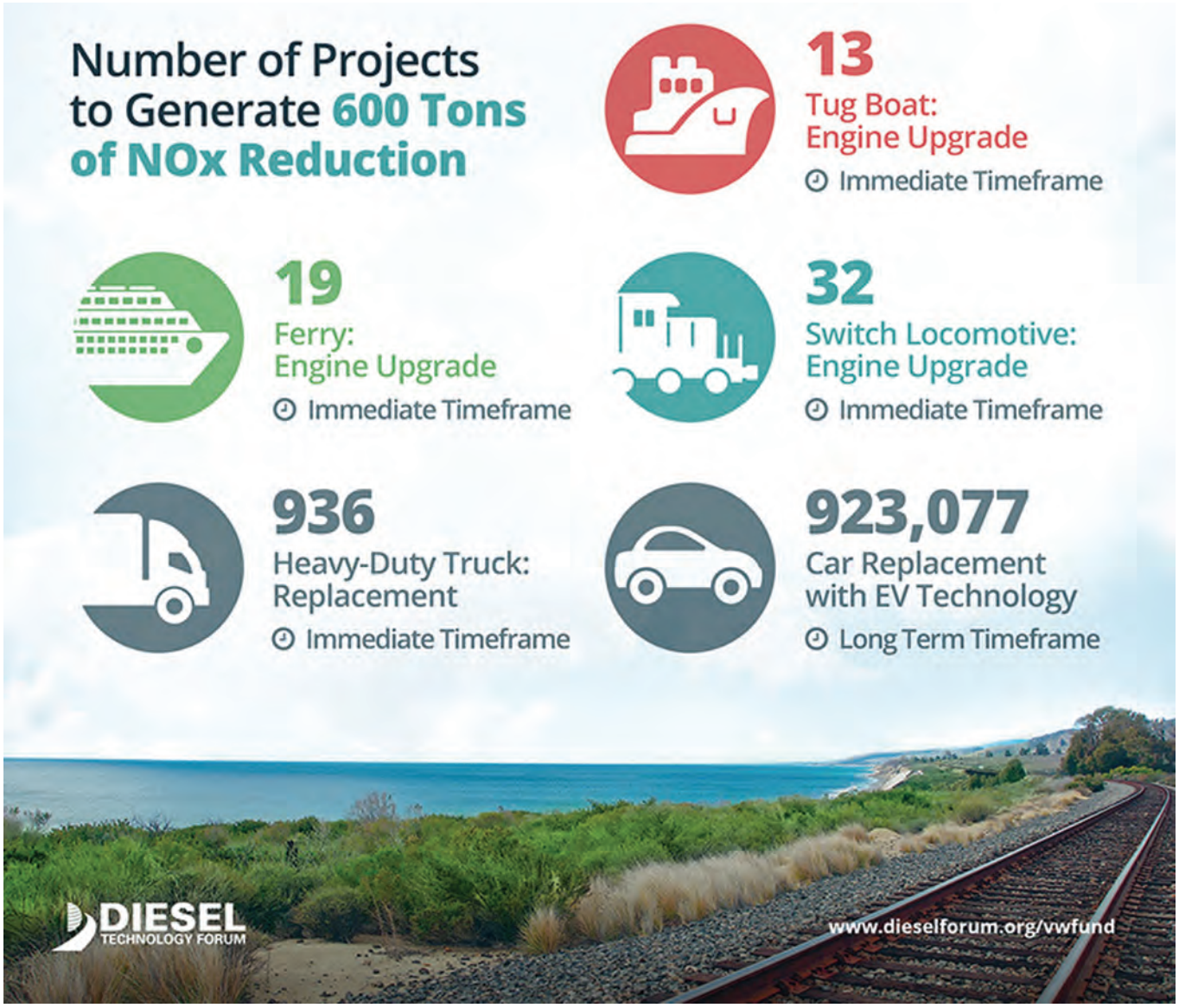
As the states work their way through their own approval process, collecting public input and writing mitigation plans for allocating their share of the trust, potential applicants are waiting to see which states are committing funds to marine initiatives, what the application process involves, and how the money will be dispersed.

California's Air Resource Board says it expects to split much of that state's $423 million on electrification projects and existing emissions reduction programs targeting areas near warehouses, industries and seaports. Pennsylvania is reserving 55% of its $110.7

million share for rail and tug engine replacement projects. Maine is committing 40% of its $21 million to improvements in ports and rail yards. And notes David L. Holt, Energy & Transportation Industry consultant for Caterpillar Global Aftermarket Solutions, Missouri has a lot of barge traffic while all the waterways meet in Paducah, KY.

Also unclear are answers to questions that would impact the ability of some workboats to garner some of these settlement dollars:

- *What about vessels that traverse a regular route that takes them through several states? "For inland waterway folks, go up and down the Mississippi and hit eight states – which state gets to pay for it?," asks Paul Moynihan, vice president at M.J. Bradley & Associates, LLC Moynihan.*
- *Would states be willing to collaborate, to split the cost of funding a qualifying application involving a vessel that runs between both states? By splitting the bill, each state could win some emissions credit at half the cost of a NOx reduction project.*
- *Will a company based in one state with a vessel that spends most of its time working the waters of another be able to submit proposals in both states? Some stakeholders think that States will likely focus primarily on where each vessel operates.*



BRACE FOR IMPACT

There are business impacts to consider. For one, it won't necessarily lower fuel consumption, and it might raise it, which increases carbon output. Switching to biofuels reportedly can reduce engine performance. "The efficiency of engines will decrease the more emissions reduction is applied," according to McAllister, adding that while the older engines tend not to be super fuel-efficient or have the greatest emissions, they "have a lot of raw power."

Some vessels have limited engine room space, and selective catalytic reduction (SCR) requires more room for additional equipment. The new engine block might not be the same size as the old, exhaust systems might need to be increased, and the gear box may have to be changed.

A new engine can change the weight of the vessel. "It's not like a car engine," says CAT's Holt. "A lot of engineering goes into a vessel, and it may not be possible to replace the existing engine with a current tier engine." Manufacturers like Cat and Cummins sell alternatives to a new engine for these instances – kits or systems that upgrade to T2 or T3 that can be done inside the engine room.

Beyond this, the state paying for reduced emissions will want to make sure it gets those benefits. Some incentive programs come with geographic restrictions, cautions McAllister. That won't work for every vessel; pointing out such requirements would have prevented his vessels going to Puerto Rico for FEMA to assist after the September 2017 hurricane.

WHY DO IT, WHEN YOU DON'T HAVE TO?

The pros far outweigh the cons. It's better for the environment and for your business itself. Cleaner engines that generate less noise are a plus for crew and passengers. The EPA estimates that every dollar in any diesel cleanup generates up to $13 in public health benefits.

Besides the desire or pressure to run a green operation, an upgrade alone can add 23 years to the life of an engine, says CAT's Holt, who explained that CAT's certified upgrade kits that can take a "dirty, noisy, smoking" 1996 pre-T1 mechanically-based engine, keep the same engine block, change out the major components and make it conform to a much cleaner 2006 T2 engine standard, and operate at that standard for the next 23 years.

Mitigation projects can earn environmental credits that owners can use or sell. Beyond this, California is so far the only state to enact its own emissions regulations. They are unlikely to be the last. Other states are building Tier requirements into bids. Andy Kelly, marketing communica-

"A major overhaul can exceed a half million dollars, and if you factor that into the concept of installing a new engine, and that gets you a subsidy and a main engine that will require less maintenance than a 30-year-old engine, it's a great thing."

– Buckley McAllister, President of McAllister Towing and Transportation Co., Inc.

tions manager, Global Marine, Cummins, Inc., says a requirement in a New York state RFP that engines had to be Tier 3 or T4 led Norfolk Tug Co. to repower four to five vessels.

FISH OR CUT BAIT

Manufacturers have already pushed diesel engine emissions down to near zero with Tier 4 technology. As the movement toward all-electric and zero-emission vehicles grows, and that technology and capacity starts to catch up with demand, it's going to become harder for workboat operators to ignore the fact they are rapidly sailing alone in the haze. The expectation among stakeholders is that if business and health gains from going 'green' don't force a change, eventually, regulators will. And by that point, the cost of doing so will have grown exponentially while the settlement funds will have been spent.

Operators have 10 years to apply for the money, but the funds are expected to run out in the first three years in most states. The first projects will probably kick off in early summer. None of this is lost on engine makers like Cummins and Global Marine Caterpillar. Cummins for example, put together a strategy team to lobby states for inclusion of a maritime category, while CAT is developing a program to prepare dealers to assist customers with trust fund applications. CAT is targeting the more than 1,000 3500 series engines it sold between 1993 and 2004, which it believes would qualify for trust fund monies using CAT Emissions Upgrade Kits.

Upgrade kits are being positioned as a more affordable alternative to installing new engines. "Not only are customers getting an emission upgrade, they are also getting new-like engine condition and up-to-date technology, adding decades of reliable operation," says Holt. Total cost of ownership is cut by the reduction in needed major overhauls over the life of the engine, he adds.

The ROI on cleaner engines should speak for itself. In case it doesn't, Cummins has created an emissions calculator to demonstrate how much an engine upgrade can reduce NOx emissions. Now is the time to figure out and check your emission reduction strategy, plot your states, and get in line for lots of green to ensure clean sailing ahead. David Holt perhaps says it best when he advises, "The sooner people apply the better, once these funds are gone – they are gone."

***Patricia Keefe** is a veteran journalist, editor and commentator who writes about technology, business and maritime topics.*

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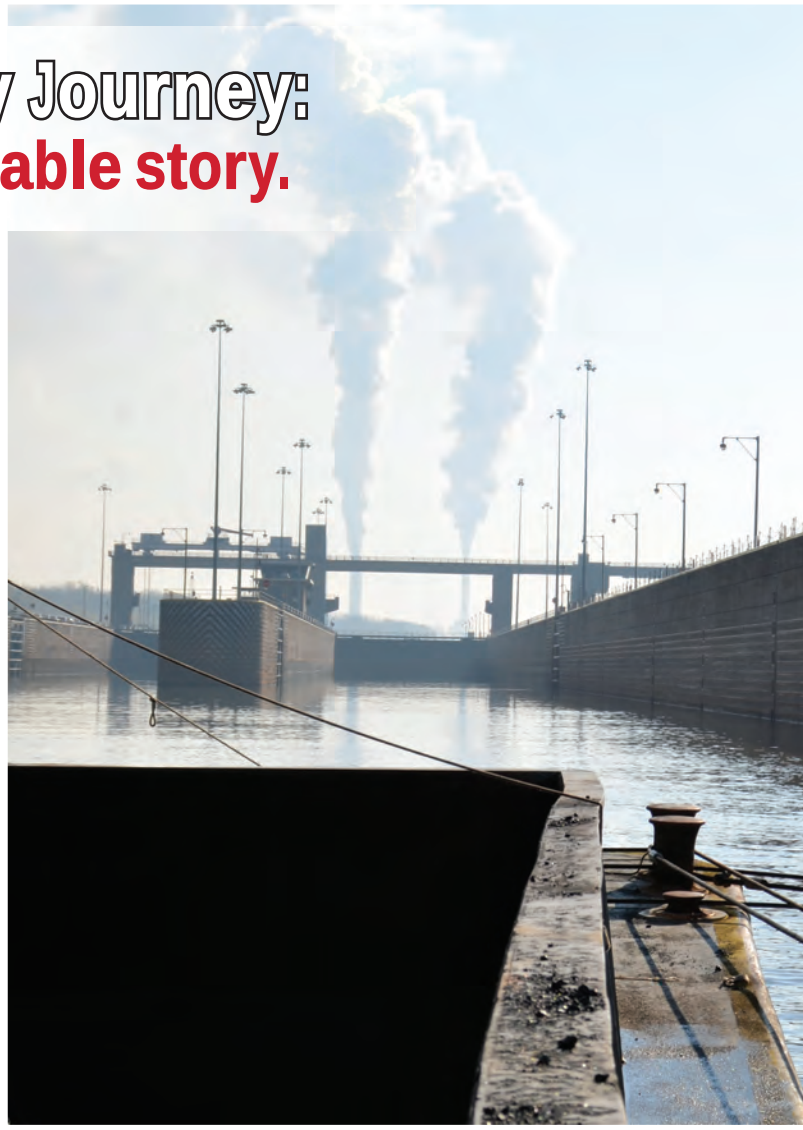
The Maritime Safety Journey: An unlikely and remarkable story.

By Craig Philip and Paul Johnson



Late last year, the Transportation Research Board released a major study that was undertaken "in response to the rapid development of domestic sources of energy and questions about the safest ways to move these products." The Study Committee examined the operational responses of the three primary modes impacted by the fracking revolution – rail, pipeline and maritime. A primary observation of this work was that that the *"Marine Transportation System Offers a Model for Robust Safety Assurance….the challenge for the rail industry and regulators is to develop a safety assurance system that has a high degree of robustness like that of the maritime sector."*

The study was undertaken in 2016 in part as a result of the multiple, high consequence derailments of ethanol and crude oil in North America, as "crude-by-rail" volumes grew along with domestic crude production. The study also concluded that although the increase in barge movements of crude oil has not attracted as much public attention, the total volumes of oil transported by barge have exceeded those of rail. A possible reason for the lack of public attention is the exemplary safety record of this mode, which has had no reports of significant ethanol releases from tank barges during the past 10 years and only rare reports of unintended releases of crude oil. The comparative statistics tell the story.

This remarkable record and the story of the maritime industry's successful safety journey is, both in absolute terms and especially when compared with the other modes, underappreciated even by those who've lived it for much of our careers. The research team at Vanderbilt is focused on infrastructure sustainability and resilience, which includes a focus on how transport systems respond to external shocks like extreme weather or abrupt and unanticipated changes in demand. Our work across modes and systems shows that it is factors related to Institutional Resilience that explains the remarkable safety record of the domestic maritime industry and it is through this lens that the big picture is better understood.

Catastrophes: Robust Safety Governance Models Emerge

Four extreme events more than 25 years ago, occurring in rapid succession over just five years, exposed system operational and safety vulnerabilities. I don't think anyone could have foreseen that a key result would be a unique and effective safety governance model which was so prominently demonstrated during the wholly unforeseen growth of domestic crude oil production. These events can be described, as follows:

• 1988 Drought: Creation of RIETF

The 1988 Midwest Drought brought record low water levels to the Mississippi and Ohio Rivers. Operations were disrupted first on the lower reaches of the Ohio River above the confluence with the Mississippi River at Cairo, Illinois.


Credit: Gregory Thorp

The disruption continued through July and extended on the Mississippi River north to St. Louis and to New Orleans. For various periods, traffic on this densest section of the inland waterways became impassible, and numerous barges were stranded above and below the closed or restricted sections.

During this event, response was led and coordinated by various Coast Guard Captains of the Port (COTP), first at Paducah, Kentucky, where operational safety zones, tow size and HP restrictions, and one-way traffic zones were established to prevent groundings. By mid-June, various sections of the river were closed to navigation and attempted coordination with the Corps' dredging resources intensified. This pattern of locally directed actions continued through the summer and extended to additional COTP zones on the Mississippi River

As the summer wore on, this locally directed approach to response simply became overwhelmed by the system wide impacts. Leaders of the towing industry felt that the government could respond more effectively if it had the assistance of a senior level industry group during the planning of waterway management activities lead-

ing to the formation of the River Industry Executive Task Force (RIETF). RIETF's membership included senior representatives from the major barge lines, senior USACE personnel and the Commander, Second Coast Guard District.

The RIETF group became proactive during the balance of the low water event in 1988, along with the Lower Mississippi River Committee (LOMRC) focused especially on the river between Memphis and New Orleans. On balance, the stakeholders felt that all were caught off guard by the severity of the draught and that the formation of these two groups was one of the greatest benefits resulting from the low water event.

• 1989 Exxon Valdez Grounding: Oil Pollution Act of 1990

Less than a year after record floods in the heartland, the maritime world was shaken by the grounding of the Exxon Valdez on Bligh Reef in Alaska. The resulting oil spill and many challenges associated with the response quickly led to the passage of the Oil Pollution Act of 1990. It is hard to overstate the impact of this legislation on both the Coast Guard and the maritime industry. The act gave the Coast Guard its single largest legislative tasking in history.

OPA90 was centrally focused on liability and equipment – for example the phase-out of single skin tankers and barges. It also led to new mandated safety programs focused on inspection of systems and machinery and could have turned the regulator/regulated relationships wholly adversarial. However, the incident also drew renewed attention to the importance of the human factors and out of this came the "Prevention Through People (PTP)" program, guided by USCG VADM James Card. The concept came to life through the formation of a Quality Action Team with AWO that emphasized their shared goals – to improve marine safety and stewardship – using a cooperative non-regulatory approach driven by data and focused on results. In 1995, the Coast Guard and AWO signed a memorandum of Understanding to formalize the Safety Partnership, the first undertaken by the Coast Guard with an industry group. It has been a model for other partnerships and continues to be a vibrant and vigorous collaboration to this day.

• 1993 Amtrak Sunset Limited: the journey towards Towing Vessel Inspection

Just as OPA 90 triggered a response from the Coast Guard, another incident just a few years later galvanized the U.S. Domestic tugboat and barge operators to focus new attention on safety and governmental collaboration. The tragic collision in the fog by a tugboat near Mobile with the span of a railroad bridge led to the derailment of Amtrak's Sunset Limited and dozens of fatalities.

The industry had long labored under the label of "uninspected"; an odd and many would say wholly unintentional

consequence of legislative actions as diesel-powered vessels replaced steam. While the industry was "regulated" on many levels, it sought to protect and retain this "uninspected" status as it perceived a tangible economic benefit. Following this accident, the call for legislative action was fierce, and while a move to cover the industry by the inspection regime already applied to many other vessels was avoided, new regulations were directed by Congress, and further oversight of industry safety practices became inevitable.

The result was an industry consensus to establish an industry defined safety regime known as the Responsible Carrier Program (RCP). The program was launched in 1994 by AWO for its members and was an audited safety management system that ultimately became a membership requirement. Ultimately the industry concluded that it would be well served to advocate for new legislation to establish a Coast Guard Administered program of inspection, and legislation to accomplish this was passed by Congress in 2004.

While the journey toward implementation of vessel inspection – now called SubChapter M – as been far longer than any would have imagined, it has firmly embraced the framework of Safety Management Systems (SMS) as the foundation for the safety assurance focus required by Coast Guard inspections.

• 1993 Floods: The Emergence and Adoption of Waterway Action Plans

The Great Flood of 1993 was one of the most disastrous natural events in recorded history to impact the Midwest, claiming over 50 lives, totaling $14 billion in damages, and costing the maritime industry alone over $200 million.

Just as the draught in 1988 created a widespread and systemic crisis, the Mississippi River Basin flooding in the spring and summer of 1993 pushed the commercial navigation stakeholders beyond the effectiveness of the historic tools which were better served to deal with episodic and localized events. It began in the spring, which typically is characterized by high water along the Mississippi and its tributaries, but continued all the way through August.

During the draught of 1988 when the major constraint involved limited channel depth and the allowable draft of barges required to resume operations, a major issue related to the widespread flood conditions was a concern for the condition and deterioration of earthen levees, where the high water either overtopped or came close to doing so. The decisions concerning the resumption of commercial operations when safe from a navigational perspective thus also included other stakeholders such as local levee boards and municipalities that could be affected by levee breaches.

The new stakeholder groups such as RIETF clearly played an important part in helping the stakeholders respond as the geographical extent and duration of the high water event exceeded anything seen in the modern era. Nonetheless, the response was reactive and focused on individual local areas (Coast Guard Captain of the Port Zones, Corps Districts) without a template or playbook to guide stakeholders.

In the aftermath of these events in the 1990's, the Corps, Coast Guard, and industry created contingency plans specific to local operational territories and included two umbrella plans: The Mississippi River Crisis Action Plan and the Ohio River Valley Waterways Management Plan. The plans were tested during the high water crisis in 2005, and further refinements followed including the codification of a system-wide Waterway Action Plan (WAP) in 2007 built around local but coordinated contingency plans.

The Future: Developing a Robust and Resilient Governance Model

While the emergence of Sub M has been the most visible and controversial feature of the unfolding safety system today, it is the non-regulatory elements reflected in the activities of groups like RIETF that support a robust ongoing system safety management process reflected in the use of the Waterway Action Plans to guide industry and governmental activities:

1. The WAP is a Comprehensive Contingency Planning document. It includes all private stakeholders and is established within existing federal regulatory and legal authorities that bound the actions of both the Coast Guard and the Corps.

2. The WAP enumerates Progressive Responses to weather induced conditions. A formalized risk assessment tool was employed to define progressive responses, and reinforces the need for the application to be one of active management and not passive prescription.

3. The WAP is Frequently Tested and Exercised. Use of the response protocols and activation of the plan are triggered when conditions arise which are often well short of an operational crisis, the plan protocols are thus tested frequently without the need for drills and exercises. Because Coast Guard and Corps Officers face frequent duty rotations, this is an especially important feature that serves to maintain institutional

U.S. CRUDE OIL COMPARATIVE TRAFFIC AND SPILL HISTORY

SHIPMENTS (Million Barrels)							
MODES	2010	2011	2012	2013	2014	2015	TOTAL
RAIL	19	50	158	282	341	284	**852**
WATERWAY	408	402	533	693	752	747	**3,535**
SPILLS (Gallons)							
RAIL	5,000	4,000	4,000	945,000	57,600	598,000	**1.6 mil**
WATERWAY	1,000	100	<100	7,600	<100	420	**<10K**

memory and confidence.

4. The plans facilitate Early and Open Communication. *A common language and terminology are established and incorporated into the local operational plans.*

5. The WAP is a Living Document. *An ongoing regional quality steering committee is empowered to undertake periodic reviews and modifications to the document and response "hot-washes" after major extreme weather events to evaluate responses and update the established triggers.*

Despite the external forces – especially the chronic and widespread impact of frequent extreme weather events and perpetually underfunded USACE budgets – the system has performed well in its primary mission to safely handle hundreds of million tons of cargo to support the nation's economy.

Dr. Craig Philip *is Research Professor of Civil and Environmental Engineering at Vanderbilt University and Director of Vanderbilt's Transportation Center (VECTOR). He spent 35 years in the rail, intermodal and maritime industries, notably serving as President/CEO of Ingram Barge Company, the largest US marine transport carrier. He earned his doctorate in Civil Engineering from MIT and his bachelor's degree from Princeton.*

Paul Johnson *is a PhD candidate in the Environmental Engineering program at Vanderbilt University. He has a B.S. in Industrial Engineering from Georgia Tech and an M.S. in Engineering Management from Duke University. Prior to joining Vanderbilt, he was a Business Manager at Capital One Financial.*

Inland Dry Docks:
Location, Location and Location

A recent dry dock rehab project in Chicago provides new options and money saving opportunities for inland and Great Lakes stakeholders alike.

By Tom Ewing

From software to steel plating, Indiana-based TPG Marine Enterprises provides a range of services in the Great Lakes and inland waterways markets. River based tug and barge services are based in Jeffersonville and Mt. Vernon, IN, on the Ohio River, as well as on Kentucky's Green River. The company also owns TPG Chicago Dry Dock, located on the Calumet River. Interestingly, the firm's headquarters are located right in the middle: in landlocked Indianapolis. That's because TPG has myriad interests in maritime software development, logistics and business development services for private businesses in the Midwest. Maybe that's why TPG stands for "Transmodal Performance Group," covering a broad brushstroke across the domestic waterfront.

TPG recently completed a project at its Calumet location that's interesting on its own merit. In this case, the company literally cut an old dry dock in half, length-wise, and rebuilt it eight feet wider than it started in order to handle 30,000-barrel tanker-barges. For barge stakeholders operating within a 250-mile radius in either direction, the new infrastructure opens up a world of potentially time and money saving opportunities.

The rebuild project is of great interest to jumbo tank barge owners who operate in Midwest and Chicago markets. That's because the new Calumet facility is the only one on the Illinois River system that can dry dock and service 300 x 54-foot, 30,000-barrel barges. Previously, those vessels had to get pushed or pulled for repairs and maintenance, to the south, almost to St. Louis, or 250 miles north, to Sturgeon Bay, WI. That's not an easy move to either place – time consuming and expensive – particularly for a unit likely needing to be out of the water in the first place.

Edward L. Robinson, IV, is TPG's Chief Marketing Officer, based in Indianapolis. The rehab project came about

*All images courtesy TPG

"Hogan estimates the project required 150,000 lbs of new steel. When the project started the price of steel was relatively low. TPG decided to purchase all of the steel plate required at the start of the project, which turned out to be a smart move: Hogan said the price of steel rose during the entire 14 months of construction."

when a company that TPG has worked with over the years decided that its future business plans would shift away from dry dock services. (Robinson did not want to identify the company.) The dry dock that company owned at the time then sat unused. TPG stayed interested, and watchful. Robinson said when the owners finally decided to sell, TPG was ready to buy. "We didn't just say yes," Robinson recalled, "we said 'heck yes!'"

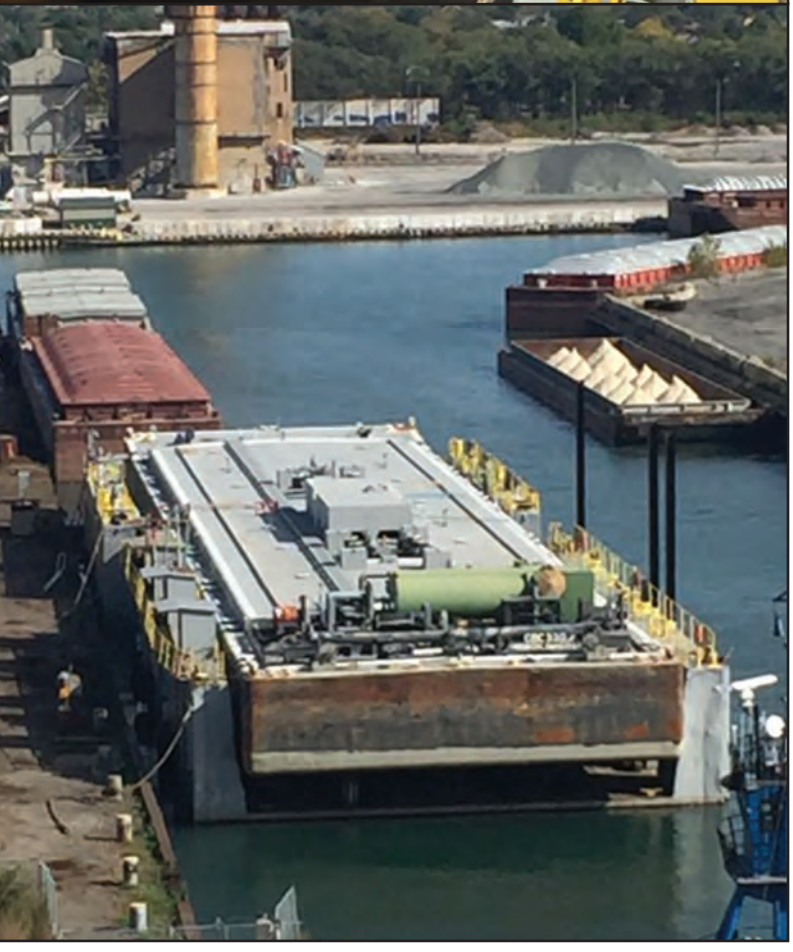
The sale took place in December 2015. The dry dock was in pretty bad shape, although its equipment appeared sound. One big advantage: it was close, relatively easy to bring home. Robinson said the company was scouting other purchases but distance quickly becomes an issue; finding a dry dock in New Orleans, for example, even at the right price, presents significant logistics and transportation challenges when a company is located in Chicago.

Chicago Roots, Local Service

Chicago Dry Dock (CDD) has long had a presence in Chicago, at the Calumet River site. CDD covers about seven acres, has 1200 feet of sheeted wall, and is located about three river miles from Lake Michigan (15 miles or so south of the Loop). The company started operations in 1979, providing barge cleaning and repair services. Dry dock service was added in 1995. TPG bought CDD in 2014, changing the name to TPG Chicago Dry Dock.

Mike Hogan, TPG's General Manager at the Calumet River facility

When purchased, CDD had two floating dry docks which could accommodate repairs to vessels 262 feet long, 54 feet wide and up to 1500 tons. Work included tugs and tow boats, commercial tour and passenger vessels, pleasure boats and barges of all types, but of standard sizes. Unfortunately, CDD couldn't service the 300-footers – frustrating because CDD staff, long familiar with regional and equipment markets, knew the demand was out there.



Mike Hogan is TPG's General Manager at the Calumet River facility. "We knew the demand for service was there," Hogan said. "People called me all the time asking me to dry dock the 300 footers. But I couldn't do it."

After the dry dock was purchased in December 2015, rehab work was put on hold, finally starting in June 2016. The first task was to install a new bottom, one half at a time. The work took place within one of CDD's other dry docks. Most of the work was done by CDD's crews, as time permitted. Essentially, for CDD's team, this is what they do – hands on work on big stuff; with this project, it was their own. The company employs a full-time staff of ABS (American Bureau of Shipping) certified welder-fabricators and technicians. That's a skill set important to customers who likely want to know that their dry-docked vessel is within a structure that's done right, one that has been properly assembled, or, in this case, cut up, taken apart, reengineered and then reassembled.

As work progressed and the new bottom was being finished Hogan said the question came up: "Why don't we widen it?" Again, not easy, but a tempting idea hard to dismiss: a reconfiguration would jumbo-size the facility, making it big enough to handle the 300-footers. "By widening," Hogan said, "we would have a capability that no one else has up here."

Gearing Up

After their initial bottom work, Hogan said his team used rigging wire to keep the disassembled parts in a holding pattern. "Then," he said, "We had to come up with a plan about how we were going to put it back together." Their proposal: build a tank down the center, thereby widening the structure by eight feet. To do that meant they needed to cut the structure in half, length-wise.

For this, they needed outside help. Next steps included hiring a diver who cut the submerged side of the dry dock, along the underwater seam. Once that was finished, TPG crews got back at it, working from the top deck to cut the rest of the way through, keeping the two halves of the structure within a second CDD dry dock. Then, they had to fill the gap, had to stitch the two halves back together into something that actually worked.

CDD hired marine engineering firm Manley Brothers to develop a structural frame that would become the new middle. Then, working from those engineering drawings, TPG crews continued their rebuilding. It took about 14 months to stitch it back up, from the June 2016 start date, concluding in late summer, 2017. The project stayed on budget and on schedule. Hogan would not disclose total

project cost but it was self-financed and did not include any MARAD or similar kinds of public loans or grants. Nor did it require any federal, state or local air, water or hazardous materials permits. There were no issues with storage tank removals or relocation. Old steel was recycled.

Hogan estimates the project required 150,000 lbs of new steel. When the project started the price of steel was relatively low. TPG decided to purchase all of the steel plate required at the start of the project, which turned out to be a smart move: Hogan said the price of steel rose during the entire 14 months of construction.

Open for Business

The newly configured dry dock opened for business in September 2017. He's confident the new asset will pay off for CDD.

Where navigable waters are concerned, the company is in an enviable spot, both for barges and equipment from the inland water ways and Great Lakes commerce. That expanse includes areas stretching from Lake Michigan, the Calumet River and ship channel run south and west, joining the Des Plaines River, which joins the Kankakee River, which flows to the Illinois River, joining the Mississippi River near Grafton, IL, just north of St. Louis, MO.

Jumbo barges at the Chicago-end of the inland waterways system can now arrange service with CDD. Before that, those vessels, along with a tug and crew, would have to leave, again, likely heading south for service near St. Louis. For traffic from the Great Lakes side of CDD's facility; nearby service can have inherent advantages. Sturgeon Bay is pleasant enough but it's a long trip from Chicago.

Ed Robinson said CDD is "staying pretty busy with the new service. People are selecting to bring them (jumbo-barges) in." He said if the company does a "dozen a year that's a big plus for the industry, and for us."

Robinson added that the third dry dock, even if it's not in use for a jumbo-barge project, has served to augment and expand new service opportunities for CDD. The company is newly starting to use the dry docks in tandem, each one augmenting the role and placement of the other. Robinson said these tandem projects have opened up new flexibilities for CDD's work. In other words: an investment with a payoff greater than the sum of its individual parts. That's a good business outcome by any definition.

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

COMMITTED TO CRITICAL CREW COMMS

The last thing that military workboat operators want to worry about is reliable communications. With David Clark Company, they won't have to.

Edited by Joseph Keefe

Knifing through the waters of the Chesapeake Bay, not far from the Zodiac Milpro factory in Maryland, the company's new ZH-1300 MACH II OB Interceptor demo boat shows the nimble maneuverability normally associated with smaller craft. Among the crew members on board is Jeanne Metayer, Technical Project Manager for Zodiac Hurricane Technologies. Metayer recently transferred from the Zodiac office in Singapore to Vancouver, BC, in order to work on the development of the new ZH-1300 Interceptor.

"The 13-meter ZH-1300 is the newest and largest boat of our Zodiac Hurricane range. It addresses the needs of end users in the military patrol boat market for bigger platforms, speed, handling and stability," said Metayer. All of those intended missions are greatly enhanced by employing reliable, robust and versatile communications equipment. And, that's where David Clark comes in.

To stay out in front of the ever-increasing demands of the patrol boat market segment, Zodiac Milpro has partnered with several leading companies in equipping the ZH-1300 OB. These companies include Simrad for the navigation suite, Seakeeper for gyro stabilization to eliminate boat roll, SHOCKWAVE shock-mitigating seating, Current Corp for the latest in day/night vision camera systems technology and, of course, the David Clark Company for its digital communication system.

Crew-to-Crew Communication

"Special forces, commandos, coast guard, law enforce-

Alex Burton of Zodiac Milpro pilots the ZH-1300 OB demo boat on the Chesapeake wearing a David Clark digital communication headset.

ment – what's common to all of them are that communication is critical to their missions. Communication is not something they should have to worry about, so having a reliable system such as the David Clark digital intercom system is very important to them," said Metayer. The decision to partner with David Clark Company was an easy one, as the two companies began doing business together shortly after David Clark helped pioneer the marine intercom communication system category over 15 years ago.

As the workboat market has evolved, both Zodiac Hurricane Technologies and David Clark Company have managed to stay ahead of the curve. "Zodiac was among the first to adopt our Series 9500 wired headset communication system many years ago. We have learned a great deal from them about the RHIB/HSC market. Much of that knowledge and insight went into the development of the Series 9900 wireless and the Series 9100 digital intercom systems," said Bob Daigle, Marine Systems Product Manager from David Clark Company.

Jeanne Metayer, Technical Project Manager, Zodiac Hurricane 13-meter product line.

In this case, the ZH-1300 OB Interceptor is designed for mission-critical operations including marine counter-terrorism (interception, boarding, and Special Forces insertion), border security, law enforcement and fire support. Based on proven 9- and 11-meter MACH II hull models, the larger size allows for higher payloads and more deck space to meet the needs of military and professional users, while also providing better seakeeping and higher speed capability in rough water conditions.

The vessel is propelled by four 350 HP Mercury engines. "The ZH-1300 OB has a maximum speed of 55+ knots in full load conditions. And with a 1,893 liter (approx. 500 gallon) fuel capacity, she can traverse 350 nautical miles at 35 knots," said Metayer. With those kinds of capabilities and speeds, the last thing crewmembers want to fiddle with is a balky comms system. With David Clark, they won't have to.

Mission-Ready Design & Technology

The ZH-1300 OB features the patented MACH II (Military Air Channeled Hull II), a hallmark of Zodiac design. Doug Hemphill, Technical Director at Zodiac Hurricane Technologies, explains, "The MACH II hull is more efficient than a standard Deep V hull and more dynamically stable compared to stepped hulls. This combination allows for higher speed, better fuel economy and excellent maneuverability." As with all Zodiac Milpro craft, the ZH-1300 also incorporates a patented Durarib collar design combining foam and air technology to provide robust strength and impact resistance.

The critical importance of clear communication in the patrol boat sector cannot be underestimated. The communication challenges at 55+ knots in high winds and rough water conditions are daunting. "The digital communication system is a game changer," said Metayer. "It is very valuable on high speed boats like ours. The system discerns between noise and speech to enhance clarity. This makes communication very effective as opposed to standard 'hot-mic' intercom and makes for a very quiet ride, even at speeds in excess of 50 knots."

Ease of communication is further enhanced with an integrated momentary push-to-talk (PTT) switch, intuitively located on the headset microphone bracket. The conveniently located PTT provides simultaneous mic/flex boom adjustment and transmission – saving critical seconds in stressful situations. Voice transmissions are also improved by the advanced, M2-H electret microphone for optimal noise cancellation and speech clarity.

Wired and Wireless Communication Flexibility

One of the primary benefits of the David Clark Digital Intercom System is the flexibility to integrate both wired and wireless communication capability. Wireless flexibility is critical for RHIB/HSC patrol boat crews as it allows crew members to move around the vessel untethered to the headset stations, and to disembark if necessary to board another vessel while maintaining constant communication with crew members.

The ZH-1300 OB is fitted with a dual console which features a pilot and navigator in the forward positions, and communication and team commander positions at the aft console, all with drop-down, shock-mitigation seating. Additionally, the craft features seven shock-mitigating jockey seats – one in the far forward position and three duo seats in the rear aft. All headset stations are compatible with wired and/or wireless capability, providing maximum versatility for mission-specific configuration requirements.

Digital System Installation and Configuration

Boat builders require ease of installation and setup, especially those serving the military and government sectors such as Zodiac Milpro. Because the system operates on Power-over Ethernet (PoE), all cabling, with the exception of the radio interfacing, is Cat5E. This common communications cabling contributes to ease of installation. "A real concern among military and first responder end users is system configuration complexity," said Daigle. "We've designed the Series 9100 Digital system for ease of use and configuration to meet the needs of diverse mission protocols." Because the system uses a web browser type graphic interface for programming, it can be configured by any technician with a laptop and Ethernet cord. "The installation and integration of the Series 9100 intercom system on the ZH-1300 OB was easy and smooth, facilitated by comprehensive and clear installation manuals," said Hemphill.

Ongoing Support

Zodiac Milpro and David Clark Company each have over 20 years' experience in serving the RHIB/HSC military and law enforcement markets. They also share a common commitment to product service and support for their respective customers. "David Clark has proven to be very responsive to customer and special requirements, including military radio interface and system installation assistance. Their worldwide support is also an important factor in military/professional applications," said Hemphill. He adds, "Ultimately, the most important characteristic is the performance of the equipment. There have been no problems and the feedback from customers has been positive with regards to quality of communication and simplicity of use."

North River Boats Delivers New Fire Boat to Biloxi Fire Department

Oregon-based North River Boats has delivered another new fire boat. The second fire boat delivered in 2018 is for Biloxi Fire Department in Biloxi, Mississippi. The fireboat was based on the extremely popular and commercially reliable Sounder model. With well over a thousand of these boats in the marketplace, this is the most popular hull North River Boats builds. Biloxi's new boat has Dual Task Force Tips Typhoon bow and stern monitors, Task Force Tips VUMs at the both monitors have 2.5-inch take-offs. The boat is also equipped with a Kohler 7.5 kW marine generator, Dometic air conditioner with heat strip, King Air electric interior heat, Operator and Navigator suspension seats, two casualty benches for patients on backboards and stokes/backboard storage. Oxygen bottle storage and SCBA mounts are all included making the interior a small EMT station.

LOA: 36'	Sprint Speed: 40 knots	Propulsion: Twin Yamaha 4.2L 300 HP Outboard
Beam: 9'- 6"	Cruise Speed: 28 knots	Fire Pump: Darley 1500 GPM
Bottom width: 9'	Deadrise: 24 degrees	Fuel Capacity: 170 Gallons

Moose Boats Wins North Beach VFD Contract

Moose Boats was awarded a contract from North Beach Volunteer Fire Department in Chesapeake Beach, Maryland, for the construction of a M1-46 Fire Rescue Catamaran. The M1 will be equipped to accommodate the wide range of response scenarios. The M1-46 catamaran's large walk-around climate controlled cabin will be outfitted for patient treatment, search and rescue and incident command. The deck will be outfitted for deploying life rafts and dive teams, beach rescue and a large volume discharge for fire suppression water supply to land based apparatus. North Beach Volunteer Fire Department and Calvert County, Maryland jointly funded the purchase of the new Moose Boat which will respond to incidents on the majority of the western shores of the Chesapeake Bay. Moose Boats has constructed vessels for some of the most prestigious fire departments throughout the United States.

LOA: 38' – 10"	LWL: 30' – 2"	Freeboard: 45" @ Midship	Propulsion: (2) Cummins QSB6.7 425hp
LWL: 30' – 2"	Draft (Max): 24"	Displacement: 19,000 lbs. (dry)	Propulsion Units: Hamilton Jet HJ292
Beam: 13' – 10"	Dead Rise: (Aft) 15º	Fuel Tankage: 300 Gallons	Firefighting Pump: Hale 1,000GPM
Draft (Max): 24"	Dead Rise: (Entry) 45º	Transmission: Twin Disc	Drivelines: Logan Clutch / Driveline Service

Gladding-Hearn Delivers Sixth Vessel to Circle Line Sightseeing

Gladding-Hearn Shipbuilding, Duclos Corporation, has delivered the sixth new sightseeing vessels for Circle Line Sightseeing Cruises, Inc., in New York City. Like the earlier vessels, the new 599-passenger all-steel vessel was designed by DeJong and Lebet, N.A. The well appointed vessel's pilothouse is equipped with port and starboard wing stations, in addition to the centerline helm. The cabins are equipped with very large double-glazed windows, offering spectacular views of the New York City skyline in any weather. Aft of the seating is a bandstand for live entertainment. The cabins are arranged for significantly improved concession areas, three cocktail bars and a wheelchair-accessible head. Heating and air-conditioning are supplied by a 271,000 Btu diesel-fired boiler and six 10-ton water-cooled chillers.

U.S.-Built, Incat Crowther Designed Ferries to Service Cancun

Midship Marine in Harvey, Louisiana has delivered City Jet 1 and City Jet 2, Passenger ferries as part of a six vessel new build program for the Cancun-based operator, Ultramar. The vessels will operate at high frequency across the enclosed lagoon adjacent to Cancun, thereby sparing tourists a notoriously lengthy bus trip and reducing travel times by up to 70%. The main deck cabin can accommodate 118 passengers in high-end seating. The vessels are fitted with forward and aft hinged boarding ramps on both sides that facilitate rapid loading and unloading. By being tailored to a specific set of operational requirements, this lagoon vessel will be reliable and profitable.

LOA: 91' 10"	Construction: Marine Grade Aluminum	Draft: 3' 11"
Beam: 24' 7"	Passengers / Crew: 300 / 2	Fuel Oil: 528 gallons
Draft: 3' 1"	Main Engines: 2x Yanmar 6HYM-WET	Speed (Service): 22 KT

VT Halter Marine Building Nation's First Offshore LNG ATB Unit

VT Halter Marine in March held a ceremony to commence construction on America's first Liquefied Natural Gas Articulated Tug and Barge (LNG ATB) unit. Q-LNG Transport's ATB LNG unit, which was announced as part of a long-term contract with Shell Trading (U.S.) Company, will eventually deliver LNG as a fuel source to various ports in Florida and the Caribbean. The ATB Tug will have 5,100 horsepower, GE 6L250 MDC EPA Tier 4 main engines, with Z-drives, and dimensions of 128' x 42' x 21'. The barge is designed to carry 4,000 cubic meters of LNG, and will have dimensions of 324' x 64' x 32'.6". The LNG ATB Unit is designed to meet the requirements of American Bureau of Shipbuilding (ABS) and the International Gas Carrier (IGC) code as an LNG bunkering barge. Anticipated delivery of the first unit is in the first quarter of 2020.

ASIS Boats USA Delivers for MDTA

ASIS Boats USA recently delivered their newest high performance Law Enforcement Rigid Hull Inflatable Boat (RHIB) to a Special Operations Marine Unit of the Maryland Transportation Police. The contract for this custom-built high-performance boat was awarded this past year and the boat was just delivered in March of 2018. ASIS Boats USA utilized their very unique concave reverse-chine designed hull-form in order to provide the police with an exceptionally fast and agile boat capable of high-speed tactical maneuvers. Additionally, a highly custom fully shock-mitigated operator console was installed.

In addition, the vessel was designed with twin diver-access-notches to easily facilitate man-overboard rescues at sea and also installed was the latest in mission-modular, tactical boarding-ladder systems.

WFSA's 5th Annual Design Competition

The 1st and 2nd prize awardees of the 5th Annual International Student Design Competition for a Safe Affordable Ferry were honored at a reception on March 22 at the annual Ferry Safety and Technology Conference in downtown New York. This year the students were asked to design a passenger ferry that could traverse the Singapore Strait and access terminals in Indonesia, Malaysia and Singapore and carry 300 passengers plus crew. The students were expected to take into consideration local weather patterns and traffic conditions in the Malacca and Singapore Strait. First Prize was awarded to a Singapore Collaborative team from the Nanyang Technological University, Singapore Management University and Newcastle University in Singapore. Among other unique design considerations, diesel is the fuel source supplemented by solar power generated by a huge malleable screen at the top of the vessel. Additionally, the team thought through design for operations in the event of a serious accident.

Lake Assault Delivers for TDFPD

Lake Assault Boats has delivered a 32-foot fireboat, named Marine 24, to the Tahoe Douglas Fire Protection District (TDFPD) in Lake Tahoe, Nevada. The boat is designed to respond to a wide range of emergencies, including structural and wildland fires, and on-the-water rescue operations. It is funded, in part, by donations and fees collected for membership in an innovative fee-for-service program. The progressive V-hull, landing craft-style fireboat is outfitted with twin 350 hp Mercury Verado four-stroke outboard engines, and is equipped with the Skyhook Digital Anchor and Joystick Piloting systems that significantly improve the craft's on-the-water performance. The boat also sports a 74-inch hydraulically operate bow door (with an integrated ladder), a port side dive door, and hose storage compartments.

The National Security Multi-mission Vessel Program has legs

Credit: Herbert Engineering / Marad

When President Donald Trump signed the FY18 Omnibus spending bill into law, that budget included $300M to begin the long-sought State Maritime Academy Training Ship Replacement Program. Known as the National Security Multi-mission Vessel (NSMV), this new-build replacement training ship program will improve the training and stabilize the production of mariners by the nation's maritime academies for decades to come. Work to advance this program began over 8 years ago and now, completion of the final design and construction of the first vessel can commence. These state-of-the-art training platforms will each carry 600 cadets and 100 officers and crew. They will also be designed to support FEMA in times of national emergency. It is expected that the first ship – hopefully of many in this class – is scheduled to replace SUNY Maritime's aging Empire State.




Huntington Ingalls Industries (HII)

Wasson Callahan Thomas


Damiano


Holm


Clark


Williams

HII Announces C-Suite Promotions and Appointments

Huntington Ingalls Industries (HII) announced that **Jeanne Callahan** has been named corporate vice president, internal audit, and that **David "Chip" Wasson** has been named corporate vice president, corporate strategy. Both promotions are effective immediately. Callahan has served as director, business management, contracts and government compliance since 2011. She earned a bachelor's degree in commerce at the University of Virginia and an MBA at the College of William and Mary. Wasson previously served as director, corporate strategy. He earned a bachelor's degree in economics from the U.S. Naval Academy and an MBA from Vanderbilt. Separately, HII also announced that **Christie Thomas** has been promoted to vice president of contracts and pricing at its Newport News Shipbuilding division. She joined HII's Ingalls Shipbuilding division in 2006 and has held director-level positions in a variety of supply chain and business management roles. Thomas earned a bachelor's degree in economics from Bucknell University and an MBA in finance from SUNY Binghamton.

JAXPORT Names Damiano Head of Government Affairs

JAXPORT has welcomed **Justin Damiano** to the role of Director, Government Affairs. Damiano most recently served as Manager, Government Affairs and Community Investment, for Comcast NBCUniversal. He holds a Bachelor of Business Administration in Economics from the University of North Florida and is a graduate of Leadership Florida Connect. A U.S. Marine Corps veteran, he held various logistics management roles during his military service.

Holm to Lead Sea Machines German Office

Sea Machines Robotics announced that it had hired **Peter Hjarbaek Holm** to manage its new Hamburg, Germany, office. Since 2015, Holm has provided consultancy to the company as a commercial agent for European markets. He now reports to CEO Michael Johnson from the Boston office. Holm's notable experience includes his role as commercial manager for the Costa Concordia salvage project.

ComMar Expands Sales Team

ComMar Sales LLC has added **Jeff Clark** to its sales team. With more than 10 years of retail management with Boaters World and West Marine, Jeff has the ability to leverage his understanding of the retail space to better assist ComMar's dealer network and merchants. He will actively promote ComMar's many lines of electronics, parts and equipment for outfitting new and refit boats.

NOIA Promotes Williams to Senior Director

The National Ocean Industries Association (NOIA) has promoted **Justin Williams** to Senior Director Digital and Public Affairs. A member of the NOIA team since June 2015, he also handles media relations on legislative issues and regularly contributes articles for publication in print and online. He also staffs NOIA's Public Affairs and Education Committee.

Ekse Joins Elliott Bay Design Group

Robert Ekse has joined Elliott Bay Design Group's team of naval architects and engineers as a Project Manager in EBDG Seattle, WA office. Robert has 27 years of experience in increasingly responsible roles within the marine industry, working for operators and shipyards along the West Coast and has a hands-on approach to management.

TOTE's Chiarello, to Retire

Anthony Chiarello, President and CEO of TOTE, has announced he will retire. Chiarello has 39 years of service in the maritime industry in leadership roles. The company's parent, Saltchuk, will make an announcement regarding Chiarello's successor. Chiarello started his career in stevedoring at ITO and later served as Deputy Administrator of the Maryland Port Administration. He then spent 16 years with Maersk, includ-

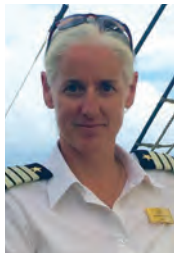

Ekse


Chiarello


Ponstein


Davidson


Mulherin


Whittaker


Schaller

ing service as President of Maersk Logistics USA. Chiarello was named a White House Champion of Change for his work bringing LNG to the maritime industry.

Ponstein Appointed to NOLA PoC

Gov. John Bel Edwards has appointed **Charles H. Ponstein** to the Board of Commissioners of the Port of New Orleans. Ponstein will serve a five-year term succeeding William T. Bergeron. Ponstein is a landlord and owner of several commercial and industrial buildings, and received his Bachelor of Science in Business Administration from the University of New Orleans.

Navy League Recognizes CMA for Scientific Achievement

The United States Navy League has named California State University Maritime Academy's Golden Bear Facility as the recipient of its 2018 Albert A. Michelson award. The award recognizes scientific or technical achievement that results in a significant improvement in the strength of our maritime forces or the enhancement of our industrial technology base. The Golden Bear Facility is the only land- and sea-based facility on the West Coast designed to test and evaluate ballast water treatment systems. Key CMA personnel for the Golden Bear Facility include **Bill Davidson**, director; **Rich Muller**, associate director; and **Chris Brown**, scientific program manager. **Dr. Nick Welschmeyer**, lead scientist, provides science testing and technical methods development.

Retired President of Newport News Shipbuilding Receives Navy League Award

Matt Mulherin, former executive vice president of Huntington Ingalls Industries and president of Newport News Shipbuilding, was recognized by the United States Navy League as a 2018 recipient of its annual Fleet Admiral Chester W. Nimitz Award. This award honors an industry leader who has demonstrated the leadership, statesmanship and dedication to the nation that were exhibited by the award's namesake. Mulherin began his career in 1981 working third shift as a nuclear test engineer and over the next three decades earned positions of increasing responsibility. He assumed the role of president in 2011.

Whittaker is First Canadian Female Passenger Ship Captain

Sea Cloud Cruises announced the promotion of **Kathryn Whittaker** to captain of the Sea cloud II. Whittaker is the first female Canadian captain of a passenger cruise ship. Whittaker's path to captainship is unconventional. While at university in Toronto she took time off from school and worked on touring boats in Toronto Harbor for 3 years, and then made her way to Sea Cloud as a deck hand in 1996. This first position on a sailing ship began her journey into securing her captain's license.

Schaller to Lead Voith Group

Stephan Schaller has been named head of the Corporate Board of Management at Voith GmbH & Co. KGaA and will lead the international technology company. Schaller has supported Voith since 2015 as a member of Voith's Shareholders' Committee. Schaller has been employed in multiple management and leadership positions at Linde, Schott and Volkswagen and was previously responsible for the motorcycle division of the BMW Group.

AAPA Elects Friedman as Board Chairman

The American Association of Port Authorities (AAPA) elected **William D. Friedman**, president and chief executive officer for Cleveland-Cuyahoga County Port Authority, to serve as the association's chairman of the board for the 2018-19 activity year. He will assume the AAPA chairmanship from Steve Cernak, chief executive and port director for Port Everglades, who began his one-year term on Oct. 4, 2017. Friedman has worked in port authority management for nearly two decades. Between 2000 and 2004, Mr. Friedman was CEO of the Ports of Indiana. He


Friedman


Nagle


Newsome

holds two degrees from Indiana University; a bachelor's in history, and a master's in public administration.

U.S. Ports Pleased With FY'18 Omnibus Funding Bill

U.S. members of the American Association of Port Authorities (AAPA) expressed increased confidence their key priorities will be addressed after passage of an omnibus spending package to fund the federal government through September 30, 2018. The spending bill contains funding for a number of AAPA's top infrastructure and intermodal priorities, both on the landside and the waterside. AAPA President and CEO **Kurt Nagle** remarked that the new spending legislation reflects the association's priorities for improving the "oftentimes overwhelmed, antiquated and deteriorating transportation links with America's ports," and represents the first step by Congress to favorably respond to the President's infrastructure priorities.

USCG Monetary Thresholds for Reporting Doubled

The U.S. Coast Guard published a final rule on March 19, 2018, titled, "Marine Casualty Reporting Property Damage Thresholds," which announces changes in the dollar amount thresholds for both serious marine incidents and marine casualties. Originally established in the 1980's, the monetary threshold for a serious marine incident was, "Damage to property in excess of $100,000" as listed on CG-2692B. But in mid-2016, when the USCG revised 2692B for the first time in decades, many were surprised to learn that the $100,000 threshold was being left unchanged. With no adjustment for inflation, relatively minor occurrences were qualifying as serious marine incidents, triggering mandatory drug and alcohol testing. Industry groups then lobbied for an increase in these monetary thresholds, and in January 2017, the USCG published a proposed rule, providing a period for public comment. The final rule, now effective, also increases the property damage threshold for reporting a marine casualty to $75,000.

SC Ports Handles Record Volumes in March

South Carolina Ports Authority announced the strongest monthly container volume in its history, with 199,659 twenty foot-equivalent container units (TEUs) handled in March. Year-over-year container volume is up, and the Port handled 1.6 million TEUs during the first three quarters of its 2018 fiscal year. "The record volumes achieved by our port in March reflect seasonally strong volume in all segments combined with the further deployment of big container ships to the U.S. East Coast," said **Jim Newsome**, SCPA president and CEO. March also marked a record month for finished vehicles, with 28,391 vehicles moving across the docks.

U.S. Coast Guard to Discontinue Differential GPS Service

The Coast Guard will discontinue broadcasts from its remaining 38 Differential GPS (DGPS) sites over the next three years, completing system reductions that began in 2016. The staged reduction of the remaining Coast Guard DGPS broadcast sites will begin in 2018 and end with the last broadcast of GPS corrections over medium frequency in 2020. "The Coast Guard no longer has a mission requirement for DGPS," said Lt. Cmdr. Michael Patterson, chief of the Aids to Navigation and Positioning, Navigation and Timing Division. The Coast Guard says that other commercial and government GPS augmentation systems are available for GPS users. The observed accuracy of un-augmented GPS increasingly exceeds the 10-meter accuracy requirements for harbor navigation and harbor approaches.

Jeffboat Announces Plant Closure

Jeffboat last month announced the pending closure of its shipyard operations in Jeffersonville, Indiana. Jeffboat president and CEO **Mark Knoy** said they will finish construction of

Knoy

Great Lakes

Middlebrook

barges around the first of May. Over an 80 year history, Jeffboat's workers built 12,900 vessels, with recent workforce numbers seen as high as 1,300 teammates. With orders running out and no future backlog of business, the shipyard will launch its last barge sometime in the middle of April. Knoy added, "While we're very sorry that market conditions have left us with no choice but to close Jeffboat. The shipyard closure will not have an impact on ACBL's barge freight business or its customers, vendors and teammates."

U.S. Great Lakes Optimism High as Seaway Begins 60th Season

As the St. Lawrence Seaway opened on March 29, US Great Lakes ports geared up for a busy 2018 shipping season fueled by new business and infrastructure expansion. U.S. Great Lakes ports have made significant investments in infrastructure and services that are attracting new business to their respective regions and facilitating American cross-border and international trade. The Port of Cleveland, for example, saw a 20 percent increase in international tonnage in 2017; something port officials are cautiously optimistic will carry into 2018. Elsewhere, iron ore shipments through the Port of Duluth-Superior wrapped up last season on a high note, topping 19.7 million short tons, making

Lamie & Sanders

Smitha, Semprevivo & Moser

El Faro

2017 the strongest season in a decade for domestic and international movements of iron ore. Lake Michigan is predicted to have high water levels this spring, something the Port of Green Bay is looking forward to. Higher water levels mean boats can get in and out of the harbors easier while carrying more cargo. Over 227,000 jobs are supported by cargo moving over the Great Lakes / Seaway System. **Craig H. Middlebrook**, Deputy Administrator of the U.S. Saint Lawrence Seaway Development Corporation, congratulated the SLSMC on its anniversary. "The close collaboration between the two Seaway corporations has been a model of binational cooperation," noted Mr. Middlebrook, adding, "We look forward to continuing to build on the tremendous progress we have made together for our two countries and for the Great Lakes St. Lawrence Seaway region."

St. Louis Regional Freightway, Regional Ports, & Plaquemines Ink MoU

The St. Louis Regional Freightway, Plaquemines Port Harbor & Terminal District located in the State of Louisiana and four ports in the St. Louis region have entered into a Memorandum of Understanding (MOU) to establish and promote international and inland trade routes at strategic locations along the Mississippi River. The agreement calls for joint marketing initiatives and exchange of data to further those goals. The agreement embodies the St. Louis region's strong support for the efforts underway by American Patriot Holdings, LLC, and the Port of Plaquemines to develop a hub-and-spoke system for container transport vessel shipments from Plaquemines, at the mouth of the Mississippi River, to the St. Louis region. "The Freightway is committed to serving the greater St. Louis region by helping to support efforts to attract shippers and carriers, and we believe the proposed container transport vessel route would benefit the entire region and other ports along the Mississippi River Basin," said **Mary Lamie**, Executive Director of St. Louis Regional Freightway. Also signing the MOU was **Sandy Sanders**, Executive Director of Plaquemines Port Harbor & Terminal District (Plaquemines Port).

Seakeeper Welcomes Madison Industries as New Partner

Seakeeper has welcomed Chicago-based Madison Industries as a new majority owner. Existing Seakeeper management will continue running day-to-day operations, with Madison, led by Larry Gies, supporting the company vision of bringing stabilization to every boat 20' and above. **Andrew Semprevivo** will now serve as President and CEO. Bob Moser will serve as Vice President of Manufacturing & Engineering, and Rebecca Smitha, Vice President of Finance.

USCG: Lessons Learned from the EL FARO Casualty

The Coast Guard Marine Board Report on the sinking of the EL FARO, with 33 lives lost, revealed that loss of propulsion during extremely heavy weather was a contributing factor to the sinking of the vessel. The exact operational status of all vital EL FARO engineering equipment during the hours preceding the casualty could not be determined. However, bridge audio recordings indicate that the vessel lost lube oil pressure to the main propulsion turbine and reduction gear bearings, resulting in loss of propulsion. It is believed that the vessel's substantial list, coupled with trim by the bow, caused the main engine lube oil pump to lose suction. For a single-turbine ship like EL FARO, this type of casualty would result in a total loss of maneuverability until the system can be restored. In summary, the Coast Guard strongly recommends that operators verify that their main propulsion machinery, essential auxiliary systems, and emergency generators are designed in compliance with the CFR, SOLAS and Classification Society requirements for operation in static and dynamic conditions of list

Wiernicki

Alfultis & Evangelos

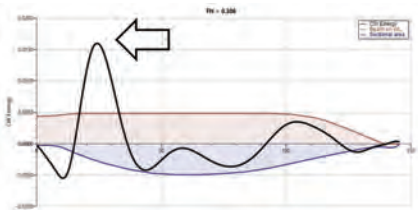
and trim. Additionally, Engineering Department personnel should ensure better understanding of the possible ways to mitigate the effects of heavy weather on vessel operations.

ABS to Pilot Condition-Based Class for US Navy's MSC

ABS announced that it is engaged in a two-year project with the US Navy's Military Sealift Command (MSC) to deliver the industry's first bow-to-stern Condition-based Class asset management program. The objective of the two-year joint project is to enable the move from purely calendar-based surveys to an entirely condition-based classification model using digital solutions to increase MSC's operational availability and flexibility. Throughout the project, ABS is collecting data from newly installed hull sensors, as well as from sensors on all classed machinery, onboard three MSC vessels. "Integrating condition-based maintenance into the survey model is the future of class, and we are delivering it today," said ABS Chairman, President and CEO, **Christopher J. Wiernicki**.

SUNY, Merchant Maritime Academy of Hydra Ink MoU

Rear Adm. **Michael Alfultis**, president of SUNY Maritime College, and Cmdr. H.C.G. **Danopoulos Evangelos**, of the National Merchant Maritime Academy of Hydra, Greece, recently signed a memorandum of agreement to establish an articulation agreement between the two maritime institutions. It allows the two institutions to develop further partnerships and find additional areas of cooperation. The agreement will also allow the Greek students, upon completion of their program at Hydra, to transfer to SUNY Maritime College to earn a Bachelor of Science in Marine Operations. This agreement marks the latest in a series of agreements SUNY Maritime College has signed to build international partnerships, and to help students and faculty stay connected to the international maritime industry.



New Features Available in NavCad 2018

For hydrodynamic design and analysis of ships and other marine vehicles, design engineers turn to NavCad for the prediction of attainable speed and range, power demand, fuel consumption, even noise. The new NavCad Premium Edition features for dual fuel, calculation of CO2 production, and the longitudinal wave source plots are very significant, especially for LNG vessels. Users achieve simulation of the Hull-Propulsor-Drive-Engine system in seconds.

www.hydrocompinc.com/navcad

Precise Positioning with Posidyne Clutch/Brakes

Posidyne clutch brakes feature oil shear technology for rapid and precise stopping, starting, speed change and positioning, all without adjustment or maintenance. Designed with low inertia cycling components makes the Posidyne clutch brake more efficient, requiring less motor horsepower to accelerate the load, and less torque to stop the load. An enclosed design is ideal for hostile environments, impervious to dust and weather.

www.forcecontrol.com

MobileOps Bolsters Safety, Maintenance and Regulatory Initiatives

The MobileOps Platform, used across a fleet of vessels will facilitate safety, maintenance, and regulatory initiatives – like SubM, for example. With changes to legislation, industry practice and expectations, MobileOps simplifies paperwork and processes for different aspects of workboat operations. The MobileOps Platform is a cloud-based subscription solution that includes both a Web Application and an offline-capable iPad application called Voyager.

www.mobileops.co

Hougen Drills Offer More Tooling Options

Hougen Manufacturing's portable HMD2MT magnetic drill features a #2 Morse Taper arbor system for increased versatility. With a Morse Taper arbor system, the HMD2MT can accept standard #2 Morse Taper accessories. This gives the drill the ability to tap holes using Hougen's tapping adapter, use reamers for cleaning or enlarging holes, twist drills for blind and smaller holes, and much more.

www.hougen.com

Workboat Operators Select IMTRA for Wide Range of Gear

IMTRA provides offshore series LED deck lights, Exalto and Roca windshield wipers, Side-Power thrusters and Zipwake Dynamic Trim Control Systems to workboat operators everywhere. LED deck lights are engineered by Vision X to provide superior illumination with exceptional durability. IMTRA wipers are designed to offer unparalleled options. Side-Power thruster systems make installing a bow thruster on a workboat more common.

www.akzonobel.com

Cortec VpCI-649 BD Fights Corrosion, Scale, and Odors

Cortec's VpCI-649 BD is designed to provide long-term protection for ferrous and non-ferrous metals in fresh water, steam, and glycol closed-loop systems. It is also effective at stopping aggressive corrosion in a broad range of applications, including, closed loop cooling systems, cooling system lay-up, hydrostatic testing of pressurized vessels and pipelines, fire extinguishing systems, oil storage tanks and more.

www.cortecwatertreatment.com

Lankhorst's Rope Recycling Initiative

Lankhorst Ropes' Mooring Rope Recycling Initiative for the cruise industry allows retired ropes to be repurposed in myriad ways. The Mooring Rope Recycling Initiative will assist the cruise lines in going further by repurposing synthetic fiber mooring lines previously sent to landfill. The Lankhorst rope recycling initiative will become available at the following cruise terminals: Port of Miami, Port Everglades and Port Canaveral.

www.lankhorstropes.com

Southco's Compact Electronic Actuator

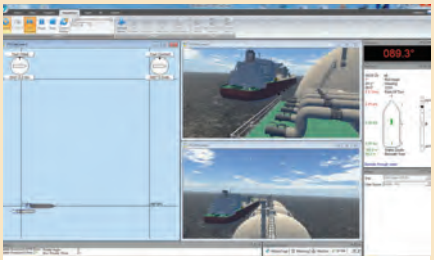
Southco's AC-EM 05 Electronic Actuator offers an economical option for achieving electronic actuation of Southco's R4-05 Micro Rotary Latch series and other mechanical latches. The AC-EM 05 Electronic Actuator can actuate a mechanical latch to remotely open/unlock a panel. With its small profile design and efficient gear motor operation, it is ideal for concealed applications where physical space constraints are a challenge.

www.southco.com

Larson Electronics Explosion Proof LED Strobe Light

Larson Electronics' EPL-HBMN-10-STRB-C explosion proof LED strobe beacon light is UL and CSA listed for Class I Division 1 and 2, Class II Division 1 and 2 and Class III, and suitable for wet locations. The multi-color explosion proof LED strobe is useful as an indicator light or warning beacon among other applications, and is available in high and low voltage configurations.

www.larsonelectronics.com



BMT's REMBRANDT for Accident Investigation Simulation

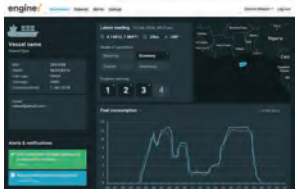
BMT's navigation and maneuvering simulator, REMBRANDT is a scalable, skilled system which can be used via laptop or full mission-based simulator and comprises a database of hundreds of validated ship models that underpins the validity of one or more ships in a seaway. REMBRANDT is widely used in shipping and high risk sectors such as floating oil and gas infrastructure.

www.bmt.org

Super Safety Boots Add Color

Aussie Pumps' 500 bar safety boots are available in high-Vis yellow because of the obvious OH&S gains. The safety boots are essential for high pressure cleaning applications where pressures over 300 bar are applied. These Jet-stop boots are made from vulcanized rubber, providing safe waterproof comfort. Additionally, they come with steel toe caps and steel inserts to prevent puncturing by sharp objects.

www.aussiepumps.com.au



Royston's V2 Enginei Energy Management Technology

The new V2 enginei interface heralds a significant step-forward in easy-to-use, seamless reporting capabilities. Royston's advanced fuel monitoring technology enginei provides comprehensive data analysis and reporting options, features a smartphone mobile interface and new application programming interface capabilities for full integration with company management platforms. The system delivers improved speed and performance control via a customizable dashboard for operators looking to cut costs.

www.enginei.co.uk

Yamaha Two-Strokes Deserve Navalloy

Yamaha two-stroke outboards can be protected from galvanic corrosion by Navalloy aluminum sacrificial anodes from Performance Metals Products. The complete, easy-to-install kits are highly effective in all salinities. Lasting 30% longer than zinc and four times that of magnesium, it doesn't contain mercury or cadmium and only 5% zinc. When enough Navalloy is corroded, the colorful bar shows it's time to change the anode.

www.performancemetals.com

Delta "T" Systems Launches Website Redesign

Delta "T" Systems has launched a redesign of its website. Built in HTML5, the next-generation website features a clean, modern design and scales automatically for desktop, tablet and smartphone. Navigation is intuitive, with simple product breakdowns. The website includes PDF production specifications, and application data worksheets for ventilation and dry exhaust projects. 49-page catalogs are available for free download in English and Spanish.

www.deltatsystems.com

Twin Disc's New HP500 PTO

Twin Disc's rugged and reliable Power Take Off is built to deliver serious muscle. The hydraulically-actuated HP500 boasts an impressive maximum power rating of 373 kW at 1,800 rpm. Ideal for driving pumps, grinders, dredgers, chippers and heavy-duty drills, the HP500 has a modular design allowing for side-load applications. An advanced control system allows for smooth engagement of the driven equipment.

www.twindisc.com

JMP Volvo Penta Replacement Pumps

A vast number of commercial and recreational vessels worldwide are powered by Volvo Penta. JMP Marine manufactures 20 different flexible impeller replacement cooling pumps for 150 engine models, all with proven reliability and superior quality. 100% drop-in compatibility is ensured with JMP Marine. Manufactured in its ISO 9001-certified factory, each replacement engine cooling pump is made from the finest cast bronze and machined to exacting standards.

www.jmpusa.com

Stainless Primus Wheel is Ergonomic and Durable

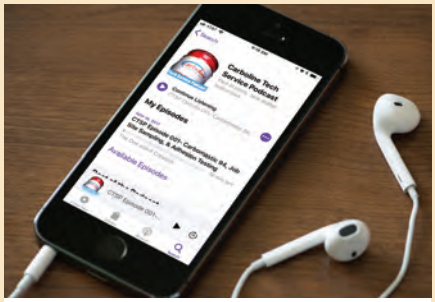
Schmitt & Ongaro Marine's Primus, its cast stainless steel steering wheel, delivers maximum ergonomic comfort and engineered it for long-lasting durability. The visually striking wheel complements any helm and comes with a lifetime warranty. NMMA type-accepted and CE certified, it's so strong, it greatly exceeds ABYC P-22 and ISO 8848 standards. Primus is available in a variety of comfortable configurations.

www.schmittongaromarine.com

Evinrude Rebrands XD Engine Oil as XPS Marine

BRP's line-up of XD engine oil for Evinrude and Johnson outboards has been re-branded as XPS Marine. The same high-quality engine oils now leverage the XPS brand and are offered in three products – XD100, XD50 and XD30. XPS Marine's XD100 Synthetic Formula Direct Injection Oil ensures long engine life, durability and reliability for Evinrude outboards. The synthetic formula delivers maximum engine performance with uncompromising lubrication.

www.evinrude.com



Carboline Announces New Website Launch

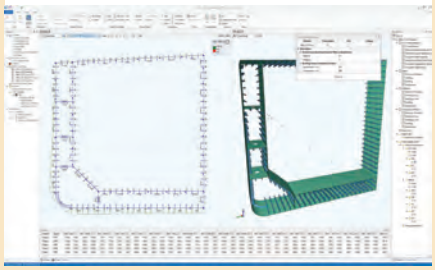
Carboline has completely revamped its website. The site offers quick, easy access to product information and conveys the company's brand. Coupled with the website is the new global format of Carboline's Product Data Sheets. The best feature of the site is its responsive design: content on the site automatically reshapes itself to maximize its presentation for any screen, including tablets and smart phones.

www.carboline.com

DNV GL launches Nauticus Hull version V20

DNV GL's Nauticus Hull software has been given a major upgrade to provide improved support for new DNV GL rules and IACS requirements. Efficient rule calculation tools are essential in the design development for documentation of rule compliance. Nauticus Hull Version 20 has a modern user interface with powerful modeling and rule check capabilities. Training is offered worldwide to bring users up to speed.

www.dnvgl.com/maritime



Ferries Select IMTRA for Refits, New Builds

IMTRA is supplying equipment to both TXDOT and Seastreak Ferries for refit and newbuild programs. TXDOT has selected the Colorlight CL25-11 high-output HMI searchlight from IMTRA and Seastreak is supplying CLite2 searchlights, NorSap 1500 Helm chairs, LED lighting in all passenger areas, IS15 utility lights in the engine room and Ventura LED lights in the wheelhouse.

www.imtra.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

3M Completes Advanced Weathering Research on Marine Sealants

The effects of water and humidity can take a toll on boats. To better predict how long a product will last under these harsh conditions, 3M tests the weatherability of all its marine adhesive sealants. Recently, 3M completed new extensive weatherability testing on its 3M Marine Adhesive Sealant 4000 UV in both black and white formulations to ensure durability and performance in harsh conditions.

www.3M.com/Sealants

Hempel's Hempadur Ultra-Strength Fibre 47510

Hempel is launching its new cargo hold coating – Hempadur Ultra-Strength Fibre 47510. This innovative coating offers customers an outstanding return on investment by delivering up to 40 percent reduction in cargo holds maintenance costs. This next generation cargo hold coating is specifically designed to withstand harsh conditions and offers superior corrosion protection, and long major repair intervals for owners and operators.

www.hempel.com

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49	GP Link	www.gplink.com	(252) 504-5113
35	Harken	www.harken.com	(262) 691-3320
43	Interstate-McBee	www.interstate-mcbee.com	(216) 881-0015
31	Karl Senner LLC	www.karlsenner.com	(504) 469-4000
7	Louisiana Cat	www.LouisianaCat.com/Marine	(866) 843-7440
23	McDermott Light & Signal	www.mcdermottlight.com	(718) 456-3606
69	McDonough Marine Services	www.mcdonoughmarine.com	(504) 780-8100
45	Metal Trades Inc.	www.metaltrades.com	(843) 889-5143
26	Metals USA	www.metalsusa.com	(800) 523-3340
51	MOPS Maritime License Insurance	www.mopslicenseins.com	(800) 782-8902 ext 3305
57	North River Boats	www.northriverboats.com	(541) 673-2438
17	Parker Water Purification	www.parker.com	(310) 637-3400
53	Pivotal LNG	www.pivotallng.com	(713) 300-5116
9	PPG Protective & Marine Coatings	www.ppgpmc.com	1-888-9PPGPMC
51	Quest	www.questprotect.com/mn	(866) 659-5532
C4	R.W. Fernstrum & Company	www.fernstrum.com	(906) 863-5553
45	Schoellhorn-Albrecht	www.schoellhorn-albrecht.com	(314) 965-3339
20,46	Schuyler Rubber	www.schuylerco.com	(800) 426-3917
61	Scienco/Fast Systems	www.sciencofast.com	(866) 652-4539
55	Simplex Americas	www.simplexamericas.com	(908) 237-9099
13	Stearns/Coleman	www.stearnsflotation.com	(316) 832-2981
1	Superior Industries	www.superior-ind.com	(320) 589-2406
31	Teufelberger Fiber Rope Corp.	www.teufelberger.com	(800) 333-6679
59	The Springfield Marine Company	www.springfieldgrp.com	(417) 616-6707
21	Tidewater Marine	www.tdw.com	(504) 568-1010
24	TPG Mount Vernon Marine LLC	www.tpgmarine.com	(812) 838-4889
47	Viega LLC	www.viega.us/About-us	(316) 425-7400
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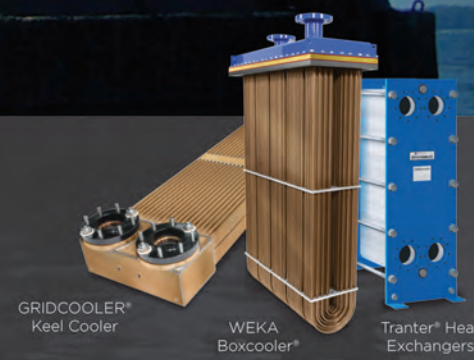

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