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

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Marine News

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The Workboat Annual

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A Rising Tide:
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ON THE COVER

Not unlike its pending deal to acquire Gulfmark, a Tidewater offshore service provider plows full speed ahead in uncertain waters. Domestic OSV operators hope that a rising tide will float all the boats. That remains to be seen. The story begins on page 30.

Image credit: Tidewater

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

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

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

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

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

Contributing Writers
Susan Buchanan • Lawrence R. DeMarcay, III
Tom Ewing • Joe Hudspeth • Randy O'Neill • Barry Parker

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

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

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

Lucia Annunziata • ***annunziata@marinelink.com***
Tel: 212-477-6700 **ext 6220** Fax: 212-254-6271
John Cagni • ***cagni@marinelink.com***
Tel: 631-472-2715 Fax: 561-732-8063
Frank Covella • ***covella@marinelink.com***
Tel: 561-732-1659 Fax: 561-732-8063
Mitch Engel • ***engel@marinelink.com***
Tel: 561-732-0312 Fax: 561-732-8063
Mike Kozlowski • ***kozlowski@marinelink.com***
Tel: 561-733-2477 Fax: 561-732-9670
Jean Vertucci • ***vertucci@marinelink.com***
Tel: 212-477-6700 **ext 6210** Fax: 212-254-6271

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

CORPORATE STAFF
Manager, Marketing
Mark O'Malley • *momalley@marinelink.com*
Accounting
Esther Rothenberger • *rothenberger@marinelink.com*
Tel: 212-477-6700 **ext 6810**
Manager, Info Tech Services
Vladimir Bibik • *bibik@marinelink.com*

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

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MarineNews, 118 E. 25th St., New York, NY 10010.
For more information email Kathleen Hickey at:
k.hickey@marinelink.com

Departments & Analysis

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I have always found that our annual workboat edition is a particularly enjoyable one to put together. At the same time, it is also one of our most important. That's because, and in a historical trend that shows no signs of abatement, the U.S. merchant marine is now largely comprised of workboat hulls. Privately owned, U.S. built deep draft numbers have shrunken to about 180 vessels. As designers find more ways to creatively insert the increasingly popular ATB into virtually every cargo sector, blue water hull replacements, when they happen, come with larger deadweight and TEU capacities. Replacements of existing hulls won't come on a one-for-one basis. Expect that trend to accelerate.

All of the foregoing facts shouldn't be taken as gloom and doom. On the contrary, the potential for domestic operators to survive and prosper is quite good. Not withstanding the withering attacks launched on the Jones Act in this calendar year, U.S. builders are churning out a raft of innovative craft, primarily of the workboat genre. As they do, OEM's are there to make sure they hit the water with the best possible equipment. Trying to figure out which equipment best fits your particular hull is the hard part. And, it shouldn't be. To that end, our unique primer on 'outfitting today's workboat' starts on page 54. Go ahead; kick the tires and pop open the hood.

As some sectors prosper – passenger vessels and patrol craft, in particular – others remain in the doldrums. The offshore sector, buffeted by a prolonged downturn in oil prices and a surprisingly resilient onshore shale business, is only now seeing a glimmer of hope. Rig utilization is up, which should (in theory) translate into stronger demand for offshore support vessels. On the other hand, there are just too many domestic hulls in layup, something that won't help day rates any time soon. As the tide comes back in, will all the boats float? That's the question that Barry Parker ponders, starting on page 30.

Maritime stakeholders are always intent on getting the inside scoop on the domestic waterfront, and if so, then ***MarineNews*** is certainly the right place to drill down for data. Of course, we don't claim to have all the answers. That's why, this month, we brought in Marad chief Mark Buzby to bring us all up to speed. On the job for a little more than one year, Buzby has quickly earned the respect of both commercial and government players alike. With much already accomplished on his watch, there's still more to come. Turn to page 14 to find out how and why.

Circling back to where I began, you already know that your workboat-oriented business increasingly finds itself at the heart of the domestic waterfront. I don't know if that is cause for alarm or celebration. Maybe both. Certainly, it provides ample opportunity for the right stakeholder(s) to prosper. That said; there's no earthly reason why that can't be you. Inside the pages of ***MarineNews*** is a great place to start.

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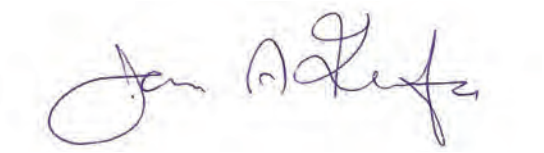

Joseph Keefe, Editor, keefe@marinelink.com

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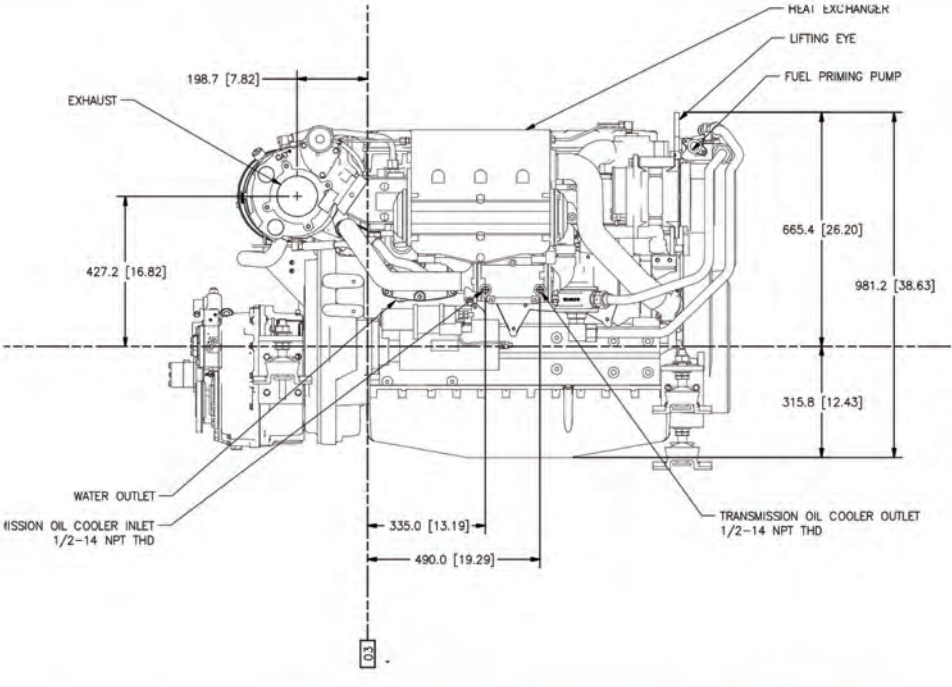

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Authors & Contributors


Ballands

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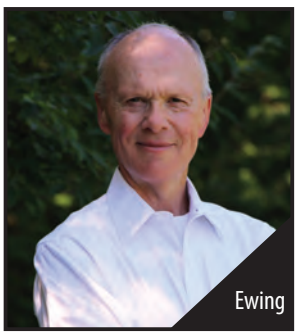
Parker


Russell


Davis


Kaplan


Ewing


Meador


Gilheany


Odegard

David Ballands is LOC Group's Regional Director for the Americas, covering LOC's offices in Canada, the USA, Mexico and Brazil. David is one of LOC's most senior civil engineers, specializing in the transportation and installation of offshore structures and the investigation of fixed object damages.

Tom Davis is a partner in Poyner Spruill LLP's litigation section and has more than 25 years of experience in the litigation and arbitration of complex cases. He regularly represents property owners, design professionals and construction contractors on construction related issues, including contract negotiation, claims analysis and presentation, labor and OSHA disputes, professional licensing disputes, and land condemnation.

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

Kevin Gilheany is a retired U.S. Coast Guard marine inspector and owner of Maritime Compliance International (MCI). MCI is not a Subchapter M TPO. MCI works directly with clients to prepare for Subchapter M, TPO auditors, and the U.S. Coast Guard, regardless of the compliance option chosen.

Senior Project Engineer, **Adam Kaplan**, is the lead developer of PropExpert and PropCad, HydroComp's propeller sizing and propeller design for tools. He has been with HydroComp for over a decade and is a frequent speaker at conferences. He holds a Master's of Science in Mechanical Engineering from the University of New Hampshire and is the regional membership chair of the Society of Naval Architects and Marine Engineers (SNAME) for New England.

Ray Meador is a Marine Coatings Representative for Sherwin-Williams Protective & Marine Coatings. His coatings career spans over 40 years, including more than 30 years with Sherwin-Williams, serving in such roles as corrosion specialist and sales representative. He is a NACE Certified Coating Inspector – Level 3. He can be reached at ray.g.meador@sherwin.com.

Sveinung Odegard is sales manager for Corvus Energy in North America. He has participated in hybrid and all electric projects in Norway, and combines his work in Europe with living in Seattle, WA. Odegard also owns and operates a small business focusing on green marine technology for the North American market.

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

Justin Thomas Russell is Executive Director of the Spill Control Association of America. Russell has a proven record in spill response operations and management. He is a twelve year veteran of the United States Coast Guard and Coast Guard Reserve where he specialized in Marine Safety and Environmental Response.

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Offshore Supply Vessels:
Balancing Continued Pressure with Gradual Recovery

Global consulting firm AlixPartners, in a new paper entitled, "***Too many ships, too few rigs: why recovery is still a distant dream for the OSV sector,***" warns that companies counting on a quick return to stability in the OSV sector are in for a rude awakening. The September report goes on to say that OSV companies continue to face pressure due to a radically changed oil industry and must take quick and decisive action in order to survive in what should be considered the 'new normal.'

Separately, VesselsValue.com's Head of Offshore, Charlie Hockless told ***MarineNews***, "I would agree that there are murmurs of a potential market recovery brewing, however, there remains a considerable number of vessels that could theoretically be reactivated when rates recover, making these vessels a danger for the future market by elongating the downturn."

Warning lights continue to flash bright for offshore supply vessel (OSV) operators, writes AlixPartners. Oil prices have rebounded to $70 to $75 per barrel, but the sector remains in serious trouble. Worldwide utilization is weak – with North America among the worst-performing regions. Charter rates are still running at or close to operating cost levels. A continued glut of vessels, caused by over-ordering during the boom in oil prices and easy credit, is hampering the industry. AlixPartners further warns that existing financial resources are likely not enough to sustain operators through the current environment, adding that 34 of 38 companies had Altman-Z scores of less than 1.8, indicating a high likelihood of bankruptcy in the next 12 months.

The two factors that drive revenue for OSV companies remain offshore rig utilization and day rates. The number of active offshore rigs is 33% lower than 2014 levels, declining to 474 in July 2018 from 706 in 2014. OSV day rates are 40% lower than in 2014. Moreover, geopolitical factors and U.S. oil infrastructure issues aside, abundant shale oil supplies in the near term and the impact of energy transition on oil demand in the medium-to-long term will likely serve as constraints on drilling a substantial number of new offshore wells.

Given these structural shifts in the oil industry, the AlixPartners report says that the global OSV market is currently oversupplied by about 1,150 vessels. About 900 vessels are 15 years or older which will have difficulty finding work and could be retired. But there are real factors preventing a reduction in the overall supply of vessels. The sector is fragmented, with the largest operators controlling 30% of the fleet and the remaining 70% controlled by 400 smaller operators with fleets of six or fewer vessels. Small operators have little incentive to retire any of their own fleets and are loathe to take action that would benefit the larger companies or the sector overall.

VV's Hockless also weighs in, adding, "The nature of these laid up ships also blurs the real fleet size. A high proportion of these vessels are out of class and genuinely, worth less than what it would cost to get them back to operating condition. So why aren't owners sending them to the scrap yard? This is often to do with age."

AlixPartners advises that companies need to be more ambitious about their cost-cutting plans, by streamlining both operating and selling, general and administrative expenses – some of which could be driven by employing state-of-the-art technology. Consolidation will also likely play a role to address some of the supply overhang while realizing cost synergies and improving the sector's value proposition. On the other hand, debt restructurings seem still off-limits for some creditors. Nevertheless, with a debt/EBITDA ratio of 23.9x, the sector is overleveraged, and most of that debt is unlikely to be repaid.

The difficult actions now required to become more cost-competitive and restructure balance sheets could create stronger world-class companies that can not only survive this crisis, but even thrive if the sector recovers. Today, the oversupply of vessels is the single biggest drag on the OSV sector. The market consensus for future offshore rig levels is currently running at about 550. Assuming a 4.5x OSV-to-rig ratio, this implies an overcapacity of about 1,150 vessels after factoring in current order book levels and demolition run rates. It would make sense to retire the roughly 900 vessels that are 15 years old or older, 500 of which are older than 25 years. But there are impediments preventing the OSV fleet from adjusting to sustainable levels. The most prominent impediment is the highly fragmented nature of the OSV sector.

The 10 largest operators in the sector control roughly 30% of the total fleet, while the remaining 70% or about 2,500 vessels, are in the hands of some 400 smaller operators, whose fleets tend to number six or fewer vessels. These smaller operators have little incentive to retire any of their own fleets and even less incentive to take collective action for the benefit of the collective sector. A general bias among operators against

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retiring vessels altogether sees most operators stacking the redundant elements of their fleets in the hopes that demand will rebound and most can be recalled to service.

At the same time, the scrapping option is not as economically attractive for offshore supply vessels as it would be for tankers or bulk carriers. The low steel content of offshore supply vessels leaves them with a scrap value of less than $1 to $2 million, with transport costs also weighing on that difficult decision. On the other hand, says VV's Charlie Hockless, "Unfortunately for vessel owners, based on recent efficiencies made within the industry, they will have no choice but to scrap vessels on a large scale. Unsurprisingly OSV demand is lower than it was five years ago. What is surprising is that if we currently had the same level of drilling activity as we did five years ago today, the number of OSVs required for drilling support would be lower (than 5 years ago)."

Finally, says Hockless, "These leaner times have forced drillers to reduce costs, and they have done so with great success. So much so that in some areas, a USD 40/bbl oil price environment has been made profitable. If vessel owners accept scrapping losses now, the rewards/recovery will come sooner."

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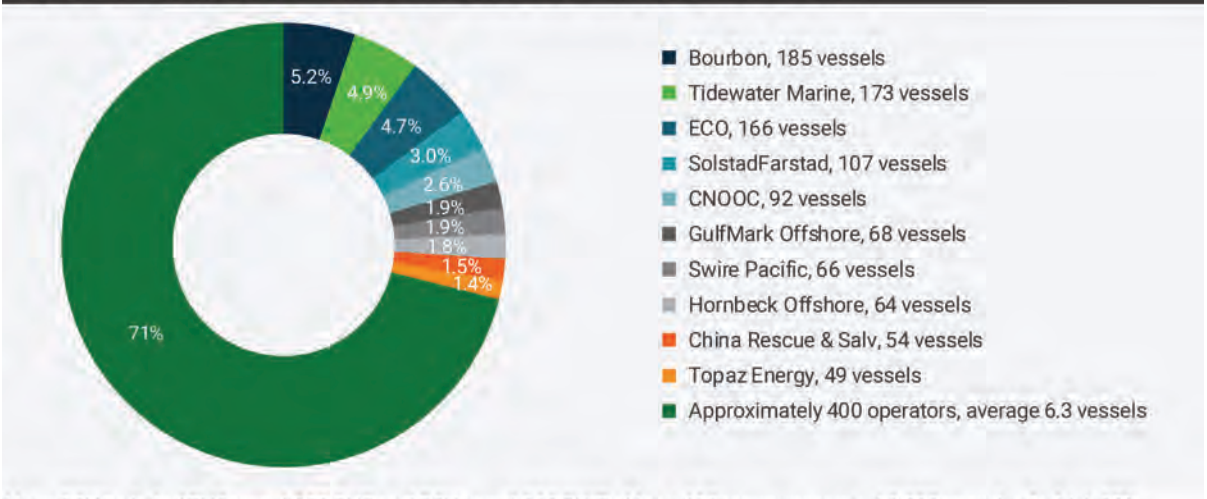
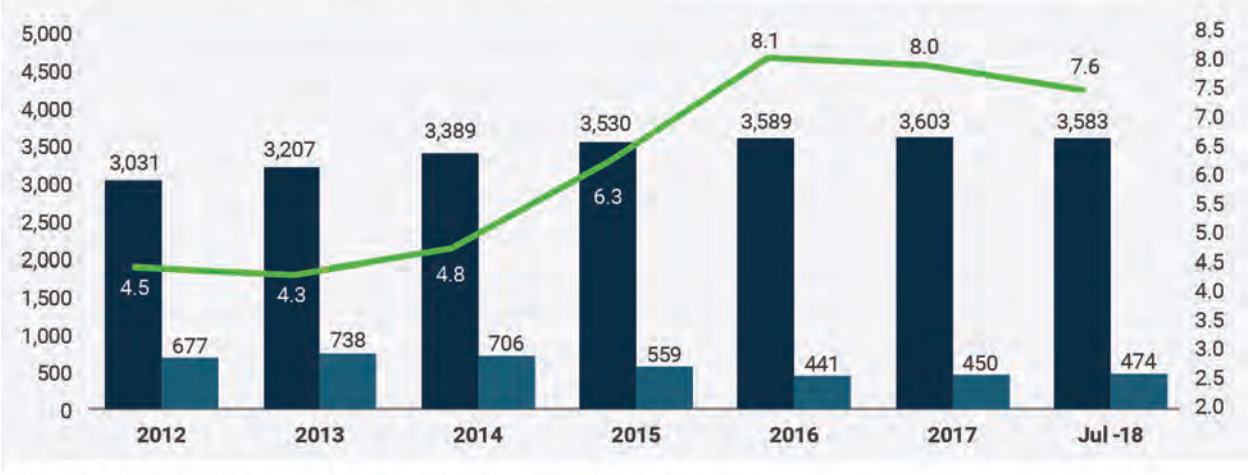
HIGHLY FRAGMENTED MARKET (70% OF SUPPLY IN THE HANDS OF APPROXIMATELY 400 OPERATORS) ACTS AS BARRIER FOR REMOVING SUPPLY OVERHANG



Note: OSV include ATHS over 4,000 BHP and PSV over 1,000 DWT. About 400 operators control 2,500 vessels of which 28%, or approximately 700 vessels, are 15+ years old. Vessel totals as of July 2018.
Source: Clarksons Offshore Intelligence Network; AlixPartners analysis

SUPPLY-DEMAND IMBALANCE STILL BIGGEST DRAW ON OSV SECTOR



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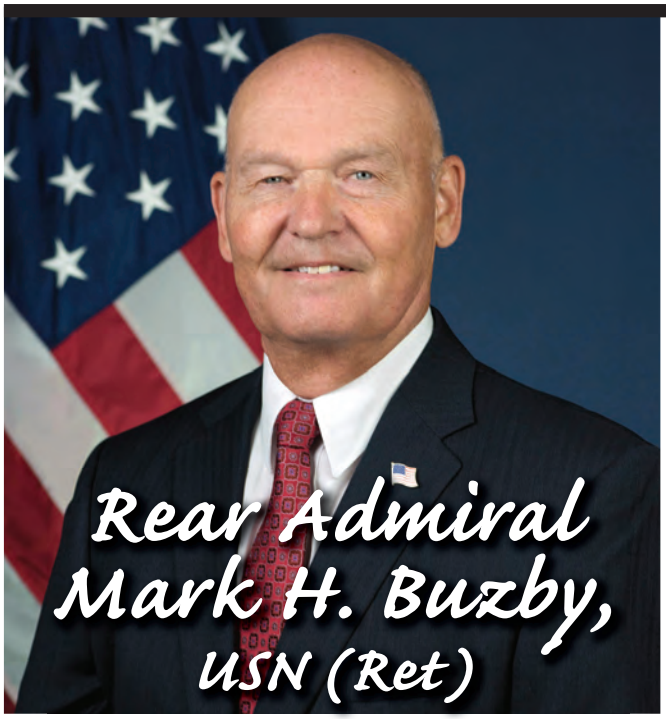

Maritime Administrator, U.S. Maritime Administration

Rear Adm. Mark H. Buzby was appointed by President Donald Trump and sworn in as Maritime Administrator on August 8, 2017. Prior to his appointment, Buzby served as president of the National Defense Transportation Association, a position he has held since retiring from the U.S. Navy in 2013 with over 34 years of service. A 1979 graduate of the U.S. Merchant Marine Academy, Buzby earned his Bachelor of Science in Nautical Science and U.S. Coast Guard Third Mate License. He was commissioned in the US Navy in June 1979, is a graduate of the Joint Forces Staff College and holds master's degrees from the U.S. Naval War College and Salve Regina University in Strategic Studies and International Relations respectively.

Over time, Buzby commanded many U.S. naval vessels and in 1985, he was the Atlantic Fleet Junior Officer Shiphandler of the Year. Ashore, he served on staffs of SIXTH Fleet, US Fleet Forces Command, the Navy staff, and the Joint Staff. Buzby served as the Commander of the U.S. Navy's Military Sealift Command from October 2009 to March 2013. Buzby's personal awards include the Defense Superior Service Medal, Legion of Merit (four awards), Bronze Star, Defense Meritorious Service Medal, Meritorious Service Medal (five awards) and various other unit and campaign awards.

Arguably, Buzby brings to the Marad c-suite one of the deepest and most relevant experience skill sets of anyone who has filled that role in recent memory. His role at the National Defense Transportation Association closely parallels his mission focus at Marad, and his Military Sealift Command experience complements his efforts to ensure that the nation maintains a robust sealift capacity – in times of peace and war. The USMMA graduate brings a keen understanding of both naval and merchant marine operating procedures to an office that must cater to both. Buzby this month paused his frenetic schedule just long enough to weigh in with *MarineNews*. Listen in as ADM Buzby provides *MarineNews* readers a timely SITREP:

The Maritime Administration recently opened a Gateway office in Paducah, KY. Paducah is, of course, near the heartbeat of the U.S. inland marine industry. Tell us what you hope to accomplish there, why, and any progress that you've made to date.

We wanted to expand our reach into the nation's inland waterway system, providing technical and financial assistance for port and intermodal infrastructure development and expansion of waterway services along those routes. MARAD has had a Gateway Office located in St. Louis for a decade, but as focus on waterways for freight movement increases, we determined a second office on the inland waterways was warranted. Locating in Paducah allows us to work more closely with the U.S.-flag inland waterway operators, reach out to shippers who have not considered the waterways as a routine modal choice for shipments, and to educate port authorities, state governments, metropolitan planning organizations and others of the value of including waterways in their regional freight plans.

The Jones Act finds itself under withering attacks from many quarters. You've been a staunch supporter of domestic cabotage. Have the threats to the Jones Act heightened in the last 12 months, and if so, from where is that pressure emanating?

Much of the anti-Jones Act argument has quieted down substantially from last Fall after hurricanes Harvey, Irma,

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and especially Maria tore through the Gulf Coast and Puerto Rico. Cato Institute published a report that was critical of the Jones Act this past Spring, and that served as catalyst for many others to pile on in op-ed pieces. A more supportive Jones Act study commissioned by the American Marine Partnership which followed shortly thereafter refuted much of Cato's argument and offered a shelf to shelf comparison of costs in San Juan vs. Jacksonville showing virtually no difference between common household goods. The debate goes on. Thankfully, there continues to be strong support in Congress on both sides of the aisle where it is recognized how fundamentally important the Act is to our economic and national security. There were no Jones Act waiver requests so far for this hurricane season.

A key problem – in our estimation – for the domestic waterfront is that it has too many voices, each clamoring for dissimilar, stovepiped requirements, as opposed to speaking as a united voice. In other words, we don't tell our story very well. What can we do better in this regard?

It would help a lot to have a National Maritime Transportation Strategy that we could all rally around. Congress has told us to produce one; hopefully we'll have that out soon; it is finishing its final interagency coordination. It's been a long time coming – too long. The U.S. currently moves only a fraction of our domestic freight on the water and waterborne transportation may soon be the only viable option for reducing congestion of land-based freight. We do need to get together on our message.

Sixteen months into your tenure as Maritime Administrator – what's changed – what's been added to your considerable plate since you were first sworn in?

We've experienced strong support from the Administration and Hill committees that fund and oversee us. We were ready to hit the ground running when congress passed the 2018 Omnibus legislation that included funding for the first new training ship – the national Security Multi-mission Vessel (NSMV). We already have a Request for Proposals on the street to select a Vessel Construction Manager who will actually contract with a US shipyard for the ship. Making sure we do the procurement correctly is paramount to providing the State Maritime Academies with a great ship and the American people a valuable tool. We await the FY19 budget to see how many more may be coming. Establishing local and regional maritime Centers of Excellence for training more mariners as authorized by Congress last year is ongoing and we hope to have the qualification criteria in place in early 2019. Congress has also shown a lot of interest in the Ready Reserve Force (RRF) recapitalization program and has authorized the first replacement vessels (used) to be procured. We are working closely with the Navy and USTRANSCOM on those plans. Lots going on.

The state maritime academies are no doubt excited about the prospect of new training ships – whether that means refitted existed commercial hulls or the NSMV – the National Security Multi-Mission Vessel – the groundbreaking new design especially brought out for that purpose. A lot has happened over the past 12 months – bring us up to speed:

As I mentioned, we have a Request for Proposal (RFP) out to solicit for a Vessel Construction Manager (VCM) who will deliver a purpose built, National Security Multi-Mission Vessel (NSMV). It is going to be a great ship. The VCM will leverage existing marketplace expertise and identify companies experienced in the production of innovative U.S.-built ships and contract with a qualified shipyard that ensures commercial best practices are utilized in building the NSMV; on time and on budget. We've designed a fine vessel, and have every confidence that our skilled U.S. shipyard workers, reflecting the best of American maritime engineering and ingenuity will deliver.

In terms of national response readiness, the need for the NSMV – a fleet of them in fact – is even more important. Tell us about the recent hurricane season events and where these ships fit into the national response picture:

As part of its mission, MARAD can provide numerous capabilities and resources before, during, and after significant domestic and international disaster events. In addition to the shipping capacity to get FEMA recovery supplies and vehicles to hard hit areas; once moored, the NSMV can provide power, housing, food, clean water and berthing for up to 1,000 first responders. NSMV comes with a roll-on/roll-off ramp and a crane to facilitate container handling that will enable it to provide critical supplies to damaged port facilities as well. MARAD dispatched three school ships and one RRF vessel for hurricane recovery support in 2017 and provided a total of 23,526 berthing nights (per person per night) and served 53,306 meals to first responders.

Dynamic Positioning (DP) training is becoming increasing important, increasingly mainstream and the Texas & AM Maritime Academy just introduced it to their curriculum. That's great news. What else would

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you like to see ramped up in terms of getting these cadets – in Texas and at the other six schools – ready for the next big disruptive event?

Dynamic Positioning has been around for a while now, so it is good to see this becoming a part of mainstream curriculum. That said; there are other emerging areas where our future mariners need to be better equipped. Certainly, we should be looking at increased use of technology, automation, and AI in shipping operations/business in general, but even more critical right now is to prepare all our future mariners in the realm of cyber security. With the high level of integration of shipboard control and operational systems found in today's ships – and the vulnerabilities that invites – we need to do a far better job preparing our young mariners to operate confidently and securely in that environment. Everyone – deckies and engineers – need to have a fundamental background in cyber security.

As important mariner training is at the deck plate level, it is equally important to engage the youth of today in order to make them aware of the employment possibilities that the maritime industry can provide. Is Marad involved with this effort today?

We do support several high school- level programs across the country, in addition to the previously mentioned college-level Maritime Centers of Excellence program that we are just getting started. It is extremely encouraging to see the increasing number of maritime schools nationwide, and I have visited several of them. Just the other day, I was in New York City to visit the Harbor School on Governor's Island, NY and participated in their 15th anniversary celebrations. It was great to see the enthusiasm in the faces of the students who were practically involved in vessel operations, marine biology, and several other maritime areas of interest. They were thriving on the water; the future of our industry right there!

Marine highway designations – how does an area or waterway get this recognition, and what does that label mean? Marad has 'an open season' on this sort of designation until 31 December 2018.

For a US waterway to be designated as a Marine Highway Route, a public entity such as a State or port authority applies to MARAD for designation, and it must be ap-

Secretary Elaine L. Chao swears in Rear Adm. Mark H. Buzby, USN, Ret. as the Administrator of the Maritime Administration.

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proved by the Secretary of Transportation. They explain the public benefits expected from creating new or expanding existing maritime freight services between two US ports. Designating routes is a way for the nation to see waterways as viable freight route, a valued part of our national transportation system, and one that has capacity to accommodate freight transport needs well into the future. Really, it's the only transportation mode with significant undeveloped capacity. We need to get on with developing that capacity in a thoughtful way. Application periods are open every six months and readers can find helpful information at **https://www.marad.dot.gov/wp-content/uploads/pdf/Webinar-Presentation-2017.pdf**.

You recently awarded grants to myriad small domestic shipyards. Can we expect that this funding will continue? Just how much of a difference does it really make for our all-important shipbuilding base?

Our nation's small shipyards are critical to maintaining the health and vibrancy of the Jones Act fleet. MARAD's Small Shipyard Grant Program provides assistance to help keep them competitive. It is a very popular program because of the significant benefits gained with the seed money provided through this program. There are tons of great success stories where smart investments in this program enabled small shipyards to jump ahead in capacity and capability and open up whole new lines of business – and more jobs. For a small shipyard, making capital improvements while operating in the margins is difficult. The importance of waterway infrastructure to our country's competitiveness cannot be underestimated, and the monies provided by Congress go a long ways in keeping these shipyards working.

Give us a sense of where our ready reserve and/or MSP fleets stand today. Are we ready for the next sealift event?

The 60–ship commercial MSP fleet is solid, operating well, and has the militarily useful ships we'd need in a sealift and sustainment scenario. Readiness of the government owned RRF is a constant challenge given that the average age of our vessels is 43 years, and 24 of them are steam vessels. Repairs and upgrades to older equipment and aging systems require shipyard periods lasting longer and costing more each year; but we are working with our partners – Navy and USTRANSCOM – to address the challenges of recapitalizing the sealift fleet to ensure mission readiness. I am also concerned about the availability of a sufficient number of qualified mariners with the necessary endorsements to operate large ships (unlimited horsepower and unlimited tonnage) and to sustain a prolonged sealift mobilization beyond the first four to six months. We need a larger peacetime employment base to ensure we have the manpower during times of crisis.

You made it a priority upon assuming your current role as Maritime Administrator to right the ship at the US Merchant Marine Academy. Tell us about where the nation's only federal maritime academy sits today?

The Academy is moving very strongly in a positive direction, and had started doing so before I even got on scene. This past year was one of the most successful in the Academy's history and was marked by many significant milestones; including the Academy receiving full reaccreditation by Middle States, reaccreditation of the Engineering program, and the Class of 2018 achieving a first-time pass rate of over 90% on their Coast Guard licensing examinations. We're anticipating progressively better performance as the Class of 2022 entered the Academy in June with outstanding qualifications. It also had the highest percentage of women ever. We had championship teams in just about every sport. We recently released the USMMA strategic plan for 2018-2023 called Navigating Towards the Future Together; that along with the "Be KP" culture change campaign developed by the Regiment of Midshipmen to strengthen the Academy's culture, will provide headings for developing leaders of exemplary character. Our Sea Year program is back on track and everyone is getting the sailing time they need. There is very much a positive vibe on campus these days.

What's been your biggest success so far as head of the nation's Maritime Administration? In what area can Marad do better? Why and how?

We can always communicate better, so I appreciate you giving me some print to talk a bit about what we are doing and where we are having issues. We've made some incremental progress in getting the word out to give a broader audience a bit better visibility on the state of our commercial shipping and how that impacts national security. We are upgrading our social media presence and trying to reach out farther. In terms of successes, I think that getting funding secured for the first NSMV (and hopefully more) was a big plus, as was getting an infusion of capital improvement funds up at Kings Point. There are some others – like the National Maritime Transportation Strategy – which are close, but not quite there yet. Lots of pots boiling – lots of great potential ahead.

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SUBM:

THE COAST GUARD IS STILL AN OPTION

Not all towing vessel companies are choosing Third Party Organizations (TPOs) for their Subchapter M compliance option. One size does not fit all.

By Kevin P. Gilheany

Under Subchapter M, towing vessel companies may opt to use TPOs to conduct their audits and surveys instead of inspections by the Coast Guard. While many companies are going the TPO route, many are opting for traditional Coast Guard inspections.

As a retired Coast Guard marine inspector, I have always advocated the Coast Guard option to our clients. There are no additional inspection costs, besides the annual Coast Guard inspection fees which all companies pay regardless of the compliance option. Additionally, a towing vessel company under the Coast Guard option does not have to operate according to a towing safety management system (TSMS). This does not mean that operating under a TSMS is a bad idea. In fact, some companies that choose the Coast Guard option for compliance under Subchapter M may operate under a safety management system with the same, or a higher, level of efficiency than those companies that choose the TPO option.

These companies still reap the benefits of a safety management system and are able to meet the demands of their customers and industry associations. The main difference is that those companies that have chosen the TPO option have voluntarily, in essence, given their TSMS the force of law. The Coast Guard made safety management optional for towing vessels despite great pressure from some in the industry to make it mandatory. Voluntarily making a TSMS mandatory for compliance comes with significant risk given the diversity of experience and opinions amongst auditors and vessel crews.

COAST GUARD OPTION REQUIREMENTS

Obtaining a Certificate of Inspection (COI) requires an operator to get their boats in compliance, conduct the required training, have a health and safety plan, and have a system to manage the operational, administrative, and record keeping requirements. Not having the paperwork in order can be just as problematic as not having the boat ready for inspection. According to early reports, not all inspectors are looking at paperwork yet, but many are. It is essential to develop a towing vessel record (TVR) in order to ensure compliance.

GREAT LAKES

One reason why some companies have chosen the TPO option is that they have not dealt with Coast Guard marine inspectors before and are apprehensive about what those interactions might bring. “Three or four years ago, we paid to have a TSMS developed because we were going with the TPO option because I was afraid of the Coast Guard and didn’t want them on my boats,” said Phil Andrie, owner of Ashton Marine, LLC. “But since then, we had the Coast Guard on our boats during some operations which made me change my mind, and we went with the Coast Guard option.” Ashton Marine is a small marine towing company out of Muskegon, Michigan.

Andrie of Ashton Marine was also apprehensive about the paperwork requirements, but reported that the Coast Guard inspector visiting their boat was very impressed with the

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"The scheduling of the inspections, and completing them, was surprisingly efficient. We followed the Coast Guard's process and did it within their 90 day window. The Coast Guard's pre-inspection package actually expedited and streamlined the process. We had no problem with scheduling and received all five COIs within five weeks. In fact, with the last vessel we received a COI for, from when we submitted the paperwork until we the received the COI, took less than two weeks."

– Mike Vitt, Bisso Vice President and General Counsel

TVR and said, "This is exactly what we need." Phil Andrie, who is also a licensed captain, said the TVR just makes sense. "Having it all on paper, which I fill out every time I get underway, helps me to learn exactly what I'm supposed to do."

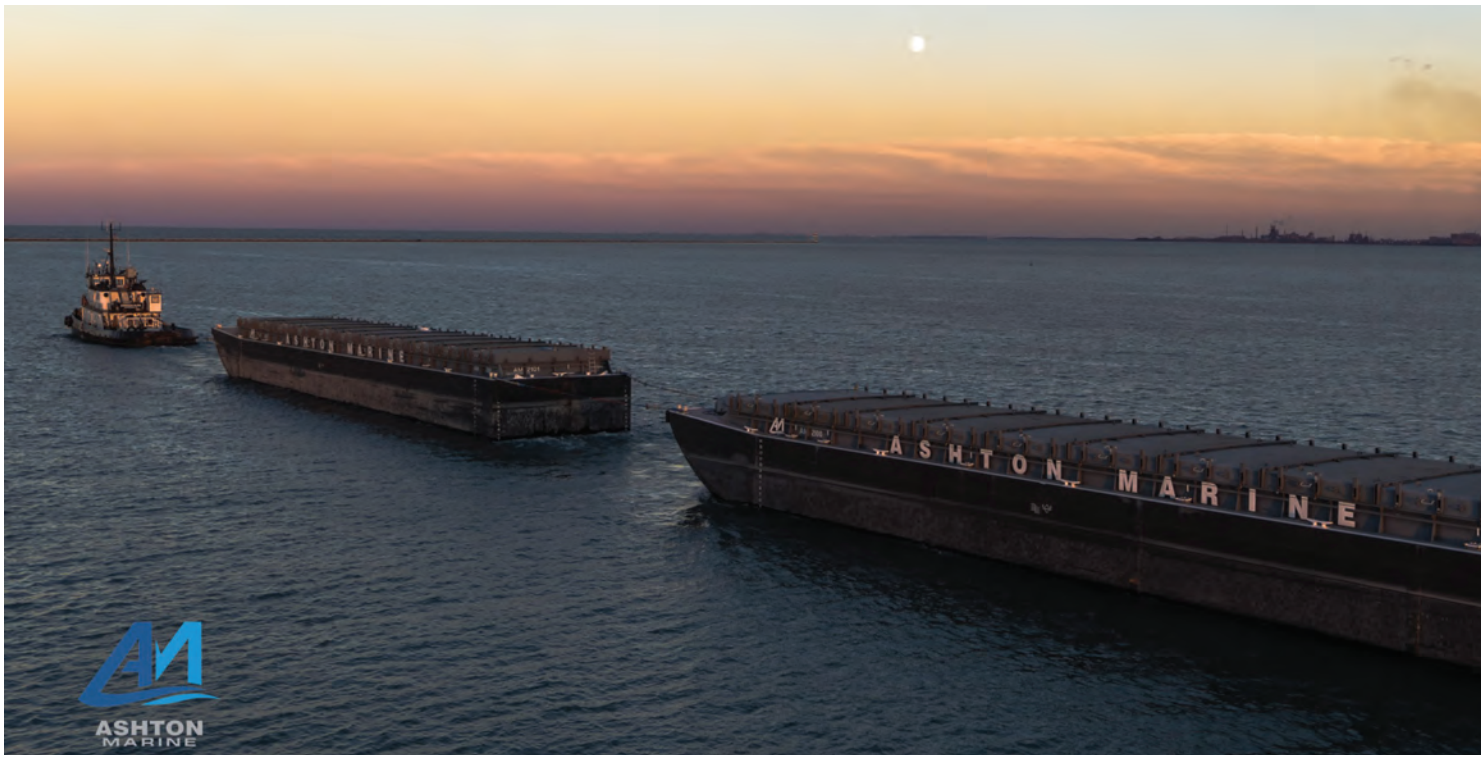
Ashton received a COI on the Candace Elise – one of the earliest issued on the Great Lakes – and reports that the inspection went well. They attribute at least part of this success to the help they received during Subchapter M meetings hosted by Coast Guard Marine Safety Unit Chicago, and the inspectors from Sector Lake Michigan, and Sector Field Office Grand Haven. Scheduling was not a problem for them at all. "I am very pleased with how everything went," adds Andrie.

GULF COAST

Separately, E.N. Bisso & Son, Inc., in New Orleans, has received five COIs under the Coast Guard option, including the first COI issued in the Eighth District, according to Coast Guard sources. They are also a long-time American Waterways Operators (AWO) Responsible Carrier Program (RCP) company in good standing and operate under an International Safety Management (ISM) system administered by ABS. Hence, they were prepared to go with either compliance option.

"Although we are AWO RCP members with ISM administered by ABS, and we are engaged and fully embrace safety management systems for the value they bring, we chose to go with the Coast Guard option because our operations are mostly local and the Coast Guard option seemed to be the most efficient route for obtaining a COI," said Mike Vitt, Bisso Vice President and General Counsel. He explained further, "We prepared for Subchapter M both internally and externally by having our consultants conduct Subchapter M regulatory compliance surveys on all of our vessels. The consultants also conducted pre-Coast Guard inspections on the operational and TVR requirements, which helped prepare our captains for the inspection program."

When asked about the inspection process itself, Vitt said,

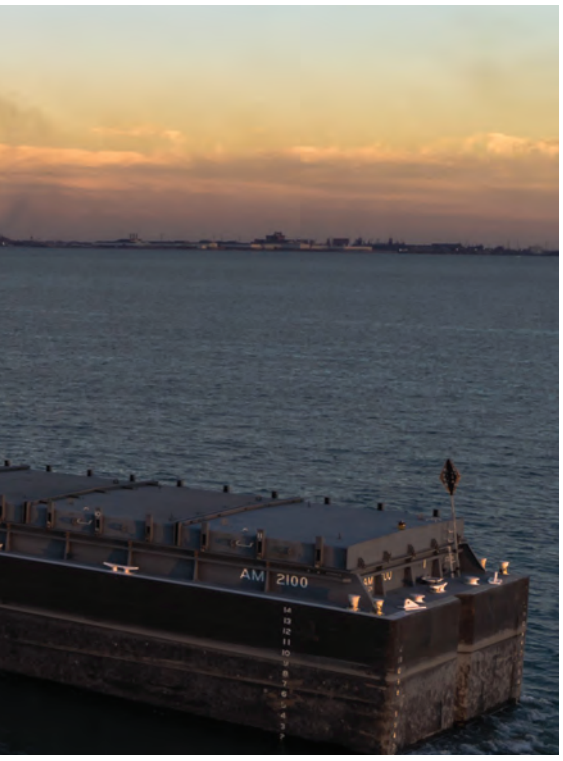


"The scheduling of the inspections, and completing them, was surprisingly efficient. We followed the Coast Guard's process and did it within their 90 day window. The Coast Guard's pre-inspection package actually expedited and streamlined the process. We had no problem with scheduling and received all five COIs within five weeks. In fact, with the last vessel we received a COI for, from when we submitted the paperwork until we the received the COI, took less than two weeks."

COAST GUARD DATA

Despite these positive reports on the Coast Guard option, one major concern for the industry remains unresolved. Stakeholders question whether the Coast Guard will have the manpower to accommodate all vessels wishing to use the Coast Guard option. That remains to be seen. That said; the U.S. Coast Guard reported that, as of the first week of October, a total of 119 COIs have been issued. Of that number, 79, or 66% have been obtained under the Third Party TSMS option, with the balance through the Coast Guard option.

Whichever route an operator opts for, operators should first gain a full understanding of all of the implications of both compliance options and not rely solely on a single source advice. Regardless of the option chosen, the vessel and crew have to be prepared and absolutely ready for inspection.



Kevin Gilheany *is a retired U.S. Coast Guard marine inspector and owner of Maritime Compliance International (MCI). MCI is not a Subchapter M TPO. MCI works directly with clients to prepare for Subchapter M, TPO auditors, and the U.S. Coast Guard, regardless of the compliance option chosen.*

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Spill Response Capabilities:
Important Then, Still Important Today

A greener, post-OPA 90 maritime industry has a markedly improved environmental signature, but still needs protection. SCAA members are there to help, when they do.

By Justin Thomas Russell


Russell

Not long after Col. Edwin Drake struck the first oil well in Titusville, Pennsylvania in August of 1859, logic would say that the first oil spill was not too far behind. Since that fateful time in western Pennsylvania, the world has seen changes in the size and scope of oil spills. And, as the global seaborne trade of crude oil continues to increase, with over 72,000 miles of pipelines transporting petroleum products in the United States alone, the need for comprehensive planning and professional response to incidents of a product discharge has never been greater.

It should also be noted that with the continuous exploration and development of offshore oil production associated with American energy independence and that over 90% of global trade is conducted utilizing the Maritime Transportation System, the risk of an oil spill in constant. And with that risk, the oil spill industry is an integral part of the safety and security of the maritime industry and the environment.

Maritime stakeholders, of course, are aware that the tragic 1989 spill in Prince William Sound, Alaska was a cornerstone for our industry. It was the catalyst that gave the petroleum and transportation industries the Oil Pollution Act of 1990 (OPA 90). This codified set of rules regulates operations and sets standards for the transportation of petroleum products. It also gave the world many now familiar terms such as Qualified Individual (QI) and Average Most Probable Discharge. It set standards that identify professional responders as Oil Spill Response Organizations (OSRO). It gave us the National Contingency Plan, Area Contingency Plans ... and their committees ... as well as Facility and Vessel Response Plans. But as we look at the impact this spill had on our future, some might say "it was only 11 million gallons."

What many outside our industry, and even some inside our industry, do not realize is that Exxon Valdez incident does not even rank in the top 10 biggest spills in our industry's history. As an example, the Ixtoc 1 spill in Mexico in 1979 involved 140 million gallons of spilled oil. The 1978 Cadiz spill in France was responsible for 69 million gallons discharged into the environment. The Desert Storm Oil Spill(s) in 1991 involved 380 million gallons.

The point is that for generations, trained and dedicated professionals have been responding to some of the largest oil spills in the world; long before the advent of OPA '90. And as a result of this long-standing tradition, our industry has set high standards for all organizations to deal with crisis management and emergency response.

Those involved with emergency response are aware that

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the Forestry Service (actually Cal Fire) invented the Incident Command System. However, it could be argued that the spill response community perfected it. Contingency Planning and Incident Management was largely perfected as a result of OPA '90. Now, DHS brings us the National Interagency Incident Management System (or the double 'i' NIMS). Even Homeland Security Presidential Directive number 5 was an official term for something our industry has been working with our government partners on: a robust Unified Command System.

With all of this in mind, the oil spill industry has come along way since the implementation of OPA '90. The industry has seen many OSROs come, and unfortunately ... go. Industry has also seen improvements in the way that it contains and even recovers discharged product. We have seen the advent of bioremediation and chemoremediation. Where we used to rely on T CARDS and whiteboards, we now depend on smartphones and tablets with cool tracking products like Oil Map and the GNOME Suite.

Nevertheless, the world changed yet again when the Deepwater Horizon incident spewed 206 million gallons of crude oil into the Gulf of Mexico. And our industry was there in force. Providing an armada of vessels, an army of responders, and a fleet of resources; implementing all of the lessons, tools and expertise that the industry has brought forth since 1990.

Yet, as is the case with many major milestones, change continues for the spill response industry. Organizations such as the Spill Control Association of America (SCAA) continue to work with our members and our Federal, State, and Local partners to ensure that proper regulatory requirements are set for the effective and safe response to the discharge of product into the environment. Through Partner Action Team meetings and other methods of dialogue, industry and regulatory agencies, in conjunction with other stakeholders, work in tandem to voice concerns, address issues facing response activities, and institute best practices for safety and recovery operations.

The professionals that make up the SCAA membership are at the forefront of the continuous development of new tactics and technology to effectively respond to, contain and recover product from both maritime and terrestrial events. From creating the latest in spill mapping and predictive software to producing environmentally sensitive absorbent products that minimize waste creation, from in-situ burning that effectively eliminates air pollution, and all the way to a cooperative effort with our government partners in the implementation of new recovery standards, our dedication to the environment and to best practices is inherent in what we do.

While OPA '90 was effective in drawing down the numbers of major oil spills since 1990, it has not eliminated the risk to the environment and the maritime transportation system. That risk is constant and omnipresent in daily operations. However, as long as that risk exists, the dedicated professional spill responders that work on a daily basis to remain at the highest levels of preparedness, the highest levels of training, and the most advanced practices involved in product recovery, the oil spill industry will continue to be a part of a solution that minimizes the impact to the economy and environment of affected areas. For those reasons, the oil spill industry will continue to be an integral part of the maritime transportation system.

Justin Thomas Russell *is Executive Director of the Spill Control Association of America. Russell has a proven record in spill response operations and management. He is a twelve year veteran of the United States Coast Guard and Coast Guard Reserve where he specialized in Marine Safety and Environmental Response.*

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CAUTIOUS CONSOLIDATION FOR OSV COMPANIES BRINGS MARKET CHANGE

Will a rising tide in the offshore oil markets float all the boats? In the U.S. Gulf of Mexico, that remains to be seen.

By Barry Parker

Offshore services, exploration and production are on a roll. In early October, yet another business combination of big drillers was announced. In a sign of optimism, Ensco announced its plan for an all-stock acquisition of Rowan Offshore, worth around $2.4 billion. The new company will be domiciled in the United Kingdom, but will have a large presence in Houston. That deal follows on Transocean's plans to acquire of Cayman Islands based OceanRig for approximately $2.7 billion (in cash and shares) as announced in early September.

As the outlook for the drillers has brightened in the investors' minds, the prospects for offshore service vessel providers have also improved. Early in the Summer, two U.S. companies (which had both come out of pre-packaged bankruptcies where previous debts can be restructured and converted into equity), announced that they would be tying the knot, with Tidewater International announcing its intention to acquire Gulfmark Offshore in an all-shares deal worth roughly $340 million (depending on share prices at the time of closing).

CONSOLIDATION: BUOYED BY OFFSHORE OPTIMISM

As these deals evolve, companies have stressed their worldwide geographic span, leveraging high end, state-of-the-art equipment. And, 'consolidation,' as these companies merge, looms large. Benefits are both operational (more scope, cost synergies) and financial (bigger companies are more attractive to investors). Mr. Turner Holm,

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"An ancillary benefit of this deal for both Tidewater and Gulfmark shareholders will be a larger and presumably more liquid equity currency. Combined, the companies will have a market cap of $1.25bn, by far the industry's largest. The improved size and liquidity all else equal should contribute to better valuation in our view as a broader set of investors will be able to play an OSV recovery…this equity currency may eventually allow the new Tidewater to engage in further consolidation at cyclical-low values and opportunities for additional cost savings."

– Turner Holm, Managing Director of Equity and Credit Research at Clarksons Platou

Managing Director of Equity and Credit Research at Clarksons Platou, wrote in a memo to investment clients highly supportive of the acquisition, "An ancillary benefit of this deal for both Tidewater and Gulfmark shareholders will be a larger and presumably more liquid equity currency. Combined, the companies will have a market cap of $1.25bn, by far the industry's largest. The improved size and liquidity all else equal should contribute to better valuation in our view as a broader set of investors will be able to play an OSV recovery."

More deals could be in the wind. Holm's memo continued, "… this equity currency may eventually allow the new Tidewater to engage in further consolidation at cyclical-low values and opportunities for additional cost savings."

Against the longer term backdrop of moving away from fossil fuels, in the medium term, measured in years, crude oil and natural gas demand are riding the cyclical demand curve upward. Prices have moved up sharply, bringing the optimism that underpins corporate acquisitions using shares. Economic growth and worries about possible supply dislocations and outages, linked to sanctions (against Iran), internal disruptions (Venezuela) and uncertainties about OPEC's ability to pull back the production throttle, have brought crude oil prices up to levels in the $80/barrel region (basis Brent). Analysts from reputable mainstream institutions have suggested that $100/ barrel crude oil is not out of the question, if the disruption stars align.

This oil services optimism, fueling the international deals, can also be seen closer to home. Earlier this year, the U.S. Department of Energy's Energy Information Administration (EIA) wrote, in its Energy Daily that: "U.S. crude oil production in the Federal Gulf of Mexico (GOM) increased slightly in 2017, reaching 1.65 million b/d, the highest annual level on record," adding, "oil production in GOM is expected to continue increasing in 2018 and 2019, based on forecasts in the EIA's latest Short-Term Energy Outlook (STEO). EIA expects the GOM to account for 16% of total U.S. crude oil production in each year."

When the dust clears on TDW-GLF, which might be later in the year (the proxy process is ongoing) GLF holders would end up with 27% of the combined company, to be branded as Tidewater. The entity would own 245 vessels (making it the world's largest), 173 of which were active in June. Of these, 38 were working in the Americas (including US GOM) in early Summer.

A look into the offshore future, taken from the joint TDW- GLF prospectus, filed in mid-October, projections made by Tidewater and Gulfmark, respectively, regarding their future operating prospects, tells a certain story:

TIDEWATER ESTIMATES					
	2018E	2019E	2020E	2021E	2022E
AVG Active	127	129	140	150	156
AVG Utilization	82.9%	88.3%	83.7%	84.1%	84.3%
AVG Day Rate	$10,034	$9,971	$10,797	$14,137	$17,491

GULFMARK ESTIMATES			
	2018E	2019E	2020E
AVG Active	40	45	51
AVG Utilization	74.9%	78.2%	81.8%
AVG Day Rate	$9,860	$11,548	$14,810

Source: https://www.sec.gov

In mid October, Tidewater and Gulfmark filed a joint definitive proxy statement and prospectus recommending the deal. A press release, issued by the two companies, said: "Both companies' Boards of Directors continue to unanimously recommend that stockholders vote "FOR" the associated proposals to effect the business combination as presented in the joint definitive proxy statement and prospectus." The companies will now begin sending proxies to shareholders, and they are anticipating a deal closing by mid November.

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FINANCIAL CONSIDERATIONS

Lazard, the financial advisor to Tidewater, performed an analysis of 12 "comparables", other listed OSV operators in various markets around the world, looking closely at various estimated financial ratios for 2019 and 2020, based on closing stock prices in early July. As revealed in the joint prospectus, they found the following for the group of comparable companies (see table below):

The paradox of exiting from Chapter 11 (especially the pre-packaged variety, where the details of converting old debts into new shares agreed in advance) is that company balance sheets are now un-levered, freeing up the capacity for new investments. Harvey Gulf International Marine (HGIM), the privately held U.S. offshore service provider (which had also been restructured in a bankruptcy proceeding- emerging in early June), offered an alternative suggestion to Gulfmark holders. In a non-binding unsolicited proposal, HGIM expressed a willingness to negotiate with GLF, and, if its offer was determined to be superior to that of TDW, take control through a "reverse merger" (where a private entity acquirer buys into an already listed entity). This proposal was turned down by Gulfmark's Board.

Another listed company in the sector, Hornbeck Offshore Services (HOS) has stayed out of the M&A fray, at least so far. While it did not enter bankruptcy, it accomplished an important refinancing in June 2017, and its shares have steadily risen throughout 2018. In its mid July earnings call reporting Q2 results, the company's Chief Financial Officer pointed to a better than anticipated Q2 result, informing call listeners that clouds had cleared temporarily "We were simply able to capitalize on a temporary swing in the supply demand equilibrium due to U.S. flag vessels leaving the Gulf of Mexico for other opportunities in this hemisphere, coupled with a typical seasonal uplift. This allowed us to briefly pushback rates for our HOSMAX vessels in the Gulf of Mexico during the second quarter."

However, in the same call, Chairman, President and CEO Mr. Hornbeck took a very cautious tone about the market outlook in the Gulf of Mexico, telling investors, "Short-term fixtures for drilling units will continue to rule the day and should produce modest demand for vessel services – but the market will remain very much in a transitional stage for drillers, many

NAME OF RATIO	Low	High	Mean	Median
2019 enterprise value to estimated EBITDA	7.3x	20.9x	13.7x	13.7x
2019 net debt to estimated EBITDA multiples	5.7x	25.4x	11.5%	9.0x
2020 enterprise value to estimated EBITDA	5.9x	15.7x	8.7x	7.4x
2020 net debt to estimated EBITDA multiples	3.1x	9.7x	5.8x	5.8x
HISTORICAL (2010-2020) book enterprise value to estimated EBITDA	4.8x	10.5x	6.9x	6.7x
HISTORICAL (2010-2020) mkt. enterprise value to estimated EBITDA	4.8x	10.3x	6.6x	6.1x
Memo: *multiyear enterprise value (book) for Tidewater= 4.4x EBITDA for Gulfmark = 6.4x EBITDA using estimates from Wall Street analysts (using Tidewater estimates for base case EBITDA gives a different result).*				
Memo: *multiyear enterprise value (market) for Tidewater= 4.4x EBITDA for Gulfmark = 6.4x EBITDA using estimates from Wall Street analysts (using Tidewater estimates for base case EBITDA gives a different result).*				

Source: https://www.sec.gov

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of which would prefer to preserve their optionality by not committing their assets to long-term contracts before rig prices improve. That dynamic effects our short term acutely."

A RISING TIDE: WILL IT FLOAT ALL THE BOATS?

During the summer, optimism was returning, with rig utilization fueling demand for OSVs. Offshore brokers Seabreeze, quoting data from IHS-Petrodata, advised their clients that September 2018 rig utilization in the U.S. Gulf of Mexico (USGOM) stood at 47.2%, up from 35.1% a year earlier. Data provider Platts, measuring utilization slightly differently, pegged early October 2018 utilization of rigs in the USGOM at 50.8%.

Such figures do not tell the entire story. Like other maritime markets, offshore oil values high spec equipment, and sophisticated boats (such as Harvey's LNG powered boats and heavy lifters, and Hornbeck's DP2 and DP3 multi-purpose supply vessels) earn premiums. On the HOS conference call, CEO Todd Hornbeck said: "In May, we closed acquisition of four high spec OSVs from Aries Marine Corporation and are satisfied with the manner – in the manner in which we have been able to quickly integrate these assets in former Aries Marine into our fleet … All four vessels are now operating in the spot market in the Gulf of Mexico and our other core markets. Overall, we are very pleased with the vessels and believe that they will be added to our high spec fleet of DP2 Jones Act vessels going forward."

At the same time, an ongoing issue concerns the applicability of the Jones Act (which requires U.S. build/ crewing/ ownership) for boats operating in the U.S. Gulf of Mexico, with Todd Hornbeck telling investors on his call, "We believe foreign operators are unlikely to commit the MPSVs to this region given the legal challenges currently underway involving vessel activities, and their compliance under the Jones Act." Hornbeck also offered, "Litigation on that front is continuing in the D.C. circuit court and we could see some common rulings issued late this year."

In October 2017, a suit brought by two trade groups and a mariner, "RADTKE et al v. U.S. BUREAU OF CUSTOMS & BORDER PROTECTION et al" began working its way through the court system. In this case, the plaintiffs (including Shipbuilders Council of America and Offshore Marine Service Association) have asked the Court to overturn various Customs Border Protection rulings interpreting the Jones Act in a way that's favored foreign vessel owners. For Jones Act OSV owners, favorable rulings could provide a lid on overall supply, pushing their utilization numbers up.

IN THE LONG RUN

Alternative energy sources are in the news, but fossil fuels will be around for a long time. Over the longer term, measured in decades, the Class Society DNV GL, in its 2018 Energy Transition Outlook, says that: "Oil demand will peak in the 2020s and natural gas will take over as the biggest energy source in 2026." They added, "Existing fields will deplete at a faster rate than the decrease in oil demand. New oil fields will be required through to 2040." With the improved price outlook throughout 2018, prospects have brightened for businesses that serve oil drillers and producers, including in the offshore segment of the marketplace.

In U.S. markets, particularly the Gulf of Mexico, concerns remain that the sheer volume of laid up tonnage will continue to keep day rates low, especially when the prevailing mood of owners is to resist the calls to scrap the oldest of these support vessels, even though some analysts (VesselsValue and Alix Partners among them – see our BY THE NUMBERS analysis for this edition) say that many of these stacked vessels are out of class and the costs to bring them out will be prohibitive. Add to this the surprising ability of U.S.-based shale producers to dramatically reduce their costs to achieve profits even in a market where crude oil pricing dipped to $40 per barrel, and it can be seen that real challenges remain ahead for the offshore support sector.

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

A glimpse into the U.S. Gulf, through the Hornbeck Offshore Services lens, shows gradual improvement as 2018 rolls into the third quarter.

Offshore Supply Vessels / 2018	June 30 2018	March 31 2018	June 30 2017
AVG Number of new generation OSV's	63.9	62.0	62.0
AVG Number of active new generation OSV's	22.7	18.0	20.7
AVG new generation fleet capacity (DWT)	228,925	220,072	220,172
AVG new generation OSV capacity (DWT/vssl)	3,583	3,550	3,551
AVG new generation utilization rate	27.0%	20.7%	22.3%
AVG new generation day rate	$19,566	$17,985	$17,202
Effective day rate (adjusted for util.%)	$5,283	$3,723	$3,836

Source: Hornbeck 2018 Q2 results


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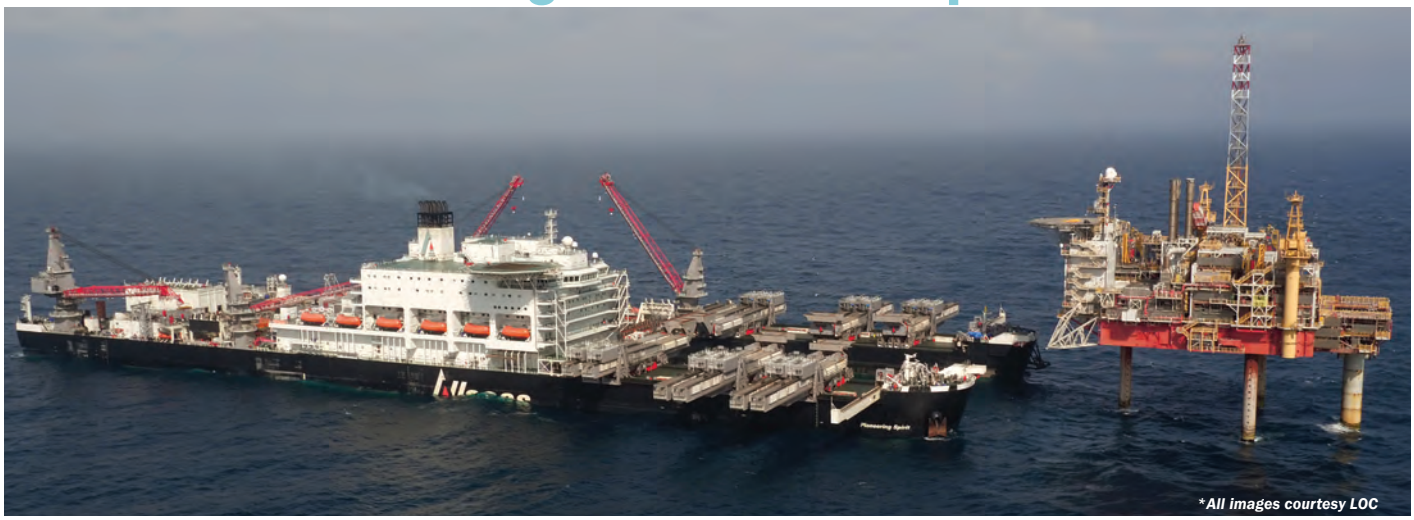
Decommissioning Gets into Deep Water in GoM



*All images courtesy LOC

LOC Group's Houston office provides perspective on decommissioning developments in the Gulf of Mexico.

By David Ballands

The Gulf of Mexico basin covers approximately 1.6 million km^2 and is one of the most important petroleum production regions in the world. A significant portion of the area is shallow continental shelf waters. These areas were developed first by oil companies, with deeper water development only being undertaken once the 'easier' sites had been exploited.

Many years on, numerous shallow water platforms have been successfully decommissioned and the industry is starting to view the deep-water sites with a view to the same.

GoM Decommissioning Trends

Established in London nearly 40 years ago, London Offshore Consultants (LOC Group) is an international, multidisciplinary organization with over 30 offices worldwide and more than 400 qualified professionals. Alan Clifton, LOC's Operations Director has more than 35 years of experience in all aspects of offshore and onshore construction. As principle Marine Warranty Surveyor (MWS) he has approved operations – transportation, installation and decommissioning – both onshore and offshore, all around the world.

Clifton recently relocated to LOC's Houston office from LOC's Norwegian office where he previously was covering decommissioning operations in the extremely difficult environment of the North Sea. In September, he weighed in on both the history and future of Gulf of Mexico decommissioning operations.

Clifton explains that until recently, decommissioning has not been a "headline" consideration in the Gulf of Mexico. Shallow water decommissioning has been relatively routine, with topsides and jackets being removed and brought to shore for scrapping or re-purposing, or in the case of some jackets, purposefully sunk to form artificial reefs, which provides sanctuary to marine life and flora and fauna in the area.

Over the last 20 years, LOC's focus has been predominantly on the installation of new facilities in the Gulf. LOC's Houston office has worked on the installation of many deep-water projects and fixed platforms, including TLPs, Spas, FPSOs, and subsea installations, while the LOC Tampico office has concentrated on shallower water projects in Mexican waters.

This is starting to change. A number of the platforms in deeper water are reaching the end of life stage and decommissioning will soon become necessary. The process of decommissioning these larger and deeper water platforms will be more complex and require more detailed and engineered solutions to plan and execute such operations safely and effectively.

"Decommissioning is a slowly growing market," said Alan, adding, "We are in conversation with several oil companies about future projects, but the timescale is un-

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"Nowadays, companies looking to decommission a structure want to be seen as a responsible and 'good' business. Oil companies' reputation is now uppermost. Lessons have been learned from experience around the world and with a strong and vigilant environmental lobby, companies are approaching the process very differently."

– Alan Clifton, LOC's Operations Director

certain. In common with operators all around the world, the exact decision to decommission depends on many variables – with the price of oil worldwide, the price and availability of oil and gas from onshore fracking, and increasingly stringent regulations – all influencing the decision. It costs money to decommission a platform and so no operator wants to launch a costly process if they don't have to in uncertain economic times."

But he says that the industry's focus has also shifted significantly since the Deepwater Horizon disaster, adding: "Nowadays, companies looking to decommission a structure want to be seen as a responsible and 'good' business. Oil companies' reputation is now uppermost. Lessons have been learned from experience around the world and with a strong and vigilant environmental lobby, companies are approaching the process very differently."

Looking Back

The decommissioning of the smaller platforms in the Gulf of Mexico has generally involved smaller equipment which is already located in the region, along with readily available and well developed local expertise. The decommissioning of larger and deeper structures will require larger equipment which is not necessarily locally based and will require additional complex planning and execution.

LOC has worked on many of the early decommissioning projects through to the recent removal of the YME Platform topsides in the North Sea, providing marine advisory services through the numerous project phases to the final MWS approval for the removal. The YME project was the first use of the "Pioneering Spirit" – the world's largest offshore construction vessel, designed specifically for single lift installation and removal of large oil and gas platforms. In addition to lift removal, LOC has over the years also worked with a number of other innovative removal methods, including the re-floating of an entire steel gravity-based platform complete with its topsides, and removal of jackets by attaching floatation tanks and de-ballasting to float the unit after leg cutting below seabed level. In all cases, the re-floated units were then towed to an inshore disposal site. Many valuable and unique lessons were learned during these operations.

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Deepwater

For the decommissioning and removal of a deep-water platform the methodology, engineering, and procedures are all key areas of focus in the removal design process, and all aspects are likely to be commensurately more complex than for smaller shallow water platforms.

Looking forward, Alan anticipates that many of the techniques likely to be applied in the Gulf of Mexico will be tried and tested, with little call for new innovations. He explains that innovative practices can often turn out to be prohibitively expensive, as was the case in the early days of decommissioning. New methods can be viable if there are many similar platforms to remove and dismantle, but in the Gulf he expects it's likely to be done on a platform by platform basis, with evolution of existing techniques rather the development of completely new ones.

Today, more offshore structures are being removed than installed in the Gulf of Mexico and the contractors who historically would normally focus on installation are increasingly looking at decommissioning as an area of business. They have the capabilities and the equipment, which just need to be adapted and utilized differently to meet decommissioning and removal project requirements.

Clifton says that the key driver for decommissioning in the region will be, as it is in all other areas of the world, cost. It's an unwelcome cost for oil companies and straightforward, trusted methods are likely to be favored. This will offer good opportunities for both local and international contractors to be involved, building on existing knowledge to develop their service offering, as more and more structures face the same process.

***David Ballands** is LOC Group's Regional Director for the Americas, covering LOC's offices in Canada, the USA, Mexico and Brazil. David is one of LOC's most senior civil engineers, specializing in the transportation and installation of offshore structures and the investigation of fixed object damages.*

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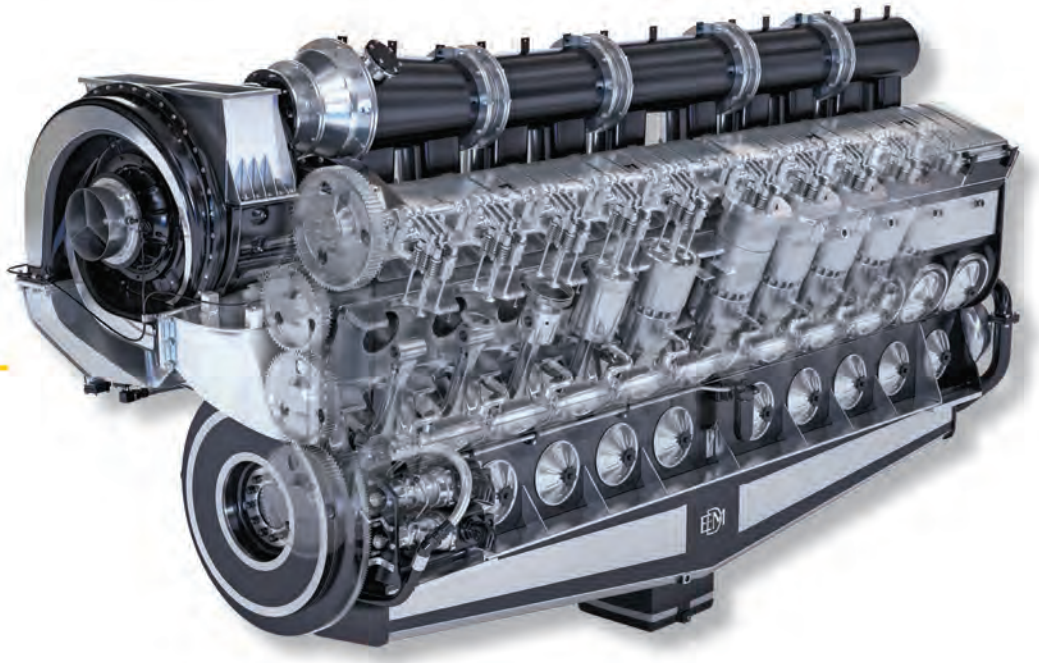

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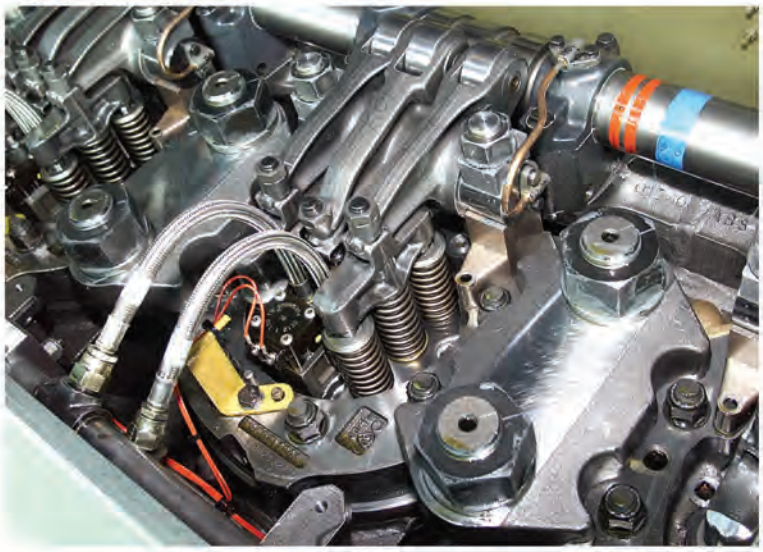

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Regulatory Reform: Good Ideas ... Ready to Start?

Regulatory reform is one of President Trump's priority agenda items. Upon taking office, the President issued a number of Executive Orders focusing attention and demanding action on the myriad of regulations impacting American businesses.

By Tom Ewing

Last May, the reform spotlight fell on maritime regulations when the White House Office of Management and Budget (OMB), published a Request for Information (RFI) on how the government should "prudently manage regulatory costs imposed on the maritime sector." OMB, via its Office of Information and Regulatory Affairs (OIRA), is interested in change, in how existing regulations could be modified or even repealed to increase efficiency, reduce or eliminate unnecessary or unjustified regulatory burdens or simplify compliance "while continuing to meet statutory missions"

The effort also seeks to maintain the public benefits which were the reasons behind the regulations in the first place. Importantly, this was a 'big picture' effort. OMB's May RFI noted that "although some agencies that regulate the maritime sector have previously sought regulatory reform ideas, this RFI seeks broader input on regulations across all agencies regulating the maritime sector."

Originally, OMB set a July 16 deadline for comments. That was extended to August 30. By that date 118 organizations and individuals responded. Within the RFI, OMB wrote that while all comments were welcome, OIRA staff was particularly interested in regulations in four core areas:

- *Interagency reform cutting across all the nine cabinet level agencies which oversee maritime operations.*
- *International insights, i.e., regulations and requirements of other countries, particularly Canada and Mexico, in shared bodies of water.*
- *Cargo regulations.*
- *Passenger vessel regulations.*

OMB received a lot of input. Importantly, though, some of those well-intentioned ideas may not advance if they don't align with OMB's core areas of interest. The following narrative presents just a small sample of what maritime stakeholders had to say, but these references exemplify the wide range of issues impacting maritime businesses, they are issues within OMB's focus areas and, importantly, are chief concerns cited by many maritime companies and trade groups.

Passenger Vessel Spotlight

Hornblower Group is a passenger vessel operator headquartered in San Francisco. For Hornblower, manning requirements are top issues. Hornblower writes that passenger vessel manning requirements are "so complex that even more time (than OMB's comment deadline) is needed for a comprehensive analysis to identify specifically which laws/regulations/policies need to be changed."

As an example, Hornblower points out that the minimum crew required to operate vessels larger than 100 gross tons is double the minimum crew required for vessels less than 100 gross tons. Hornblower contends that tonnage is a singular measure, not fully, nor accurately, presenting the reality of operational issues; tonnage does not accurately reflect a vessel's operational profile.

Most of Hornblower's concerns fall under U.S. Coast Guard purview but it does cite one interagency issue: the U.S. Environmental Protection Agency's (EPA) annual vessel general permit (VGP) reporting. Hornblower references a CG-EPA MOU for VGP compliance. Despite the MOU, however, EPA also requires an annual report. Hornblower calls this double-reporting redundant.

Separately, San Francisco-based Red and White Fleet focuses on vessel construction, suggesting that changes to MARAD's 46 CFR Capital Construction Program rules, which R&W calls "outdated," would yield big benefits. R&W's maintains that existing MARAD rules inhibit new vessel construction, impacting maritime employment, American steel markets and the broader economy. "When the 46 CFR rules are updated," R&W predicts, "there would be an

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Broad Based Concerns from Myriad Stakeholders

Crowley is a maritime transportation and logistics company based in Florida. Crowley lists five broad concerns, including:

- *Vessel incidental discharge management, with VGP a main issue causing "complexities and duplicative regulations that are not necessary and do not enhance environmental protection in any meaningful way." Crowley notes that the current VGP expires in December, but a new permit is not ready.*
- *Federal Maritime Commission filing requirements for vessel-operating common carriers which Crowley describes as a time-consuming and duplicative process for companies, contractors and agency staff.*
- *TWIC – the transportation worker identification credential, intended to enhance security but presenting significant compliance costs. Crowley supports a recent delay regarding certain TWIC technology, calling it a chance for Congress and regulators to clarify TWIC demands.*
- *The Jones Act: leave it unchanged, Crowley advises.*
- *Finally, "federal preemption" – the basic idea that when federal and state laws conflict, federal law preempts state law. Crowley notes a Supreme Court case in 2000, cited as US vs. Locke, in which the Supreme Court unanimously supported federal preemption regarding operation and manning of tank vessels, even when transporting oil in a state's waters. "Despite the ruling," Crowley writes, "states continue to pass laws and enact regulations governing vessel operations that conflict with federal law. This creates a confusing legal and regulatory environment in some states that requires unnecessarily burdensome, costly and time-consuming measures to ensure compliance."*

The Great Lakes St. Lawrence Governors & Premiers (GLSLGP) is a US-Canadian regional maritime organization, obviously familiar with shared bodies of water, another OMB focus. Their comments focus on Great Lakes pilotage rates. GLSLGP writes that pilotage services are dominated by three private companies operating "without sufficient oversight and accountability" and that these costs are "a major impediment to current competitiveness and future growth."

GLSLGP wants the US to undertake a "comprehensive review of the US Great Lakes pilotage system. The overall goal must be maintaining safety and reliability while improving transparency, accountability, and cost competitiveness." GLSLGP describes a "toxic environment between the Coast Guard, system users, and the pilotage associations." Their concerns, not unlike those now playing out in places like Galveston and Houston, Texas, reflect similar struggles on all four of the nation's maritime coastlines.

GLSLGP compares the current pilotage rate situation to a regulated monopoly, but absent the offsetting benefit of public utility commission oversight. It suggests that the US review and analyze "the costs and benefits of eliminating the regulated monopoly system; deregulating the system; and introducing market forces and competition in service delivery." GLSLGP notes that Canada has conducted a "comprehensive review of pilotage services." It notes that deregulation in air service and railroads has resulted in cost savings and economic benefits.

Comments from the A.P.Moller-Maersk Group offer insight into crisscrossing, overlapping agency demands, from Clean Air Act issues all the way to a suggestion to forgive student loans for U.S. Merchant Marine graduates who

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Credit: Petty Officer 3rd Class Andrea Anderson

Ensign Patricia Carrow, a Coast Guard vessel inspector, examines a passenger vessel's operational, mechanical, and safety systems during an annual inspection in Long Beach, Calif. on Dec. 7, 2016. The Coast Guard inspects every operating passenger vessel for safety and regulation standards annually.

stay on the job for 10 years after graduating. "This will help with recruitment and retention," M-M writes. Some other major M-M concerns include:

• *Ad Valorem tax – repairs made (Vessel Repair Statute at 19 USC 1466) in foreign ports are hit with a 50% duty payable when the vessel returns to the US. M-M's comment: "This does not change foreign purchasing/repair decisions due to lack of competitive alternatives and similar reasons." M-M suggests – eliminate this costly, competitive disadvantage for US Flag operators.*

• *Redress the Jones' Act "featherweight" standard re employee injuries (46 USC 30104). M-M suggests that going to a workers-comp type system would better serve injured parties and employers.*

• *The Reimbursable Service Program (RSP). Due to significant growth, M-M expanded gate times in Mobile, generating new revenues, including government payments. Still, fees for the Custom and Border Patrol (CPB) Reimbursable Services Program went up by $1000/week, fees likely to increase as business improves further – not really an incentive for expansion. M-M's suggestion: end that RSP fee structure and make up revenues from other increasing tax payments. This is just one example of problematic CPB rules impacting maritime businesses. Another M-M concern is CBP fines and penalties for accidentally mishandling or releasing a container, difficult to avoid considering the million of containers shipped within the US.*

• *Federal and state ballast water policies and uncertainties with EPA's VGP requirements. Like Crowley, M-M notes that the next 5-year permit renewal must be in place by December, 2018.*

Regulatory Clarity? Anything but ...

One important inter-agency regulatory move that will not advance as planned is the set of issues linked to EPA's Vessel General Permit, or VGP3; the third iteration of the water pollution discharge permit for marine vessels. VGP is surely a priority for executive level directives about regulatory efficiency, undue regulatory burdens and simplifying compliance.

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The current five-year vessel general permit expires December 18. EPA was supposed to present a new draft permit early in 2018 – didn't happen, and it won't happen because on October 11 EPA announced that it was kicking this can down the road when it announced that the Vessel General Permit "will not be reissued prior to its December 18, 2018 expiration date but will be administratively continued and remain in effect until a new permit is issued." EPA writes that vessel owners/operators need to continue to comply with the terms and conditions of the "administratively continued" permit. However, after December 18 even an "administratively continued" permit will be unavailable, but, of course, still required. But the Agency does say that it "stands ready to assist those applying for VGP," which you have to have by December 18. How's that for regulatory clarity? In the meantime, EPA's new timetable for VGP3 is Spring 2019.

Over the Horizon

Since the close of the comment period at the end of August, OMB is likely reviewing all comments. Unfortunately, OMB staff would not respond to questions about how long their review might take or, more importantly, their schedule to actually follow up with actionable proposals. Just as important is who will be in charge of this interagency regulatory house-cleaning; obviously, the higher the rank the more likely the chances for far-reaching reforms paying the biggest dividends.

OMB's May 2018 request for comments stated that it "intends to communicate regulatory reform suggestions suggested by the public to the RRTFs (regulatory reform task forces) at the appropriate federal agencies for their consideration and to aid the agencies in the coordination of interagency streamlining of regulatory requirements." Hopefully that communication – and focused oversight – gets started sooner, not later. Stay tuned.

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

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Outfitting the Modern

Credit: MetalCraft Marine

MetalCraft Marine's 10 Meter Interceptor model is a formidable workboat. Defined by the sum of its myriad parts, it really can be seen that 'the equipment makes the boat.'

By Joseph Keefe

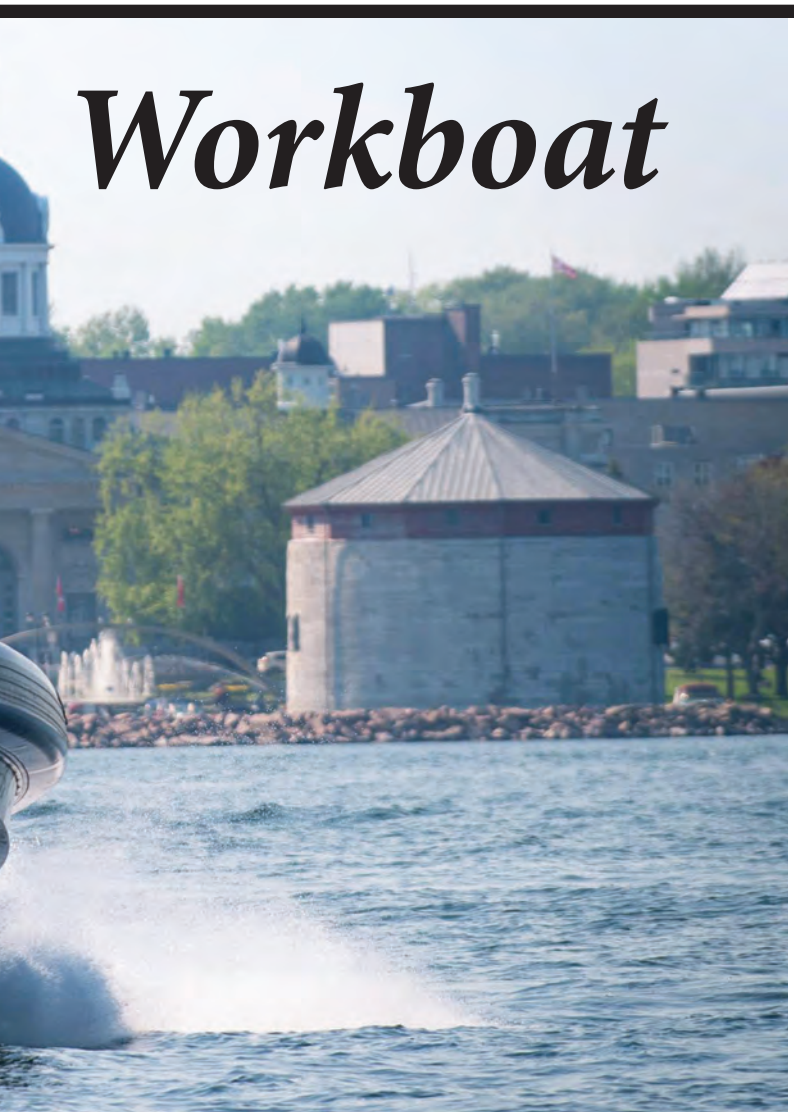
In a business where there is rarely any shortage of pretty boats, cutting edge designs and equally impressively performing workboat tonnage, it is also true that the real value to any design is cemented by the very equipment that makes it run. Typically, however, comparing apples to apples when it comes to selecting your next patrol, fire, SAR or pilot boat is almost impossible. Until now.

Kick the tires. Pop open the hood. Put this one up on the jacks. Spend a little time under the chassis. The MetalCraft Interceptor line has been around since 2013, proven time and time again, and the firm has more than 50 orders – coming and already delivered – of this versatile craft that comes in various sizes from 7 to 12 meters. Their newest entry, the Interceptor 10M is the first stealth-designed high-speed small craft for Navies, Coast Guards and Police agencies. It is maneuverable, rugged and reliable, and suited to a wide range of applications like search and rescue, special operations, and patrol.

The Interceptor 10M standard configuration at a glance …

Maximum Speed: 42 Knots	BOA: 11 feet – 1 inch	Weight: 11,500 pounds
LOA: 32 feet – 7- 5/8 inches	Draft: 20 inches	Fuel Capacity: 148-200 US Gallons
Air Draft: 11 feet - 5/16 inches	Capacity: 12 people	Power range: 400 - 700 HP

Workboat



Window Shopping

According to MetalCraft, the most critical aspect of any workboat for the prospective operator, is good application engineering. Putting the right equipment together is what MCM's design team is all about.

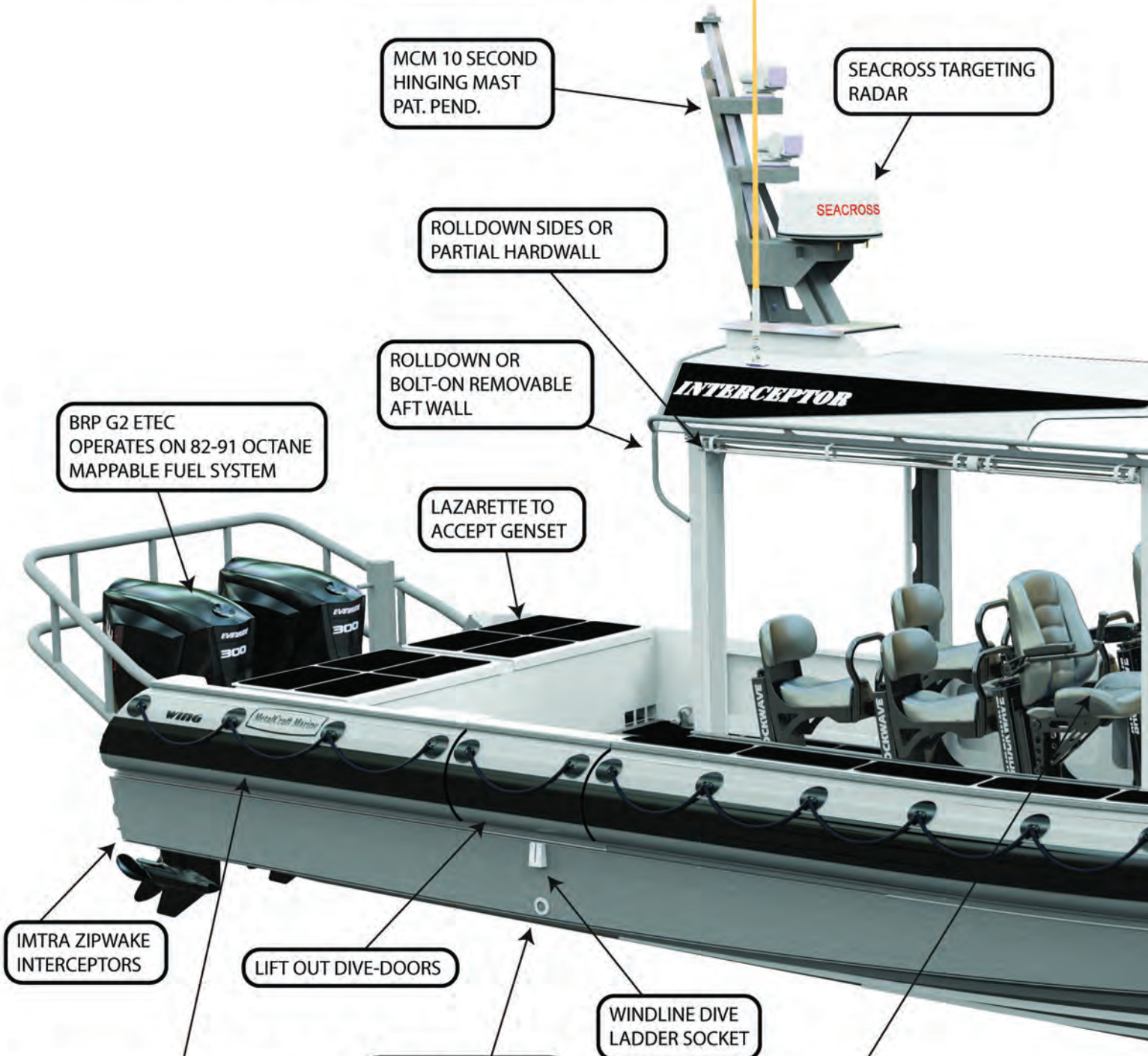
The latest addition to the MetalCraft Interceptor line is the 10M Fast Attack cabin model. MetalCraft partnered with a number of key OEMs to bring about a next gen 'Modern Work/Patrol Boat.' The boat features 6'10" in headroom in the cabin and 5'11" headroom to allow for helmeted crew heights and roll up Eisenglass sides or any version of metal sides/aft wall. The cuddy can be set up with twin berths, galley and head.

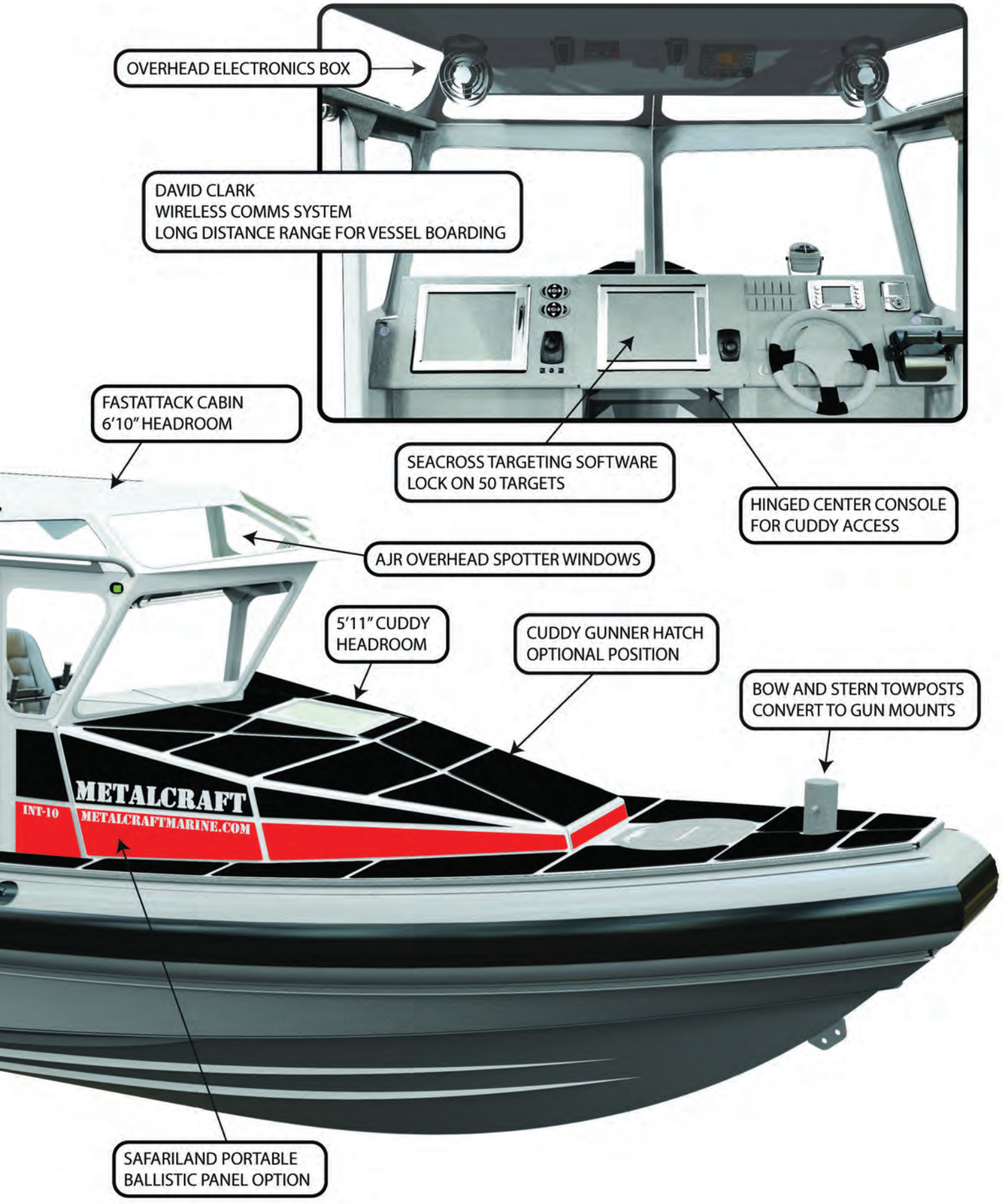
Under the Hood

So, what makes up this version of the 10M Fast Attack cabin model? Go ahead; check under the hood for yourself:

- ***Safariland*** *provided a portable ballistic package as used by the USCG 11M Interceptor, which can be mounted in 8*

METALCRAFT MARINE
10M FAST ATTACK INTERCEPTOR

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- ***David Clark** supplied the 9100 Wireless comms system. The system installs very quickly and provides wireless crew communication as well as interfaces with VHF, Cell phone and emergency radio frequencies. David Clark offer a 3-5 year limited warranty on the system.*
- *The **Wing** inflatable D collar allows the operator to come alongside with control over side impacts by adjusting the amount of air pressure in the collar. It auto inflates and deflates making the boat road legal in minutes as you deflate while loading onto the trailer. Wing built the removable lift out port and starboard dive doors for dive or rescue operations. Wing Inflatable offers a three year warranty on their collars.*
- *The **Imtra** underwater lights are stationed at each dive door to help divers navigate in tepid water to the proper side in use, and they also help divers when coming alongside to adjust or change gear in the illuminated water. Imtra underwater lights offer a 60 degree down angle for their dive lights.*
- *The dive ladders socket and dive ladder are manufactured by **Windline**. The ladder is 48 inches long with rubber foot grips and floats in case it is dropped overboard. The ladder locks into the ladder sockets and are set at a 30 degree angle for ease of exiting the water with gear on. They are rated for 400 pounds.*
- *This version of the boat powered with twin **BRP** G2 ETEC outboards. As two stroke engines, they have an amazing burst of power when throttled up and offer auto trim or manual trim feature. The engine's opening side panels permit easy access to water and fuel pumps and operators can change the oil while the boat is in the water. The G2 has amazing fuel economy at approximately 17-20% less than comparable four stroke engines and are 100 pounds lighter per engine for the same horsepower. The engine has the ability to be adjusted to run on lower or higher octane fuels, hence they are a great choice for areas where high octane fuel is not available. Perhaps the best feature of this two stroke technology is that the engines only require servicing every 500 hours. BRP offers a three year warranty on the entire engine.*
- *The boat has further auto trim with the **Imtra Zipwake** Interceptor trim tab system. The Interceptors adjust automatically to raise the stern and improve hole shot angle and reduce fuel in the process. The controller has a built in Gyro that adjusts the boat from side to side if the load and/or crew becomes unbalanced. The controller can be preset by the user or use auto settings based on vessel trim. MetalCraft reports good success with this system, something which they have added to boats of up to 70 feet in length.*
- *The lazarette box aft is a great storage area and is large enough to hold a **Westerbeke** 7.5 KW gas or diesel genset. Water pickups and exhaust system are mounted in the lazarette as well for ease of service.*
- *The large aft deck has full length deck tracks for the **Shockwave** S2 and crew folding Jockey seats. This allows the seats to slide into a configuration that is best suited for cargo carriage or best suited for returning enemy fire. The seats are easily removed if only clear deck is required. The cockpit tracking also has adjustable tie down sockets.*
- *The **Seacross** targeting software for radar/chartplotter screens allow touchscreen targeting for up to 50 targets by simply touching the suspect highlighted on the screen. Operators can select their own colors for the targets to identify them as they wish.*
- *Last, but certainly not least, MetalCraft has designed a fast and easy one man hingeable radar mast (Patent pending) that can be lowered in 9 seconds and raised in 10 seconds by one man, while underway. At long last, low bridges are not an issue.*

Impressively Equipped, Off to a Hot Start

MetalCraft Marine was born in 1987 and has continually grown throughout the years, carving out a strong niche in the North American commercial boat industry. MetalCraft introduced the ten year hull warranty in 1987 for commercial boats and now, that standard is becoming a require-

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ment on most government procurements. A GSA approved supplier since 1996, MetalCraft has specialized in world-class, high-speed fire and crew boats for over 30 years.

The Interceptor line has allowed MetalCraft to greatly expand its product range into the tactical and enforcement communities. The USCG Long Range Interceptor, an 11 boat contract for high-speed interdiction, enforcement, and SAR missions, started the transition into this new market. Since the LRI development, and the successful delivery of 19 9M Interceptors to two elite military groups, the line has grown rapidly in popularity and success. With fireboats at its very roots, the firm has continued to integrate fire systems into its Interceptor boats, allowing for greater mission capability. As the popularity of this type of hull increases – within MetalCraft and its many competitors – the need for multi-mission capabilities has also grown.

MetalCraft set out to build the most mission capable boat, that is configurable to meet the needs of a vast array of end users, yet was cost effective to customize and construct. The 10M Fast-Attack Interceptor, as exhibited at this year's Multi-Agency Craft Conference (MACC), is modular, actively configurable, and, as noted above, is chock full of impressive equipment.

The 10M Fast-Attack Interceptor demonstration platform has been in the water since July 2018, and traveled from northern NY State where it was built, on to Brunswick Commercial and Government Products' facilities for a number of upgrades, before heading to the 2018 Workboat show. There, in New Orleans, scores of potential buyers will kick the tires. And, within the pages of this edition of ***MarineNews***, you've already beaten them to it.

MetalCraft's Interceptor Line introduced in 2013 … history at a glance

YEAR	Customer / remarks	Number	Size	Missions
2013	Design Inception / USCG	8	11 meter	SAR Patrol / vBSS
2014	Canadian Dept. of National Defense	16	9 meter	Patrol, VBSS
2016	Undisclosed Military Sale	4	9 meter	Patrol, VBSS
2016	Undisclosed Military Sale	2	9 meter	SAR Patrol
2017	Undisclosed Military Sale	8	9 meter	SAR Patrol
2107	USCG / additional LRI	3	11 meter	SAR Patrol VBSS
2017	First municipal buyer	1	9 meter	SAR Fire
2018	Municipal buyers	4	12 meter	SAR Patrol Fire
2018	Launch 1st iN-10M, municipal buyer	2	10 meter	SAR Patrol
2018	USCG, CB-L, IN-7m	5 year IDQ	7 meter	
2018	Undisclosed Military Sale	1	12 meter	Test Boat
2018	Undisclosed Military Sale	1	9 meter	Test boat
TOTALS	***	50 +	***	various

Source: MetalCraft

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Digital Marine Communications in '**Fast Attack**' Mode

Among the most important considerations in outfitting any fast attack craft is the critical nature of crew-to-crew communications. With David Clark, MetalCraft has long had that box 'checked.'

Edited by Joseph Keefe

There are many obstacles facing boat manufacturers involved in the design and outfitting of patrol interceptor type vessels. This workboat segment is characterized by incessant demands for advanced design and new technology to accommodate the requirements of high performance and increasingly complex mission protocols. MetalCraft Marine is one such manufacturer that is meeting these challenges head on, evidenced by the company's recent expansion of its successful 7-12 meter Interceptor line with the addition of the 10-meter, Fast-Attack Interceptor.

Chris Toller, Project Manager, Patrol and Military Crafts for MetalCraft Marine US, oversaw the metal construction and outfitting of the new 10M Interceptor, as well as the inshore and offshore trials. "MetalCraft set out to build the most mission-capable boat that is configurable to meet the needs of a vast array of end users, yet is cost-effective to build and has leading performance characteristics," said Toller. "The 10M Fast-Attack Interceptor has met these objectives with a modular, actively configurable design."

Virtually every feature of the boat's design and equipment complement the over-arching objective of modular flexibility and fast response. The 10M Interceptor is capable of speeds up to 60 knots and features a state-of-the-art, SeaCross High Speed Navigation System. A deck-mounted rail system provides flexibility for Shockwave seating, benches, and chart tables. It's equipped with a high-speed inflation/deflation wing collar system for rapid deployment from trailer to underway in minutes.

When it came to finding the ideal communications OEM, MetalCraft ultimately chose the David Clark Series 9100 Digital System, and for very good reason. For the firm's Long Range Interceptor program, whose craft are subjected to some of the worst environmental conditions while underway or stored on the back of the National Security Cutter fleet, the most important benchmark turn out to be the intallation of an effective wireless communication system that could enable effective crew-to-crew comms. The focus of the boat is accessibility and freedom of movement – therefore it was paramount that crews were not limited by cables. Added benefits, said Toller, were the configuration customizations – a wealth of options to limit or enhance user experience.

Critical Crew Comms

Among the most important considerations in outfitting the 10M Interceptor craft is the critical nature of crew-

Image above: David Clark Over-the-Head style digital headsets provide outstanding comfort, clear audio and voice transmission clarity for reliable crew communications.

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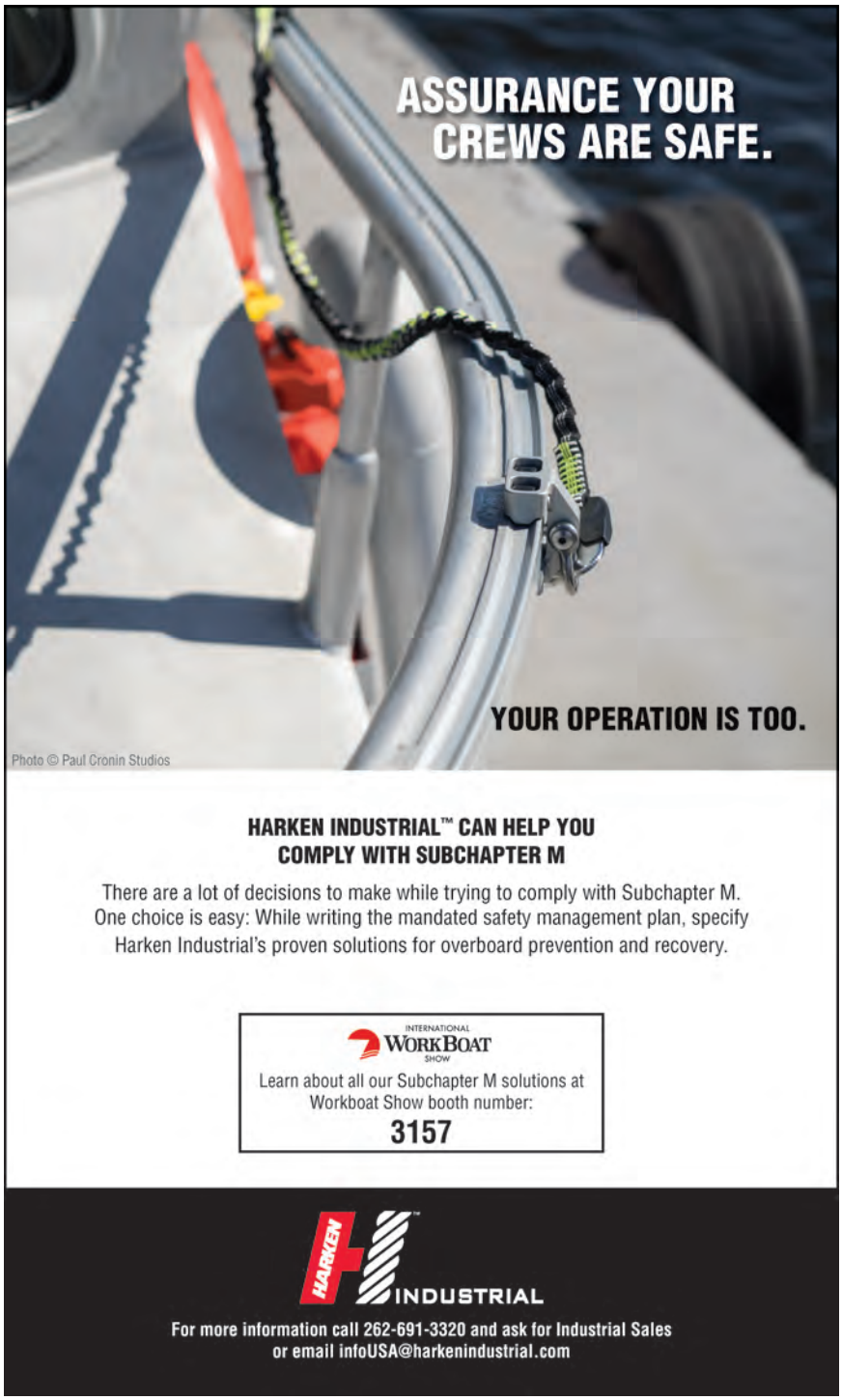
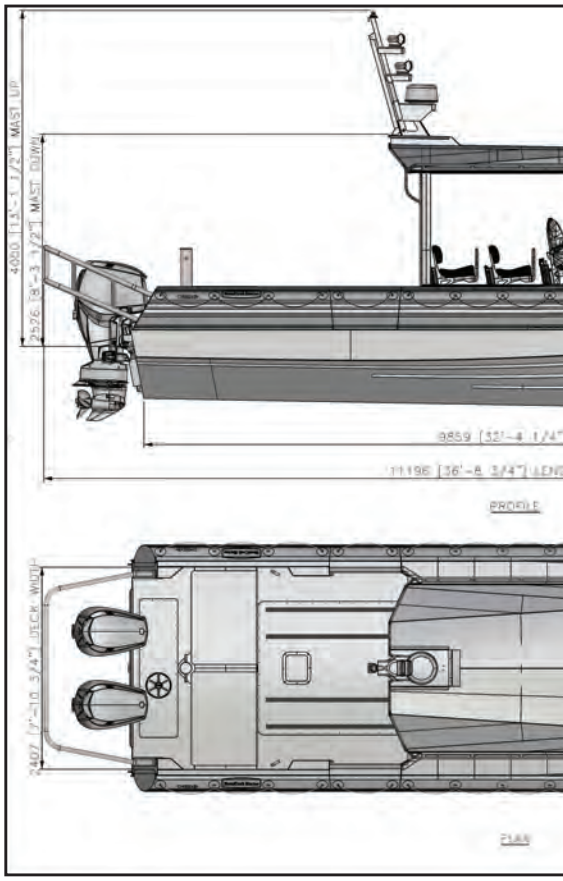
to-crew communications. In keeping with MetalCraft's objective of maximizing the versatility and flexibility of its Interceptor line, the company selected the Series 9100 Digital Communication System from David Clark Company. The Series 9100 is a mission-critical, 'marinized' digital communication system that offers unmatched ease of use, programmability, scalability and versatility, with a proven track record in the demanding patrol boat/interceptor market.

"Crew communication is paramount for effective missions and crew safety," stated Toller. "This is a high speed boat, specifically designed to go faster and turn harder than the rest. The operator needs to know the crew is okay and secure, able to receive navigational and situational awareness input, and provide feedback with confidence the messages are being received."

MetalCraft's decision to incorporate the David Clark Digital Communication System on its Fast-Attack Interceptor was largely based on the system's overall reliability, in particular as operated as a wireless solution. MetalCraft opted for a 6-position, all-wireless configuration on board its new 10M Interceptor, allowing crew members to stay online while moving untethered about the craft, or while on board another craft during interdiction. "Most important was an effective wireless communication sys-



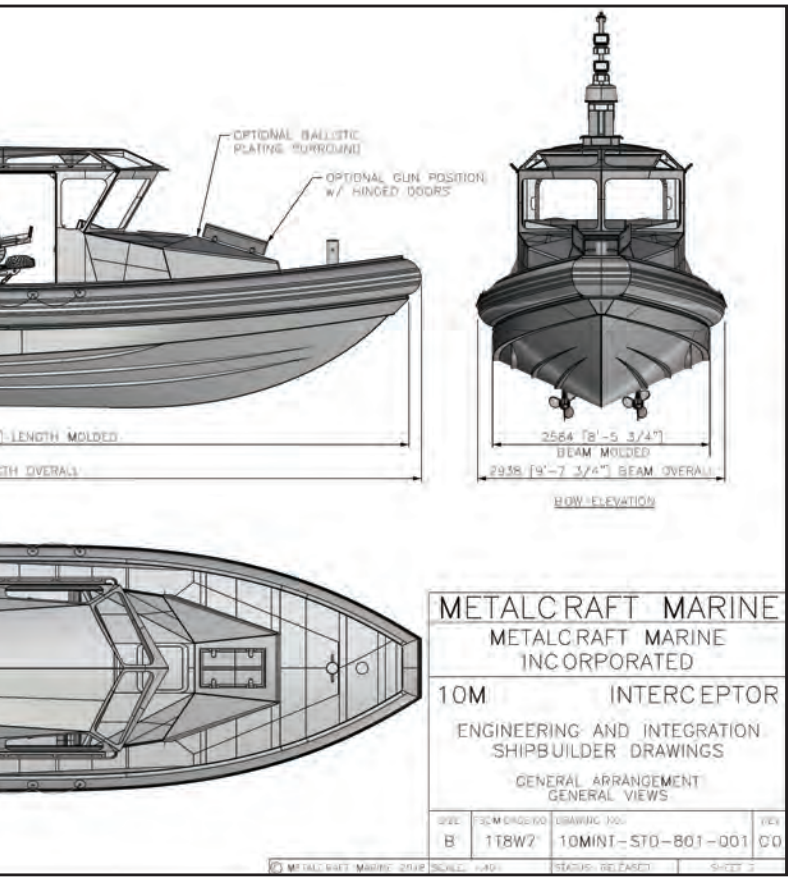


tem…the focus of the boat is accessibility and freedom of movement – therefore it was important that crews were not limited by cables," said Toller.

While the 10M Fast-Attack Interceptor features an all wireless configuration for crew comms, MetalCraft was quick to realize the potential benefits of the system's versatility and ease of scalability in providing such "future-proof" communication solutions for its customers, including the capability of accommodating both wired and wireless crew communication – all while wearing the same headset. "The [Digital Communication] system is very easy to expand, customize and add functionality – all centered on a common master control station. This makes it easy for even the end user to upgrade, or adapt to changing communication technology or upgraded mission profiles," adds Toller.

The David Clark Digital System installed on the Fast-Attack Interceptor includes noise-attenuating communication Headsets with Wireless Belt Stations, Master Station

Image below: The 10M Fast-Attack Interceptor, capable of speeds up to 60 knots, is the newest addition to the MetalCraft Marine 7-12 meter Interceptor line.



David Clark Behind-the-Head style digital headset is designed to be worn with or without protective helmets. All David Clark digital headsets are built for maximum comfort and durability in the harshest marine environments.

Compact Wireless Belt Stations connect to digital headsets enabling users to retain critical crew communications while moving about the craft or while on board another craft.

and a pair of Wireless Gateways with remote antenna. The Master Station, hard-wired to the Wireless Gateway, is the heart of the system, providing high performance Ethernet/IP versatility and offering a modular approach to system interface connectivity. Each Gateway unit, with advanced wireless DECT technology, allows connectivity for up to four (4) users with full system functionality and wireless mobility within a range of at least 300 feet. The Wireless Gateways feature a built-in internal antenna, with an additional connection for an optional remote antenna, further ensuring proper RF signal propagation. All system components are rugged, marine-grade design and provide corrosion resistance, wide ranging temperature tolerance, high performance shock/vibration absorption, and superior dust and water ingress protection.

David Clark Digital Communication headsets are available in a variety of models, including over-the-head and behind-the-head styles for use with military ballistic helmets. Headsets provide maximum comfort and durability while ensuring clear, crisp communication in the harshest conditions. All headsets feature Quick-Release connectors for switching from wired to wireless communication modes in seconds. Headsets also a feature a PTT button (redundant to the headset station PTT) that is conveniently located at the microphone bracket, making it easy to find in the most stressful situations while affording simultaneous boom/mic adjustment and transmit capability.

Repeat Customer, Critical Component

MetalCraft Marine has specialized in world-class, high-speed fire and crew boats for over 30 years. Well acquainted with David Clark Company's more than 15-year track record in providing marine communication system solutions, and having used them on select fire and patrol boats it has manufactured in the past, the continuation of that relationship in this case was a 'no-brainer.'

For its part, the Interceptor line has allowed MetalCraft to greatly expand its product range into the tactical and enforcement communities. The USCG Long Range Interceptor, an 11 boat contract for high-speed interdiction, enforcement, and SAR missions, started the transition into this new market. Since the LRI development, and the successful delivery of nineteen 9M Interceptors to two elite military groups, the line has grown rapidly in popularity and success. For much of that journey, David Clark Communications Systems have been on board as a valued and integral partner.

Chris Toller sums it up nicely when he says, "My experience with David Clark has been extremely positive. The [digital communication] system was easy to install, tech support was available as needed, and it has enhanced the demonstrations of our 10M Interceptor. MetalCraft would certainly consider installing David Clark systems on future boats."

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STEADY AS SHE GOES

Humphree makes inroads in North American markets with vessel stabilization technology.

Edited by Joseph Keefe

Credit: Eric Haun

If you haven't yet heard of Humphree – the Sweden-based supplier of vessel stabilization systems – then, more than likely, that's about to change. The firm's penetration into the North American commercial and leisure marine market has seen its equipment on several vessels, including high-profile deployments like the new Seastreak high-speed commuting ferry.

Founded in 2002 by a team of hydrodynamic and marine engineers, Humphree offers a range of interceptors and fin stabilizers for a wide range of vessels, from 30 to 350 feet. Volvo Penta acquired a controlling interest in the company in 2016, but Humphree operates as a separate company outside the Volvo Penta organization. Humphree's headquarters and manufacturing plant are in Gothenburg, Sweden, but firm opened a facility in Virginia Beach, Virginia in 2012 to better serve its growing business in North America.

Fast and Steady Start

Sean Berrie, CEO of Humphree USA, told Marine News that the company's recent projects in North America include the new Seastreak commuter ferry, a Gladding Hearn pilot launch for the Virginia Pilots and a catamaran excursion boat for Bar Harbor Whale Watching. Beyond this, Humphree interceptors are on the first US support vessel built by Blount Boats for the Block Island wind farm project and are specified on the US Navy PBX program with Metal Shark. The company has also made a significant number of retrofits on the New England commercial lobster boat fleet.

In the leisure boating segment, Berrie said that Humphree has won a loyal customer base among custom and semi-custom builders of large sportfishing yachts, such as Jarrett Bay, Spencer Yachts and others.

Interceptors and Active Ride Control

"Our core technology is our patented interceptors, which attach to the transom and use retractable vertical

Product images: Humphree

blades that create lift forces to counteract vessel motions," said Berrie. "The interceptor blades respond very fast and with high precision, resulting in higher speeds through the water, improved acceleration and better visibility at the helm station. The blades produce little drag and produce a tremendous amount of lift force."

Berrie noted that the Humphree interceptors are made of composite materials for optimum performance, corrosion resistance and light weight. They are operated by a 24 VDC brushless electric motor and totally free of hydraulics. Humphree's product line includes a wide variety of shapes and sizes, and the interceptors can also be custom shaped to fit exactly to the hull design. This year, the company is

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launching its new HLS Series for vessels over 170 feet.

Berrie explained that Humphree's Active Ride Control provides full automatic damping of roll and pitch motions while also optimizing trim, list and heel angles. The system's ride control unit uses an advanced digital controller with adaptive control algorithms and sensors, which include GPS, gyro and accelerometers to measure 3D rate of turn and accelerations. The coordinated turn control function automatically adjusts the heeling angle of the boat during turns to reduce the side forces, producing higher turning speeds and a tighter turning radius while giving the helm operator better visibility through the side windows. The automatic trim control function also improves fuel efficiency significantly, according to Berrie.

Commuting Ferry

Seastreak Commodore, placed into service this summer, is the biggest and fastest passenger vessel in the Seastreak fleet. The 150-foot catamaran caries up to 600 passengers on daily commuter runs between Sandy Hook, New Jersey, and the East 36th Street terminal in New York City with transit times of about 45 minutes. On weekends, it makes offshore trips to Martha's Vineyard and Nantucket. The boat was designed by Incat Crowther and built at the Gulf Craft shipyard in Franklin, Louisiana. Powered by four MTU Tier 3 diesels with waterjet drives, Seastreak Commodore has a top speed of 39 knots and normally cruises at 30+ knots. The catamaran is equipped with eight HA750 interceptors, four on each hull, with Active Ride Control.

"Speed, safety and stability were key design criteria for SeaStreak Commodore, which was built for long commuting routes across exposed waters as well as open-ocean transits," said Brian Achille, director of engineering at Seastreak. "We have had good experience with the Humphree interceptors over the last five years on Seastreak Wall Street, and we are in the process of retrofitting them on other boats in our fleet, so we naturally turned to Humphree when specifying the stabilization platform for the new boat."

"Our captains are very pleased with the performance of the Humphree interceptors, especially in rough seas, minimizing roll and pitch and reducing passenger seasickness."

Separately, the four new 350-passenger vessels being built by Metal Shark for New York Ferries are also fitted with Humphree interceptors and Active Ride Control, according to Berrie.

Pilot Boats

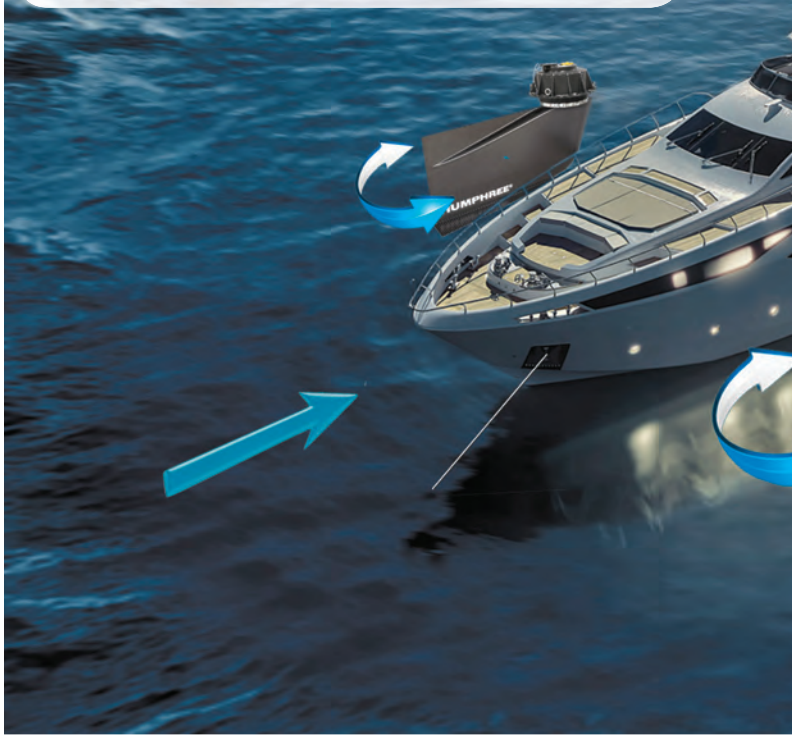
The Virginia Pilots' new 55-foot Chesapeake-class pilot boat Hampton Roads is the latest Gladding-Hearn pilot boat to be equipped with Humphree interceptors. Designed by C. Raymond Hunt Associates, the boat was delivered this summer. It is powered by twin 13-liter 900 hp Tier 3 Volvo Penta engines with IPS3 pod drives.

"We are installing Humphree interceptors as standard fit on most of our new Chesapeake-class pilot boats in response to demand from customers," said Peter Duclos, president of Gladding-Hearn. "They are far superior to traditional trim tabs, and the electric-powered interceptors do not require high-maintenance hydraulics."

The Virginian Pilot boats operate every day around the clock, often in extreme weather and sea conditions, completing more than 7,000 ship boardings per year. The Humphree interceptors provide a smooth stable ride for passengers and crew even in the roughest seas and reduce

"Our core technology is our patented interceptors, which attach to the transom and use retractable vertical blades that create lift forces to counteract vessel motions. The interceptor blades respond very fast and with high precision, resulting in higher speeds through the water, improved acceleration and better visibility at the helm station. The blades produce little drag and produce a tremendous amount of lift force."

– Sean Berrie, CEO of Humphree USA



fuel consumption, according to the pilot association. Berrie noted that Gladding-Hearn is also building new pilot boats for Alaska Pilots and Lake Charles Pilots, both with Humphree interceptors and Active Ride Control.

Whale Watching in Comfort

Acadia Explorer, a 98-foot catamaran commissioned by Bar Harbor Whale Watching this summer, is also using Humphree interceptors to give their passengers a smooth ride. Also designed by Incat Crowther and built by Gulf Craft, the boat is used as a passenger tender for visiting cruise ships and also for lighthouse and nature tours. The catamaran is equipped with two Humphree 800 and two H1250 interceptors with Active Ride Control.

"Passenger comfort is a number one priority for our new tour boat, which operates on the Maine coast where strong winds and currents are often encountered," said Matt Ketchen, vessel operations manager. "The Humphree interceptor system reduces seasickness and discomfort regardless of sea and wind conditions. The automatic tilt, list and turn control functions also improve performance and reduce fuel consumption."

Fin Stabilizers for All Speeds

In addition to interceptors, Humphree builds and sells a range of fin stabilizers that also use fast-acting brushless electric servo units running on 24VDC with no hydraulics. The fins provide stabilization at anchor as well as underway without running a genset. Humphree's unique design allows the fins to rotate 180 degrees, preventing "anchor walk" and keeping the bow pointing into the wind and reducing the impact waves on the beam. The fins' carbon fiber construction make for less weight, and their flange mounts minimize hull damage in the case of grounding. Vessels up to 110 feet typically use dual fins, while larger vessels are fitted with quad fins.

Berrie noted that some vessels are being fitted with both interceptors and fins. "This is an ideal combination, providing optimum stabilization across the entire speed spectrum from zero to 40+ knots," he said. Steady as she goes – at any speed – for any size workboat. That's Humphree's mission, no matter what the application, sea state or type of hull.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Digital Feature Extraction with PropCad Premium 2018

A new utility automates feature extraction from 3D CAD data.

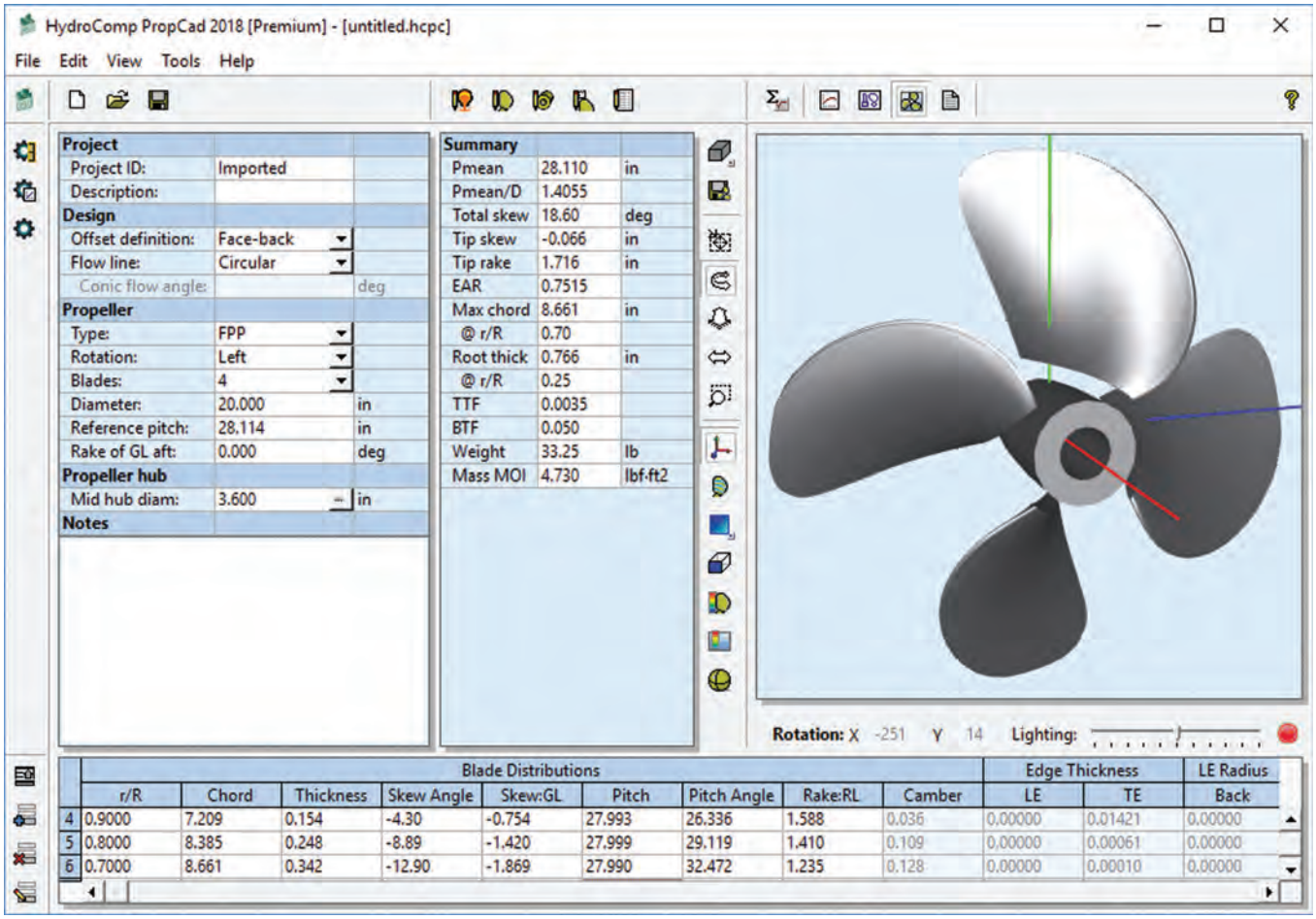
By Adam Kaplan

Marine propellers can last a long time – it is not uncommon to find a vessel running on its original set of propellers. Sometimes, these propellers even outlive the companies that produced them. For example, some large volume propeller manufacturers have permanently closed their doors and patterns, molds, and design data have been scattered to unknown corners of the globe. It's fair to say that while the propeller manufacturing industry has seen growth, it has also seen consolidation.

Today, many vessel owners, operators, and yards are faced with the challenge of replacing legacy propellers. The complex nature of a propeller's helical surface can make this task very difficult. In fact, in many cases, the only solution is to create a 3D model of the propeller using a digital scanning device. This presents a few issues for manufacturing and production, as the 3D scan includes not only the geometry of the blade, but also any damage to the blade. It is very difficult to identify damage on a 3D laser scan without digging deeper into the foundation of the design.

HydroComp's New Utility

To identify and correct unintended damage in a 3D laser scan, HydroComp developed a new utility for propeller designers and manufacturers to extract, understand,



and visualize the design data from a 3D CAD file. The Import CAD File utility in PropCad Premium 2018 drastically reduces the time and effort needed to recreate an existing propeller design or product model – a critical task for propeller manufacturers, designers, and inspectors.

Previously, extracting design data from a physical propeller or a 3D scan of a propeller was a manual and cumbersome process. First, the diameter of the propeller would be measured. This allowed the inspector to mark an individual radius for taking measurements. Propellers were typically marked or scribed at multiple radii, then several measurements along the line would be taken to record the angle about the hub, the radius, and the axial drop to the propeller surface. In addition, the inspector had to take a measurement of the blade thickness at each of these locations. With this data, the propeller could be recreated and understood in terms of its parameters. However, this process took several hours to record the points and additional time to enter into a spreadsheet for calculating parameters such as pitch and chord length.

The new Import CAD File utility allows propeller designers and inspectors to eliminate this entire process of manually laying out the measurement positions and recording the measurements. They will no longer even have to be entered using the Import CAD File process. This reduces the required time from several hours to just a few minutes to scan and import the model.

Easily Importing 3D Scanning Data

Today, it is more affordable than ever to obtain a laser scan of virtually any part – propellers included. There are several commercial companies offering 3D scanning as a service for multiple industries. Scanners them-

selves have also become surprisingly affordable – some general-purpose scanners are more cost effective than specialized measurement devices such as digital pitchometers – which has led to an influx in 3D CAD files. In fact, these systems are so advanced that the detail and resolution available is stunning. The results are so dense that serial numbers, surface scratches, even regions with flaking coatings can be seen on these scans. It's truly amazing, but more data (including geometric damage and surface blemishes) is not always helpful when recreating a propeller.

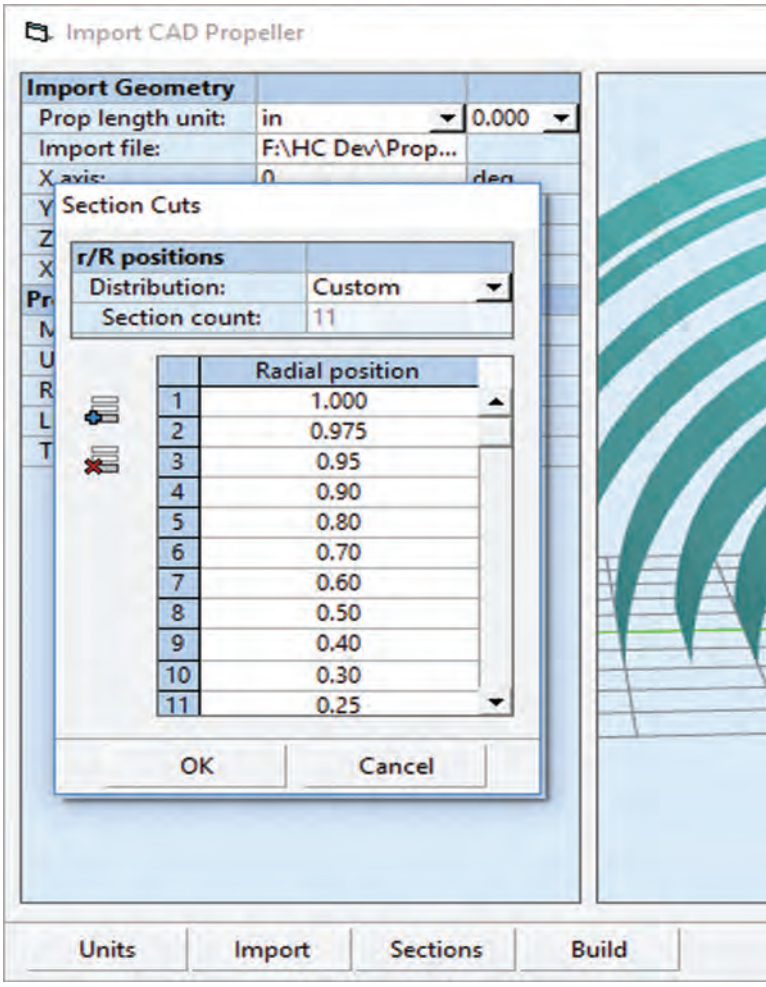
PropCad's new Import CAD File utility helps to reduce this data into a manageable and understandable format. Take a look at an example to demonstrate how a 220MB laser scan can be reduced to the design data. First, we launch the Import CAD File utility from PropCad Premium 2018. The user selects a CAD file in either STL or OBJ formats. The CAD models require the shaft axis to be positioned at the origin, but there are tools in the utility to rotate and translate the CAD data into the proper position with the integrated 3D preview window.

Once the CAD model is oriented, the user can specify which radial positions (i.e., the 50%, 60%, etc) are extracted from the 3D CAD file. Several presets are included to automate this process, but the user can always add and remove positions as needed. The positions are previewed as cylinder cuts so that the user can get as close to the hub or tip as desired.

With the radial positions selected, the 3D intersections can be calculated. PropCad's mathematics unwrap these 3D cylindrical sections so their position and orientation can be quantified. The resulting 2D section shapes and the associated parameters for chord length, thickness, pitch, rake, and skew are calculated from the intersections.

The extract parameters are displayed for the user to review. Any of the columns can be plotted and visually checked for smoothness and correlation to the expected values. In the above example, it can be seen that this propeller, which should be constant pitch, has some damage from the 70% out to the tip, which has reduced the pitch in this region. The user has an opportunity to review the derived distributions within the utility.

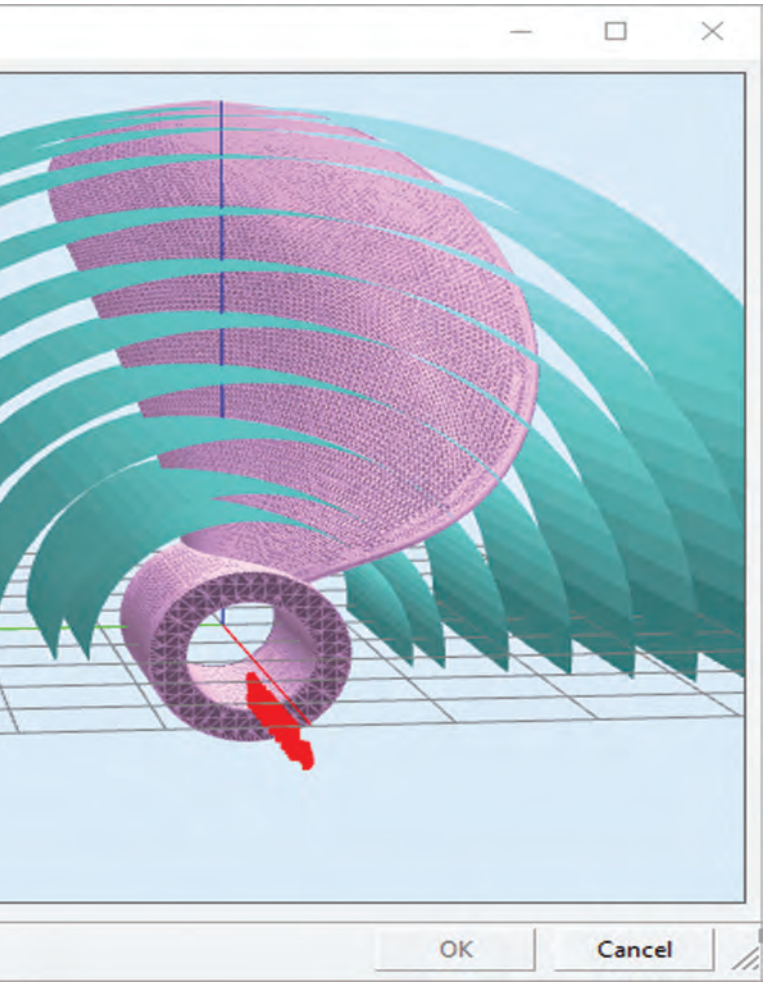
Once the parameters and sections have been extracted and reviewed, the user can send the data to PropCad for further



review and manipulation. Within the main PropCad interface, the user can adjust the blades parameters and export a correct and truly smooth 3D model. In this case, it is very easy to smooth the distribution of pitch from the 70% radius to the tip. The user can enter the desired value into the Blade Distribution table at the bottom to correct the orientation of the section. The result is a propeller that is true to the original, but with significantly smoother, damage-free surfaces.

HydroComp released this powerful new utility as part of the PropCad Premium feature set. The Import CAD File utility provides a valuable way to reverse the propeller design process, allowing for the rapid extraction of propeller design data from 3D geometries. www.hydrocompinc.com

*Senior Project Engineer, **Adam Kaplan**, is the lead developer of PropExpert and PropCad, HydroComp's propeller sizing and propeller design for tools. He has been with HydroComp for over a decade and is a frequent speaker at conferences. He holds a Master's of Science in Mechanical Engineering from the University of New Hampshire and is the regional membership chair of the Society of Naval Architects and Marine Engineers (SNAME) for New England.*



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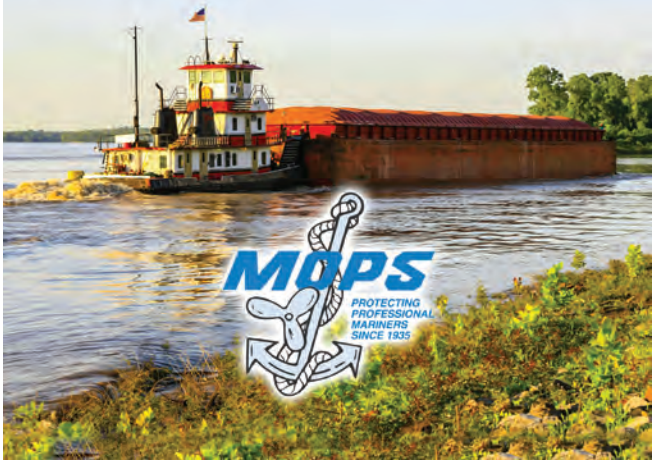

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Energy Storage -

Now Relevant for Any Vessel Type

A primer on the quickly evolving topic of on board battery technology.

By Sveinung Odegard

Energy storage itself is actually old news. Since the sails were taken down for good, merchant vessels have crossed the oceans using some kind of energy safely stored on board. Be it Coal, Diesel, Gasoline or Natural Gas, and regardless of energy type, safe storage onboard has been vital for safety and completion of the planned trip. On the other hand, active use of batteries in propulsion systems is relatively new. It started with smaller vessels, but expanded within a few years into medium and large vessels.

Improved Performance and Safety

One of the keys to this growth in both capacity and vessel types has been the new design that exceeds required thermal protection caused by a cell failure, typically called thermal runaway. Corvus, for example, has demonstrated in multiple tests that an injected failure on one battery cell does not spread to the adjacent healthy cells. Corvus has also introduced a contained battery solution that leads any potential gases out of the battery room, and into a safe area. These achievements, combined with active battery management systems have increased the confidence in battery technology significantly. The technology is now accepted as a viable and safe method to transfer energy onboard ships.

What's unique about batteries?

Batteries are the only major energy storage system that can instantly change from providing energy to absorbing excessive energy. The best way to describe this is to compare it to a coiled spring. You can compress it further, hence making it stronger, or you can release it to allow it to do a job for you. Simply explained, that's exactly what batteries can do for you. This feature is unique, and should

Credit: AAM / Red & White Fleet

be credited to power semiconductor technology developed by electrical companies. ABB was a pioneer in the marine industry, by launching the Onboard DC Grid in 2011.

Many other companies followed up with matching solutions quickly, and there are multiple integrators today actively using batteries in their solutions.

Taking Full Advantage of Batteries: count the ways

The ultimate goal for any new technology is to be able to perform the same job more efficient, less polluting, with reduced costs and improved safety. So how can we achieve this? Listed below are some of the features that today's owner/operators appreciate when employing this technology:

- *Zero Emissions:* Ferries are the winner here. Most of them go between two specific docks, and recharge at each dock while vehicles are unloaded and reloaded. Norway alone will have 50 battery driven ferries in operation by 2020. Europe and Canada have started to do the same, and many battery ferries are under construction. Any vessel that routinely docks multiple times per day is a viable

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- *Emission Free Areas:* Any vessel entering city limits will be under scrutiny in the future. People's health and comfort are directly linked to the air quality. With batteries installed, vessels can achieve zero emission a limited time; either while at dock in the cities, or when entering fjords or similar areas sensitive to pollution. Hybrid RoPax ferries today routinely enter and depart ports on battery power only. In open water, they still need engines, but they optimize them by recharging batteries and preparing themselves for next port. Exploration Cruise vessels do the same, but also when they enter pristine and sensitive landscapes.
- *Peak Shaving:* Many vessels have short peaks of high power demand – sometimes called "the hour of power." Batteries can provide that boost of power, giving the vessel a total power rating that is higher than total diesel power onboard. Fishing vessels are a great example of this practice. They have peak power when hauling back gear, but also long periods with idling propulsion. Batteries will provide the peak power, and optimize the power by taking recharge when vessels have excessive power. Interestingly, tugs are also excellent candidates for this, as they only briefly use the tremendous amount diesel power they have installed in the course of a typical workday. Reduced engine size combined with batteries will help this fleet to become more efficient and environmentally friendly; going so far as achieving zero emissions when charging at dock. The technology enables tugs to mainly operate on batteries, with diesel engines as backup only.
- *Spinning Reserve:* Certain operations at seas require a spinning reserve. Simply put, this means that a sudden stop of an engine, or a power loss should not have impact on the vessel position or operations. This spinning reserve is per today achieved by running more engines online than needed. The disadvantage of this is the extremely low load on the engines, and unnecessary running hours. As authorities and other stakeholders increasingly begin to accept batteries as a spinning reserve, it allows operators to shut down idling engines that are running for spinning reserve only. This is typically strong benefit in the oil and offshore industry for vessels operating in DP mode.
- *Faster Response:* Batteries can accommodate large load variations in a short time. This is a benefit that has proven particularly efficient on gas engines with typically longer response time, and is believed to be a perfect partner when Fuel Cell technology comes as base load provider. There are multiple OSV's and Ferries operating today with the combination of gas engines and batteries onboard.
- *Load Leveling:* Anyone who has been in an engine room during a heavy storm knows how hard a diesel engine works to maintain the speed as the vessel rides the waves. This pumping of the power reduces efficiency. Batteries can be used to level out the load, and increase efficiencies – as

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- ***Silent Vessel:*** Imagine cruising into a noise sensitive area with no engines running; for example, whale watching, scenic fjord cruises, scientific operations, and seismic operations. The opportunity to operate a vessel for several hours with no engines running still promises many as yet unexplored opportunities.
- ***Redundancy:*** With batteries on board, not only one more power source is made available, a completely different energy source from the combustion engines opens up other possibilities and advantages. This is something that could benefit such hazardous missions such as firefighting and gas terminal support craft.
- ***Less Expensive Fuel:*** Finally, electricity – dependent on the source and local economic models – can be less expensive than running diesel engines. It does not pollute locally, and it does not pollute globally if the power is generated from clean power.

In short, batteries represents multiple ways to reduce running hours dramatically for virtual any vessel type, ultimately minimizing expensive service intervals, saving fuel and myriad other jobs on engines. The concept has legs, and is in use right here in the United States. This year, All American Marine and Red and White Fleet of San Francisco announced the launch of the Enhydra, the newest member of the R&W passenger excursion vessel fleet. The 128-foot LOA aluminum monohull vessel with a 30-foot beam is the largest lithium-ion battery electric hybrid powered vessel in North America built under "USCG Subchapter K" certification.

The propulsion integrator or the 600-passenger vessel is BAE Systems, who supplied their HybriDrive propulsion system that includes a generator, propulsion power converter, house load power supply and control system. No doubt more of these kinds of vessels are on the way. It might even be a good fit for your operations.

Sveinung Odegard *is sales manager for Corvus Energy in North America. He has participated in hybrid and all electric projects in Norway, and combines his work in Europe with living in Seattle, WA. Odegard also owns and operates a small business focusing on green marine technology for the North American market.*

Tripling the Service Life of Fish Holds

Epoxyamine Coating Extends Tank Maintenance Intervals: A Sherwin-Williams Protective & Marine Coatings Case Study.

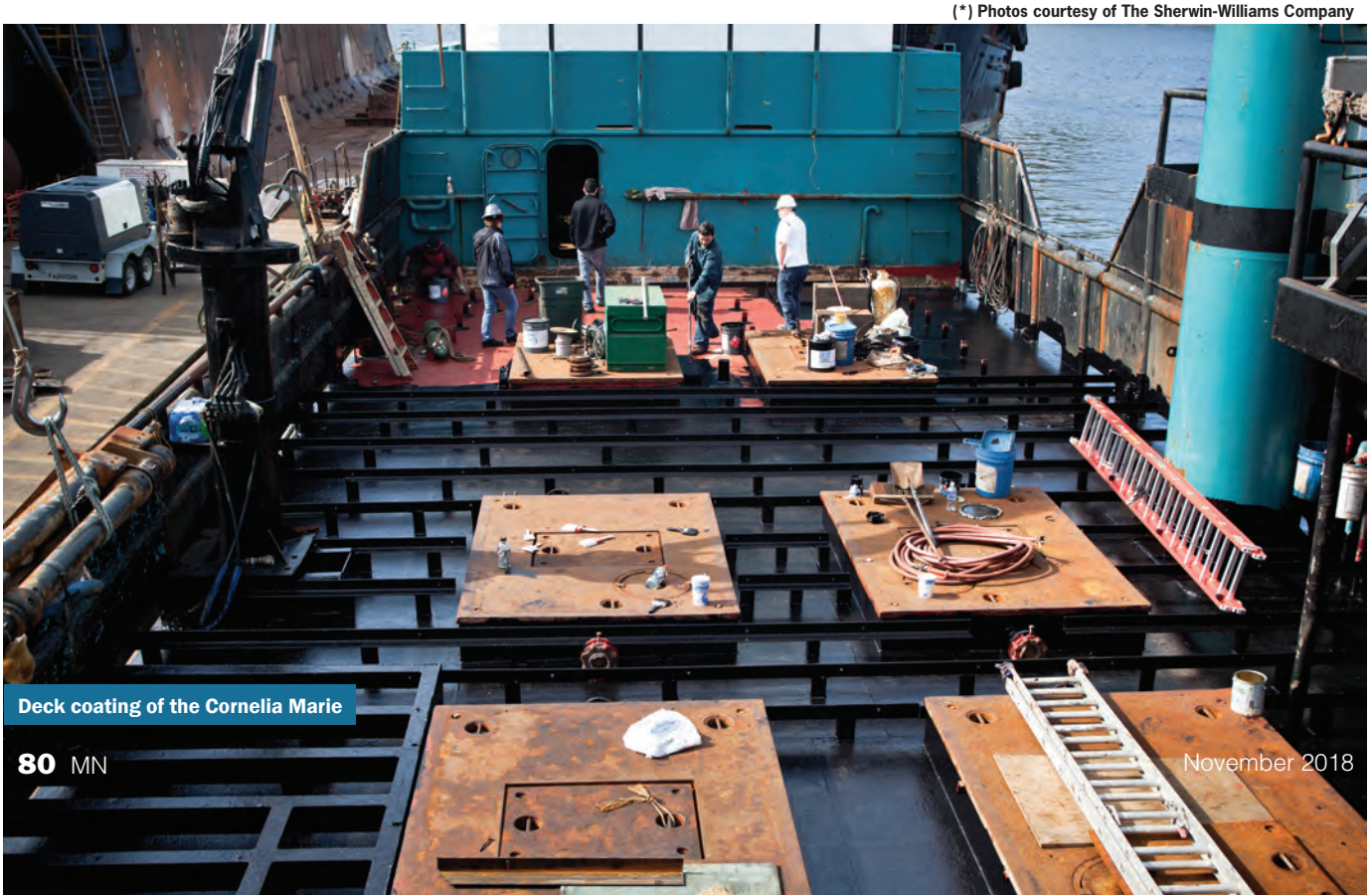
By Ray Meador

A commercial fishing vessel that shows up at a seafood processing facility with its catch housed in rusty fish hold tanks is flirting with potential disaster. The processor may refuse the vessel's entire haul if it sees rusty water or floating paint chips inside the holds. And when your vessel can hold more than $3 million of value at dock prices, you certainly don't want to run the risk of corrosion eating away at your profits.

"If we don't have good fish holds, we don't have a way to keep our product in good condition," said Casey McManus, Captain of the famed F/V Cornelia Marie from the Discovery Channel's documentary-style TV show Deadliest Catch. "And if we can't keep the product in good condition, there's no reason to go out and get it."

McManus prefers to take his risks crabbing in the unforgiving Bering Sea – not at a seafood processing facility – which is why he recently had the Cornelia Marie's six fish holds restored. In doing so, he also made a strategic specification change from the thin-film polyamide epoxy coatings he traditionally used to coat the vessel's fish holds to a more durable ultrahigh-solids epoxyamine coating that could deliver a longer service life. Whereas the traditional polyamide epoxy coating would typically last only about five years, the epoxyamine coating is expected to triple the fish hold maintenance interval to about 15 years. In addition, the epoxyamine coating can be returned to service within a day of application, which is significantly faster than the nearly weeklong wait required with polyamide

(*) Photos courtesy of The Sherwin-Williams Company



Deck coating of the Cornelia Marie

epoxy coatings.

"The beauty in the fish hold coating application was in prepping the tanks efficiently, coating them within a couple of days, and returning them to service 24 hours later, knowing that we may not have to redo them for another 15 years," said McManus. "I wish I would have found this combination years ago. It would have saved me a bunch of time and headaches."

Performing the Fish Hold Restorations

Postponing fish hold maintenance can be a potentially costly risk for vessel owners. Yet, proactively addressing fish holds can be difficult, as the downtime required to maintain the tanks typically spans at least a week due to the long return-to-service times of traditional thin-film polyamide epoxy coatings. That's a lot of downtime to plan for in dry dock when other areas of the vessel are likely prioritized for coatings maintenance. The shorter, 24-hour return-to-service time of the selected epoxyamine coating – the 100% solids, plural-component SherPlate PW Epoxy coating – was a draw for McManus when considering restorations for the Cornelia Marie.

"Fish holds are often the last area to get addressed at the shipyard, which means you may have to wait another week to get back out on the water making money," said McManus. "Timed right with other dry dock maintenance, the rapid return to service capabilities of the SherPlate PW Epoxy coating can basically give us an extra six days at sea."

The Cornelia Marie's fish holds were showing visible signs of corrosion and flaking paint – the very issues that could spell disaster for a day's catch – following about 10 years of service with no overhaul and minimal coating touchups. To restore the vessel's six holds, which have a total volume of over 15,000 ft3, McManus' crew dry docked the vessel at Seattle's Northlake Shipyard in April 2017.

At the shipyard, a crew from marine surface preparation and painting contractor International Marine and Industrial Applicators LLC set up containment systems, removed salt contamination, and abrasive-blasted the fish holds to prepare the steel substrate for coating. The crew removed all rust, debris, and mill scale and left a 3- to 4-mil profile to enhance coating adhesion.

Next, the crew sprayed the edge-retentive SherPlate PW Epoxy coating directly to the metal substrate at 20-30 mils dry film thickness (DFT) in a single application. The application provided a high build on the numerous sharp edges and corners in the fish holds to enable a longer service life. In addition, the application will accommodate temperature swings inside the fish holds, which range from about 27°F

The Cornelia Marie's six fish holds showed visible signs of corrosion and flaking coatings that threatened the integrity of the vessel's catches.

The SherPlate PW Epoxy application provided a durable, 20- to 30-mil DFT coating over all the fish hold surfaces, including high builds on sharp edges, corners, and grates.

to 68°F, due to the coating's excellent flexibility.

While the restoration project took about two weeks, the majority of time was spent on equipment staging and surface preparation. The crew completed the coating applications over two days for all six fish holds, and McManus was able to return the tanks to service one day after the epoxy applications were complete.

Checking the Coating's Durability

The SherPlate PW Epoxy coating application has held up very well after over a year and a half of rigorous service. The durable cured epoxyamine coating has withstood scrapes from sharp crab shells, hard impacts from brailers used to offload crabs, and violent knocks from nozzles and hoses used to offload salmon.

McManus expects to realize about 15 years from the application before requiring significant maintenance. Should impact damage occur in the meantime, the vessel's crew can touch up those areas using cartridge tubes, helping the Cornelia Marie stay in service longer with fewer delays for coatings maintenance.

"The challenging fish hold environment is really putting the SherPlate PW Epoxy product to the test," said McManus. "After nearly 300 offloads, none of the coatings have fractured. I'm very impressed with the strength."

Maintaining the Hull, Freeboard, and Superstructure

About two years prior to restoring the vessel's fish holds, the Cornelia Marie's owners restored the underwater hull, freeboard, and areas of the superstructure.

They dry docked the vessel at a shipyard in Kodiak, Alaska for the hull restoration. Monitored by Sam Schuetz, a Marine Technical Specialist for Sherwin-Williams Protective & Marine Coatings, Cornelia Marie crewmembers washed the underwater hull using equipment from Paradigm Marine. They removed algae growth and slime using a light pressure wash and then finished with an ultrahigh pressure wash at 38,000 psi to take the hull down to the existing tight anti-fouling coat.

Next, the Cornelia Marie crew removed loose debris with hand and power tools before securing approval from Schuetz to prepare the vessel for spray-applying an anti-fouling coating. The preparations included setting up a containment system and masking freeboard areas to protect lettering and other design elements.

Finally, applicators from C&M Enterprises performed the coating applications. They first primed any bare steel using Corothane I MiO-Aluminum and then spray-applied a tie coat of Sherwin-Williams SeaGuard 6000 primer to the hull. Next, they applied a single 10- to 12-mil wet film thickness (WFT) coat of SeaGuard Ablative Anti-Fouling epoxy within hours of priming to avoid delamination. For the topcoat,

The fully-restored Cornelia Marie features its distinctive teal color in Sherwin-Williams Hi-Solids Polyurethane Gloss, which provides superior adhesion and impact resistance, as well as outstanding color and gloss retention.

Photo courtesy of F/V Cornelia Marie

applicators applied Hi-Solids Polyurethane Gloss at 3-5 mils WFT in the distinctive Cornelia Marie teal color.

When the Cornelia Marie docked in Seattle a few months later to receive new engines and updates to its living areas, the vessel's crew recoated the main deck and lower house. They applied three coats of SeaGuard 6000 epoxy by brush and roller at 5-7 mils DFT per coat on the main deck. In addition, a crew from Northlake Shipyard spray-applied a coat of SeaGuard 6000 at 5-7 mils DFT in the engine room followed by a topcoat of Hi-Solids Polyurethane at 3-5 mils DFT.

Combating Corrosion from 'Haul to Hull'

Following the maintenance and restoration work performed on the Cornelia Marie, Sherwin-Williams coatings are now protecting the vessel from its haul to its hull. The protective coatings applications will help keep corrosion at bay and extend maintenance intervals, so the fishing vessel can maximize its earning potential by staying in the water as long as possible between dry docks.

***Ray Meador** is a Marine Coatings Representative for Sherwin-Williams Protective & Marine Coatings. His coatings career spans over 40 years, including more than 30 years with Sherwin-Williams, serving in such roles as corrosion specialist and sales representative. He is a NACE Certified Coating Inspector – Level 3. He can be reached at ray.g.meador@sherwin.com.*

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Maritime Industry Faces Compliance Standard from OSHA on Respirable Crystalline Silica

Companies with workers repairing and refurbishing ship components utilizing sand blasting have become the subject of a new U.S. Department of Labor Occupational Safety and Health Administration (OSHA) standard.

By Thomas H. Davis, Jr.

Davis

All employers and employees in the maritime industry need to be aware of the new requirements as OSHA continues efforts to protect workers from the hazards of exposure to breathable silica dust. The new application of the "Respirable Crystalline Silica" standards requires all covered maritime and general industry employers to assess existing exposures.

Maritime and general industry employers now covered by respirable crystalline silica standards should immediately conduct a review of their written safety program(s). These programs, and accompanying employee training, should be updated as necessary to meet the requirements of the silica standard.

Employers must determine if any employee exposed to silica dust might be at or above a defined "action level," which is any exposure to 25 micrograms of silica per cubic meter of air averaged over an 8-hour day. If silica dust is present in the workplace, the employer must take steps to protect workers from exposure in excess of the permissible exposure limit (PEL) of 50 micrograms of silica per cubic meter of air averaged over an 8-hour day.

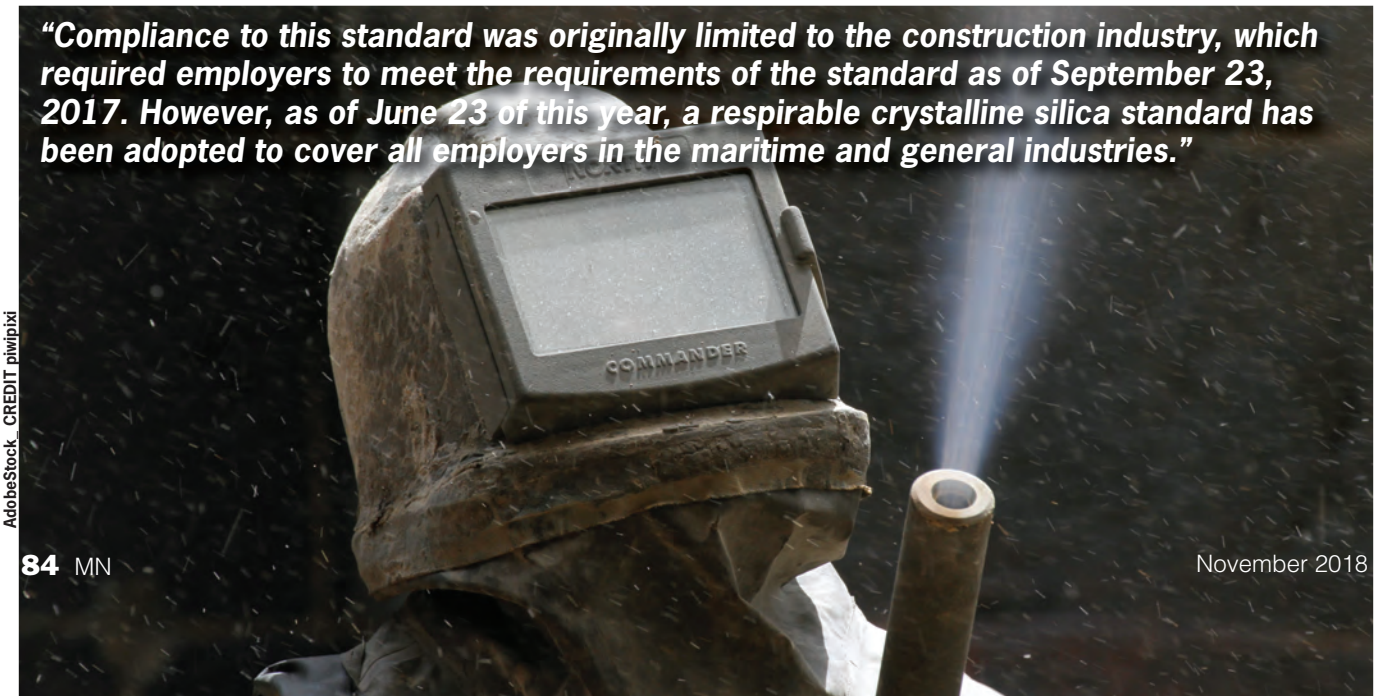
Compliance to this standard was originally limited to the construction industry, which required employers to meet the requirements of the standard as of September 23, 2017. However, as of June 23 of this year, a respirable crystalline silica standard has been adopted to cover all employers in the maritime and general industries.

In addition to federal OSHA, there are currently 28 OSHA-approved state plans. States are allowed to implement their own, statewide occupational safety and health programs pursuant to written agreements with the U.S. Department of Labor. State Plans are required to have standards and enforcement programs that are as least as effective as OSHA's, although they may have different or more stringent requirements.

Crystalline silica is a common mineral found in such materials as sand, stone, concrete, brick, and mortar. Certain common industrial or construction activities, such as using saws, drills, or grinders, can release silica dust into the air. In the maritime industry, the principal source of crystalline silica is the use of sand for abrasive blasting. This is especially common for port repair workers.

Employers in this part of the maritime industry and others where it might be applicable are required to limit access to areas where silica is at or above the PEL. Exposure to respirable crystalline silica increases the risk for a person to develop lung cancer, chronic obstructive pulmonary disease and silicosis — a currently incurable lung disease.

Employers must actively work to limit workplace silica dust to below the PEL. This can include reducing airborne dust or providing respirators to affected workers. Methods used to reduce or eliminate breathable silica dust exposure



"Compliance to this standard was originally limited to the construction industry, which required employers to meet the requirements of the standard as of September 23, 2017. However, as of June 23 of this year, a respirable crystalline silica standard has been adopted to cover all employers in the maritime and general industries."

AdobeStock_ CREDIT piwipixi

must be detailed in a written control plan, which should include specific tasks and those responsible for implementing the changes to help reduce exposure to the employees.

Of equal importance, all workers must receive training on operations that result in silica exposure as well as ways to limit such exposure. In addition to the written exposure control plan, employers must keep records of silica measurements, object data and required employee medical exams, which must be offered to every employee who will be exposed above the PEL for 30 or more days per year. This exam must be provided to each exposed employee every three years and must include chest x-rays and lung function tests.

Compliance with the silica standard does not exempt an employer from the duty to comply with all other applicable OSHA standards. For example, OSHA specifically requires maritime employers engaged in abrasive blasting operations (using crystalline silica-containing blasting agents) to comply with several additional standards, including ventilation and use of mechanical paint removers.

Employers in the maritime and general industries may, under certain circumstances, opt to utilize the silica standard adopted for the construction industry instead of the general industry and maritime standard. However, that deviation should be properly vetted before assuming compliance will be met.

***Tom Davis** is a partner in Poyner Spruill LLP's litigation section and has more than 25 years of experience in the litigation and arbitration of complex cases. He regularly represents property owners, design professionals and construction contractors on construction related issues, including contract negotiation, claims analysis and presentation, labor and OSHA disputes, professional licensing disputes, and land condemnation.*

Designing for the Winds of Change

The advent of U.S. offshore wind brings the need for well designed built-for-purpose vessels to sustain its momentum.

By Joseph Keefe

As the long-awaited advent of offshore wind finally arrives on this side of the big pond, one question which continues to dominate the conversation is where (and when) the fit-for-purpose tonnage necessary for this great leap forward will come from. Just as important, stakeholders need to have confidence in the availability of proven vessel concepts, as they continue to explore opportunities and justify investment decisions in the growing sector.

First Out of the Gate

Rhode Island-based shipyard Blount Boats, in June, announced that it had signed a sublicense agreement with Marine Applied Physics Corp. (MAPC) of Baltimore, Md., for the building of crew transfer vessels (CTV) designed by UK builder South Boats. South Boats has designed and built approximately 30 percent of the wind farm crew transfer vessels operating on European windfarms, and Blount Boats has held the U.S. license for the firm's designs since 2011.

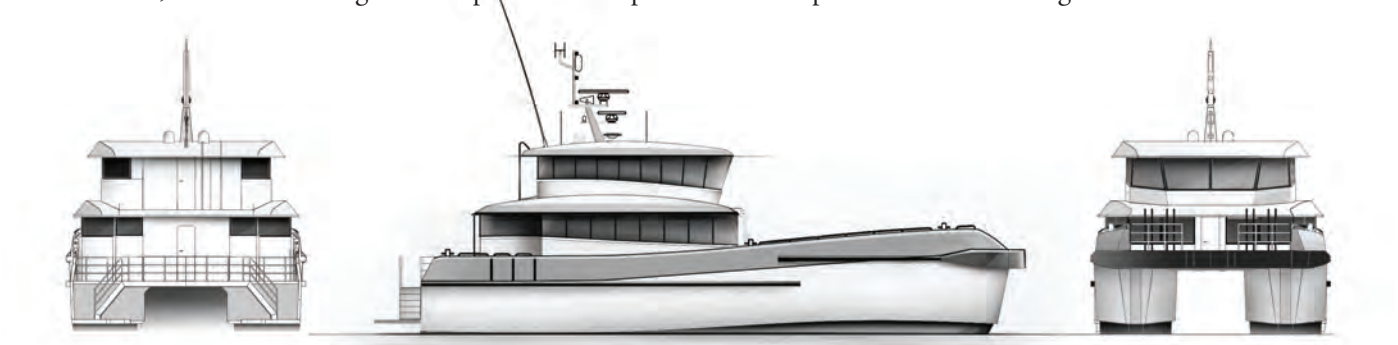
But, this isn't Blount's first rodeo in offshore wind. In 2016, Blount courageously built and ultimately delivered a South Boats 21-meter transfer vessel, Atlantic Pioneer, to Rhode Island Fast Ferry. The vessel was the first U.S. flagged, and fit-for-purpose crew transfer vessel to operate in U.S. waters and services the Deepwater Wind Block Island Wind Farm, which is the first, and currently sole, offshore wind farm operating in U.S. waters.

In the years to come, as new offshore wind farms begin to sprout up in U.S. waters, a fleet of Jones Act crew transfer vessels will be required for servicing these projects. But Blount and South Boats aren't alone anymore in this venue. In October, Chartwell Marine launched the Chartwell 24, a new CTV design that responds to the specific demands of offshore wind manufacturers, developers and operators. According to Chartwell Marine Managing Director Andy Page, the need to create confidence with familiar designs still leaves room for innovation, and substantial opportunities exist for those who can optimize vessels for US market conditions. In particular, he says, meeting EPA Tier 4 air quality requirements with bespoke propulsion options, hull and deck designs that stand up to larger Atlantic swells, and the ability to respond to unique development approaches with enhanced logistical support capacity, will be crucial advantages.

Page brings an impressive CV to the offshore wind party. With a BEng degree in Yacht and Power Craft Design, a Diploma in Ship Surveying and over 10 years' experience in marine architecture, Page's fledgling firm, a Naval Architectural consultancy business, started operations in January of this year. Previously, Page worked for large high-speed vessel boat builder; South Boats, as a naval architect. Andy headed up the design team, which at its peak had 11 naval architects working on site. Page explains, "I was fortunate, along with my great colleagues, to be the designer of the Atlantic Pioneer which is the first offshore wind farm boat, missioned by Atlantic Wind Transfers."

The Chartwell 24

The Chartwell 24 design was developed following extensive collaboration and interface with industry stakeholders. Ideally proportioned for operation in offshore wind, the displacement versus installed power provides excellent transit performance, together with high bollard push and frictional holding force. The Chartwell 24 has an equal foredeck space to that of the largest available CTV on the



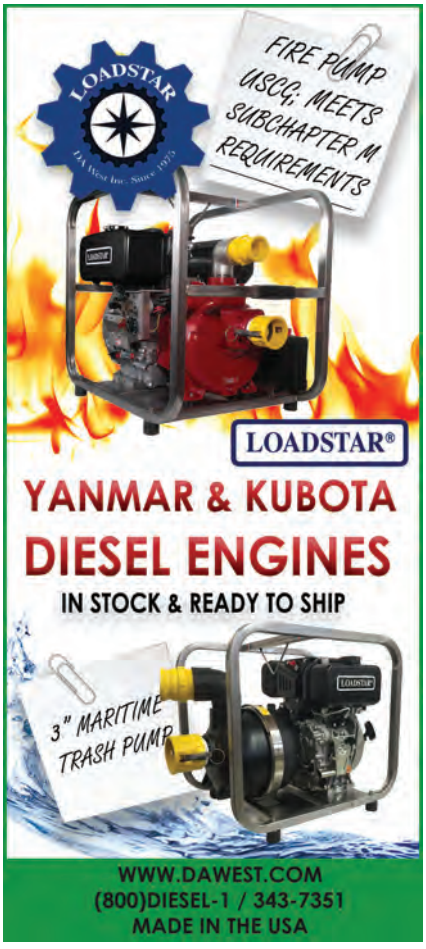
market, and can operate at 29 knots while being EPA Tier 4/IMO Tier 3 compliant, either by direct diesel drive or by incorporating hybrid technology.

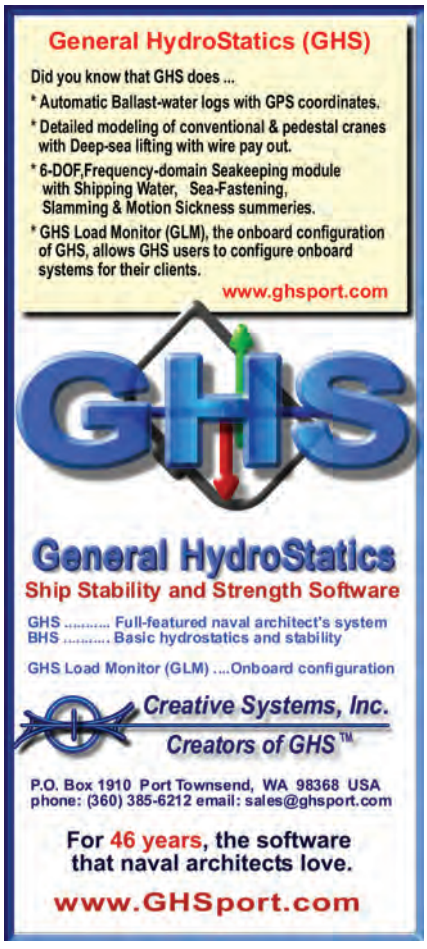
Beyond this, the vessel was designed with ergonomics and safety at the forefront of the design process. With the exception of mandatory class/flag sill heights the boat has no steps or trip hazards. Designated walkways, handrails and safety sliding rails are positioned specifically for the purpose of safe, repeatable, effective crew transfer. The interior is arranged to maximize comfort with class leading IMO HSC Code Annex 10 compliant reclining seating, local electrical power points and tablet connectivity with ultimate onboard WIFI. Built for purpose, Page says that the Chartwell 24 is a pioneer in its field and today is ready to support windfarm operations, here in U.S. waters, and around the globe.

According to Page, the Atlantic Pioneer was fortunate that it didn't have to sustain the new EPA/IMO tier constraints. But, he says, "If you were to build a repeat boat, it would no longer be compliant. So immediately that's a design driver which we've had to consider for the future. And one option within the 3 or 4 requirements is that any engine above 800 horsepower requires after treatment. So in order to increase safety and reliability, Chartwell, for the American market, has opted to propose four engines as opposed to two – smaller individual power units giving a total combined power similar to that of two larger engines but without requiring aftertreatment. And the tangible benefit is that you can actually operate at slower speeds using only one or two engines. It's a far more efficient way of running, and as a result, you're equally reducing your emissions output be-

The Chartwell 24 at a glance ...

LOA: 23.8 meters	Fore Deck Cargo Area: 70 square meters	Operational Draft: 1.2 meters
BOA: 8.65 meters	Power: 4x Main Engine / Hybrid (client option)	Speed: Up to 29 Knots
Capacity: 24	Propulsion Tier: EPA Tier 4 / IMO Tier 3	Hull: Aluminum
Crew: 3 to 6	Cargo Tie Down Points: 2x 10 feet Containers	Fuel Capacity: 4227 U.S. Gallons





cause you're running at a smaller power unit which burns less fuel."

Page's design is engine OEM agnostic because many clients already have their own propulsion favorites. He adds, "The idea of the four engines is that you're resulting in more redundancy, which from a wind farm owner's point of view means that they've got high reliability because in the event of losing one engine you've still got three. The next tangible benefit is safety. You can power share and potentially operate more house loads with those power units. And from a sustainability point of view, the engines are more cost effective from a price point of view, individually." Beyond this, he adds, the Chartwell 24 is ready for a hybrid configuration, should the client so desire.

Page points out other subtle changes and improvements. In a nutshell, this involves increased seakeeping and improved operational safety. "We've learned a lot about the sea state off the East Coast. This involves different wave patterns than what we have in the North Sea; a longer wavelength, and generally, slightly larger swells. So, increased freeboard is something that I have added to our new design, which basically means that your wet deck is much higher, so therefore the chance of 'wet deck slamming' is much reduced. Additionally, based on our learning, we have developed a new hull form, which we are validating by carrying out tow tank and free running model testing in the winter of this year. The applied wave pattern will be based on that experienced on the eastern seaboard."

For the wind farm industry, a big challenge has been getting people from shore to where they're going and getting them there fit enough to work once on site. Hence, the ride for the vessel is of critical importance. Page agrees, saying, "We've looked carefully at the seating arrangement, how we position the seats, the space between seats, the ability to recline seats and have been careful to ensure clear vision overboard. If they feel like they've enjoyed the experience, then they're more likely to do a good day's work. We've thought a lot about that and obviously I'm fortunate to have spent a lot of time designing these boats." Offshore, trying to mitigate the chance of failure when workers transfer to the turbine is also quite important. Page refers to it as making the procedure "a repeatable, predictable experience."

Blowin' in the Wind

It might not be too long before Page puts his first Chartwell hull in the water. With a contract (in principle) from a UK-based operator, Page is looking to release a request for information to Worldwide shipyards this month (November). On this side of the pond, he's equally enthusiastic about getting started. He explained, "Certainly with respect to quality, U.S. yards are phenomenal. My experience with Blount Boats was absolutely fantastic and I also worked with a couple of others; one in Florida and one in Maryland. The quality is undeniable."

As Chartwell looks to compete in the wind farm business in the years ahead, the U.S. markets could well be one his best opportunities for growth. His previous success on this side on the pond should provide a measure of confidence as that situation develops. That's because if for new entrants to U.S. offshore wind, it is their 'first rodeo,' that won't be case when it comes to Andy Page.

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From Data Noose to Data Intelligence

This is how Ulstein does it. Shipbuilder makes it possible.

Maritime newbuild projects, conversions and maintenance projects have at least one thing in common: millions are lost annually in the search for the right information. As much as 30 percent of all work within these maritime projects consists of unnecessary searching stovepiped sources for data. The right data. This of course has a cause and fortunately, there is also a solution.

Geert Schouten is co-founder and Director of Shipbuilder Software. He worked for IHC Holland for 3 years before starting his consultancy career in IT and management for shipyards, ship owners, design offices and suppliers. His experience showed that technical people were not well supported with IT tools, he co-founded the company Shipbuilder in 2012.

Shipbuilder is a software managing data during the life cycle of any maritime object. Shipbuilder, says Schouten, is a game changer for the maritime industry. It enables users to easily and efficiently specify, design, build (a.o. 3D) and maintain all types of vessels.

Root Cause

Geert Schouten, director at Shipbuilder explains the dilemma. “Many maritime companies have heard of digital transformation, but are unable to give it any real interpretation. For most of them it remains a big cloud. Some companies do want to go further and start searching for software. They go to work diligently with often large, expensive software packages that seem to be a safe choice. However, these parties have little to no affinity with the maritime sector, while at the same time, the software is being used for highly complex newbuild projects, conversions and maintenance projects. In short: a recipe for disaster. It is often clear on the shop floor that it should be different, but how?”

Schouten continues: “Even a search in Google, one of the largest data companies in the world, yields a huge data-waste, or in other words, information that is of no use to you. What strikes me is that large data processing software companies copy this search system one-on-one. It’s often searching for a needle in a haystack. All maritime compa-

Credit: Shipbuilder

nies have a gigantic database. For many, this data is placed in Word, Excel, PDF and other non-suitable data processors. Searching for the right data is then a needlessly complex activity and how can you know for certain that your Word document is the latest version?"

Real maritime digital transformation

The priority is to get the data you need immediately. "Together with my team, we have developed a smart data management program: Shipbuilder," Schouten says. "Shipbuilder guarantees that the data structure of any maritime company fits into Shipbuilder. That makes us unique. For our customers, for example Ulstein, data suddenly becomes of enormous added value. Their data (regularly several terabytes!) is available in real time and a search always gives the right information. And that is just the beginning."

In Shipbuilder, 25 years of experience in the maritime sector has provided a Data Intelligence Knowledge Base. This contains a wealth of basic information pre-programmed for complex maritime projects. At the same time, the Data Intelligence Knowledge Base helps company unlock the knowledge while you're working. In this knowledgebase all explicit and implicit knowledge is retained for the future. A new colleague can start working with this knowledge immediately. Therefore all important knowledge remains in your company. It has helped Ulstein to develop at a rapid pace.

Ulstein Case Study:

How does Ulstein go about successful and suitable ship design? Bart Daman, project manager at Ulstein Design & Solutions BV faces this challenge on a daily basis. Daman explains, "For sharing and storing knowledge, the maritime sector still often uses Word and Excel. However, in the current digital era, the methods to collect data and make it easily available have improved a lot. This is why we changed to digital knowledge management in partnership with Shipbuilder a few years back."

Digital knowledge management, according to Daman, is a relatively new development in the maritime sector. "We started talking to Shipbuilder about how we could store our knowledge and make it accessible in a smarter way," said Daman, adding, "We deemed Shipbuilder to be most fit for our purposes. The software is already developed to specifically structure and document ships and ship building processes. Of course, we are ship designers working one abstraction level higher, but the set-up of the software forms an excellent basis. In cooperation with Shipbuilder, we have developed a company specific environment where we can safely document our knowledge of ship design, requirements and component properties."

Daman explains that, in order to survive, the development and application of knowledge management must become a top priority in the maritime sector: "We work on really complex ship designs, with a lot of changes in the process, both big and small. Shipbuilder helps us manage these changes. Clients are impressed by our response time and the consistency of our specs."

Daman has a clear vision. The future will see knowledge management tools being used more and more in the initial client contacts: "Together with the client we can fill in the desired specifications. By leveraging the available semantic knowledge data, we can already show in these first conversations in which direction potential solutions can be found. In this way, we expect to guide and advise our clients even quicker regarding operational requirements and commercial preconditions, realizing the client's most optimal ship design much faster." Daman adds, "We expect this to provide us a constantly growing competitive advantage."

An installation crane vessel with semi-submersible heavy transportation capabilities. This innovative vessel has just been contracted to a shipyard for construction.

Credit: Ulstein Design & Solutions BV

Blount Boats to Build Twin-Screw Tug

Blount Boats has signed a contract with the New York Power Authority (NYPA), the nation's largest state power organization, to construct an ice breaking, all-welded-steel, diesel-powered, double screw tugboat to operate in seasonal ice near the entrance to and within the upper Niagara River. This vessel will replace existing vessels in the NYPA fleet currently used for the installation, removal, and maintenance of the Lake Erie Ice Boom and various associated marine construction projects. The naval architectural and marine engineering firm, Bristol Harbor Group, Inc. developed the contract design and will provide technical oversight during the fabrication process on behalf of NYPA. The 56 foot long, 18.5 foot beam, shallow draft tug will be powered by two Caterpillar series C-9 engines, each 375HP@1800 RPM. The vessel's hull, machinery, electrical systems and safety equipment will comply and, be inspected in accordance with USCG Subchapter M – Towing Vessels. Delivery of the vessel to NYPA's facility on the Buffalo River Entrance Channel is scheduled for fall 2019.

Two New RAstar 3200 Escort Tugs for SAAM SMIT Towage Canada

Robert Allan Ltd. announced that SAAM SMIT TOWAGE CANADA Inc. (SST Canada), a joint venture partnership between Boskalis of the Netherlands and SAAM S.A of Chile, has recently completed the purchase of two new RAstar 3200 escort tugs. These two new escort-rated tugs will join SST Canada's fleet and begin operations in the southern waters of British Columbia. These state-of-the-art tugs will be capable of safely performing all ship-handling roles, including berthing, unberthing, and escort duties, and will considerably increase the ability of the local tug fleet to handle anticipated increases in vessel traffic through British Columbia's southern waters, especially in the context of escort towing.

These new tugs will become both the largest and most powerful escort-rated tugs in the region.

LOA: 32.0 meters	Tonnage, gross registered: 492 GRT	Beam moulded: 12.8 meters
Speed: 13.5 knots	Accommodations: MLC-2006 compliant	Draft, navigational: < 6.0 meters
Class: Lloyds Register	Main Engines: CAT 3516C diesels	Fresh water: cubic meters
Fuel: 193 cubic meters	Depth, least moulded: 5.4 meters	Z drives: Schottel SRP 4000CP

EBDG Designs Bunker Ship for Maxum Petroleum

Maxum Petroleum has taken delivery of their newest tank ship, the Global Provider. The vessel was designed by Elliott Bay Design Group (EBDG) of Seattle, WA and built by Jesse Engineering of Tacoma, WA. The vessel is the first in its design and size for Maxum Petroleum and will be used to deliver fuel and lube oil to ship operators in the Pacific Northwest. The vessel can be used as floating storage during skimming and recovery. Additional onboard emergency safety and rescue equipment includes a Jason's Cradle man-overboard rescue system. EBDG's project scope included concept and contract design, vessel renderings, and regulatory support to obtain United States Coast Guard (USCG) approval and loadline certification from American Bureau of Shipping (ABS).

Island Tug and Barge Christens First of Two Tugboats

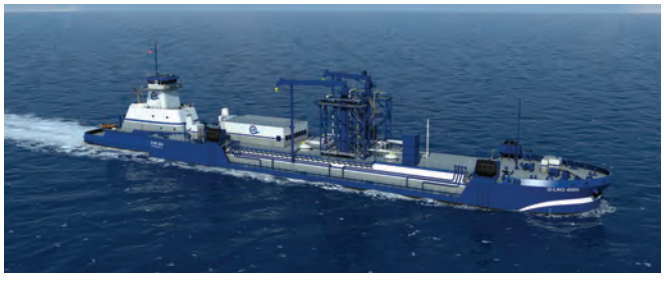
The Island Raider, the newest articulating tug in Island Tug and Barge's (ITB) fleet, was christened Friday, September 28, during an afternoon ceremony at ITB's headquarters in Burnaby, British Columbia. The Island Raider, along with its sister the Island Regent (delivery February, 2019), was designed by Robert Allan Limited naval architects and marine engineers of Vancouver, B.C. to be paired with ITB's double-hulled oil tank barge, the ITB Resolution, as an articulated tug and barge (ATB). Constructed on-site at ITB's Annacis Island facility along the Fraser River in British Columbia, the Island Raider was designed with considerable emphasis on crew comfort and endurance. By incorporating Sika vibration and sound dampening floors, and Norac wall and ceiling paneling, noise levels register at less than 59 decibels in the wheelhouse during vessel operation.

VIMS Takes Delivery of JMS-Designed Research Vessel

The 93-foot research vessel, R/V Virginia has successfully completed sea trials and is currently transiting to its home port in Virginia. The new vessel was built by Meridien Maritime Reparation. JMS Naval Architects performed the concept through contract-level design and provided technical support during construction and sea trials. The Virginia will support the institution's fisheries research projects and greatly expand VIMS' capability to perform general oceanographic research in the Chesapeake Bay as well as mid-Atlantic coastal waters. Interest in the new research vessel is already growing rapidly as next season is almost fully booked with science cruises. JMS designed the vessel to operate as an uninspected research vessel with an ABS Loadline. The design offers flexibility in science outfitting allowing for high utilization and affordable operating day

rates. The vessel is easily adaptable to evolving scientific research areas such as offshore oil & gas exploration surveys, wind energy development surveys, environmental impact studies, and the servicing of ocean observing systems.

Q-LNG, VT Halter Execute LOI for Another Bunker Vessel



Quality Liquefied Natural Gas Transport, LLC (Q-LNG) has executed a letter of intent with VT Halter Marine to construct an 8,000m3 LNG Bunkering Vessel on speculation. Q-LNG and its minority partner, Harvey Gulf International Marine, will own and operate these assets to provide marine transportation of LNG to various ports in Florida and the Caribbean. Q-LNG is currently contracted with VT Halter for the construction of America's first offshore LNG ATB. This ATB will be constructed to meet the requirements of US Flag, ABS Class, and the International Gas Carrier Code and is designed to carry 4,000 cubic meters of LNG, with barge having dimensions of 324' x 64' x 32.6' and the tug having dimensions of 128' x 42' x 21'.

Infrastructure Resource in South Florida

Florida Superior Sand, Inc. recently purchased a DSC Wolverine Class dredge for their sand mine site in Palm City. Florida Superior Sand acquired a DSC Wolverine 10-inch dredge to meet the challenges of their new sand mining operations. Florida Superior Sand chose the DSC Wolverine Class dredge for their location due to its compact size and large pumping volume. DSC's Wolverine Class dredge is manufactured in its entirety at the company's W&S division located in Greenbush, Michigan. The dredge, which is known for its highly portable economical design, features a 25-foot digging depth, and is powered by a CAT C-13 diesel engine.

VT Halter Marine Launches VDOT Ferry

VT Halter Marine announced the successful launch of the Virginia Department of Transportation's (VDOT) newest ferry, the Powhatan. In November 2016, VT Halter Marine was awarded the contract for the design, construction and delivery of the new 499-passenger/70-vehicle ferry that will replace the current vessel, the Virginia, which was built in 1936. It also will meet the accessibility requirements of the Proposed Accessibility Guidelines for Passenger Vessels, United States Access Board. The ferry will be operated by the Jamestown-Scotland Ferry Service. The Jamestown-Scotland Ferry System currently operates four ferry boats, including the Pocahontas, which was also designed and constructed by VT Halter Marine, and delivered in 1995.

LOA: 270 feet	Depth: 15 feet	Capacity: 70 P/V or 14 trucks
Beam: 65 feet	Passengers: 499	Regulatory: ABS / SubH

American Song Successfully Passes Sea Trials

American Cruise Lines announced that American Song has successfully passed Sea Trials. American Song is the second new vessel completed and delivered to American Cruise Lines by Chesapeake Shipbuilding this year. American Harmony, the second modern riverboat in the series, will be completed and delivered in the first quarter of 2019. American Song will cruise a full schedule of 8-day Lower Mississippi River cruises throughout the remainder of 2018 and then will reposition to the West Coast in 2019, for American's Columbia and Snake Rivers cruises beginning in March.

Marine News 2019 Editorial Calendar

JANUARY

AD CLOSE: DEC 21

Passenger Vessels & Ferries

MARKET FEATURE: **Training & Education**

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

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

SPECIAL REPORT: **Simulation Tech & Trends**

EVENT DISTRIBUTION

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

FEBRUARY

AD CLOSE: JAN 24

Dredging & Marine Construction

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

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

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

SPECIAL REPORT: **Inland Port Development**

EVENT DISTRIBUTION

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

MARCH

AD CLOSE: FEB 21

Pushboats, Tugs & Assist Vessels

MARKET FEATURE: **Winches and Capstans**

TECHNICAL FEATURE: **Naval Architects**

PRODUCT FEATURE: **Hybrid Drives**

SPECIAL REPORT: **Thrusters & Inland Propulsion**

EVENT DISTRIBUTION

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

APRIL

AD CLOSE: MAR 21

Boatbuilding, Construction & Repair

MARKET FEATURE: **ATB's**

TECHNICAL FEATURE: **Coatings/Corrosion Control**

PRODUCT FEATURE: **CAD/CAM Software**

SPECIAL REPORT: **Arctic Operations**

EVENT DISTRIBUTION

IRPT Conference

MAY

AD CLOSE: APR 21

Inland Waterways

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

TECHNICAL FEATURE: **Management & Operations Software**

PRODUCT FEATURE: **Marine Jets and Thrusters**

SPECIAL REPORT: **Subchapter M Update**

EVENT DISTRIBUTION

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

JUNE

AD CLOSE: MAY 24

Combat & Patrol Craft Annual

MARKET FEATURE: **Salvage & Spill Response**

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

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

SPECIAL REPORT: **Outboard Engines**

EVENT DISTRIBUTION

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

JULY

AD CLOSE: JUN 23

Propulsion Technology

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

TECHNICAL FEATURE: **Safety & Fire Prevention**

PRODUCT FEATURE: **Workboat Engines**

SPECIAL REPORT: **Ballast Water Treatment**

AUGUST

AD CLOSE: JUL 25

MN 100 Market Leaders

MARKET FEATURE: **Boatbuilders**

TECHNICAL FEATURE: **Marine Operators**

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

SPECIAL REPORT: **Energy Efficiency Systems**

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

SEPTEMBER

AD CLOSE: AUG 24

Vessel Conversion and Repair

MARKET FEATURE: **Offshore Wind**

TECHNICAL FEATURE: **DP Equipment & Training**

PRODUCT FEATURE: **Hull and Deck Coatings**

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

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

OCTOBER

AD CLOSE: SEP 22

Autonomous Workboats

MARKET FEATURE: **Multi-Mission Workboats**

TECHNICAL FEATURE: **Communications**

PRODUCT FEATURE: **Electronics & Navigation Equipment**

SPECIAL REPORT: **Shipyard Exports**

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

NOVEMBER

AD CLOSE: OCT 25

Workboat Annual

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

TECHNICAL FEATURE: **HVAC / Ventilation**

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

SPECIAL REPORT: **The Digitalization of Workboats**

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

DECEMBER

AD CLOSE: NOV 22

Innovative Products & Boats – 2019

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

TECHNICAL FEATURE: **Emissions Compliance and Monitoring**

PRODUCT FEATURE: **Fire & Safety Equipment**

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

EVENT DISTRIBUTION
SNA 2020 - Crystal City, VA

Information may be subject to change

Stormy waters? Heavy lifting?

Whether on land or at sea you can rely on Semperit's Sempercrane 2SN-K premium compact Hydraulic Hose

Stormy waters are only one example of the challenges at sea. Heavy lifting done by cranes under such conditions demands the most of cranes and their components. Therefore, the performance and quality of the components that are involved is essential and are a good reason to choose Semperit Hydraulic Hoses.

For mobile hydraulic applications such as cranes, up and down is a great way to go. After all, that's their job. Hydraulic hoses are just like a muscle; they connect the moving parts of a crane and handle every up–and-down movement without a problem. At icy temperatures in Alaska or in the scorching heat of the Caribbean Sea. The hoses must also withstand pressure up to 6,500 psi.

Extremely low bend radius

The Sempercrane 2SN-K hydraulic hose is especially designed for mobile hydraulic equipment. It is so flexible that it easily takes tight bends at installation. This feature of the 2SN-K enables engineers to design cranes, machines, and engines to be much more compact, with smaller modules and components. In mobile hydraulic machinery, such as cranes, the innovative hose can save up to 100 pounds of weight per 800 feet of hose length when compared to traditional multi-layer hoses.

Outstanding ozone resistance

In operation cranes, excavators, and machines must withstand diverse environmental influences on land and at sea. The same is valid for the hydraulic components. Semperit's Sempercrane 2SN-K has outstanding ozone resistance against harsh environmental influences for an extended hydraulic hose lifetime.

Up to 1,000,000 load cycles

The high durability compared to standard hydraulic hoses is an essential reason to choose the Sempercrane 2SN-K hydraulic hose from Semperit. The efficient combination of a rubber inner liner, wire braid, and rubber cover results in a hydraulic hose that can handle a million load cycles rather than 200,000 for standard hoses. "Our Sempercrane 2SN-K not only has greater longevity, it can also withstand much higher system pressure when mounted in cranes and excavators," explains Philipp Winter from Semperit.

Superior Industries adds Three to Management Team

Garinger

Hrbek

Rodriguez

Superior Industries has appointed **John Rodriguez** to be the firm's first director of products and applications, where he will lead Superior's team of product managers. Rodriguez has more than 30-years of experience the manufacturing sector. **Phil Garinger** has been named as new equipment territory sales manager in Ontario, Manitoba and Saskatchewan. Additionally, he will support dealers in Alberta and British Columbia. Garinger also has experience as an engineer, including mechanical design and teaching. **Brad Hrbek** has joined the domestic equipment sales team. Hrbek, who will celebrate a quarter-century of service to industry next year, is Superior's new equipment territory sales manager in the Southeast United States. Most recently, he had a 13-year career with Trio Engineered Products, where he was responsible for sales support and processing plant design.

Ballard

de Leeuw

Garamendi

Wille Lamb

O'Toole

USMMA Welcomes Academic Dean and Provost

The U.S. Merchant Marine Academy at Kings Point (USMMA) has installed **John R. Ballard**, Ph.D., as the new Academic Dean and Provost. Dr. Ballard will serve as the chief academic officer and principal advisor to the Superintendent in all matters relating to the academic program and faculty. He will also co-chair the educational priority working group for the recently released USMMA Strategic Plan.

Damen Appoints RoPax Sales Director

Damen Shipyards Group has appointed **Chiel de Leeuw** to the position of Sales Director of RoPax. Chiel will be responsible for creating new business in the RoRo and RoPax markets for vessels over 120 meters in length. Chiel is an authority on this vessel class having successfully served as sales manager for Western Europe, a role that involved him in a wide variety of ferry projects. As Sales Director RoPax he has now become the public face of Damen within this sector.

Garamendi is AMP's 'Champion of Maritime'

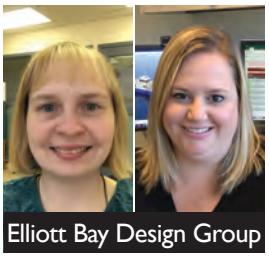
The American Maritime Partnership (AMP) last month recognized U.S. Congressman **John Garamendi** (D-CA) with the 2018 'Champion of Maritime' Award. AMP confers its highest award – the 'Champion of Maritime' Award – to a Member of Congress for extraordinary support and dedication to the American maritime industry. Garamendi's longstanding support for U.S. maritime is demonstrated through his work as ranking member of the House Coast Guard and Maritime Transportation Subcommittee of the House Transportation Committee.

Wille, Lamb Join AAM

Ron Wille has joined the All American Marine (AAM) team as Business Development Manager. Ron has 25 years of experience in the maritime industry, the last 15 of which were spent at Kenai Fjords Tours in Seward, Alaska. During Ron's tenure at KFT, he had the unique opportunity of purchasing and operating three AAM hydrofoil assisted vessels. Separately, **Bronson Lamb** has been named as All American Marine's Marketing Manager. After attending the University of Colorado, Bronson spent seven years in the film and television industry as a producer and editor. He completed his MBA and also started a marketing and advertising agency, of which he is still a partner and advisor.

MJP Names Business Development VP

Marine Jet Power (MJP) announced that **Damian O'Toole** joined the business development team as Executive Vice President of Sales, Marketing and Aftersales Service Solutions. With more than 15 years of executive business management experience, Damian most recently Damian served as a Director of Wärtsilä Seals & Bearings and has served on numerous Boards.



Nichols Schoenberg

Russell

Ruddell

Campbell Tremblay

Tucker

Weik

EBDG Welcomes New Team Members

Elliott Bay Design Group (EBDG) has added another professional to their Ketchikan, Alaska office. **Sarah Nichols** joins the team as a Marine Engineer. Her background includes six years of project engineer and project management experience within a shipyard environment. Additionally, EBDG hired **Julie Schoenberg** as the new Human Resources Manager. She will be responsible for the HR function of the firm. Julie received a BA in Human Relations and Women's Studies with a minor in Finance from Washington State University.

SCAA Announces Leadership Change

The Spill Control Association of America (SCAA) announced the retirement of Executive Director **John Allen** and the appointment of **Justin Thomas Russell** to fill the role within the organization. Allen will remain a member of SCAA as both an individual member and a member of the Past President's Committee. Russell comes to SCAA with a proven record in spill response operations and management. He is a twelve year veteran of the United States Coast Guard and Coast Guard Reserve where he specialized in Marine Safety and Environmental Response.

Ruddell Named Sales Manager at Dawes Rigging & Crane Rental

Joe Ruddell has been promoted to retail sales manager at Dawes Rigging & Crane Rental. Ruddell is celebrating his 20th year with Dawes, the previous 19 serving as rental sales manager for southeastern Wisconsin.

Four Students Receive Thomas B. Crowley Scholarships

Webb Institute announced that the 2018-19 academic year recipients of Crowley Maritime Corporation's Thomas B. Crowley Sr. Memorial Scholarship are **Taylor Campbell** and **Reneé Tremblay**. Separately, two Williams-Mystic Maritime Studies Program students have been awarded scholarships by Crowley Maritime Corporation. **Molly Tucker** and **Colby Weik** were each chosen for their academic excellence, high morale and community involvement. Campbell is an active member of the Webb community and is captain of Webb's first-ever women's basketball team. Tremblay is co-chair of the leadership committee and student public relations chair working with Webb's communications and media relations department. Tucker is a sophomore at Pomona College, where she studies environmental analysis. Weik is a sophomore business major at Wheaton College. Both students have proven themselves as enthusiastic learners with a passion for the maritime industry. Since 1984, Crowley has provided more than $3 million dollars in scholarship funding for more than 1,000 students.

Marad Issues RFP for Long Awaited NSMV

The Maritime Administration (MARAD) in October released a Request for Proposal (RFP) to solicit for a Vessel Construction Manager (VCM) to deliver a new class of training ships referred to as a National Security Multi-Mission Vessel (NSMV). The VCM selected by MARAD will contract with a qualified shipyard to ensure that commercial best practices are utilized in delivering the NSMV on time and on budget. "A new multi-mission vessel built by an American Shipyard will not only create new jobs, but help train the next generation of American mariners and contribute to disaster relief," said U.S. Secretary of Transportation **Elaine L. Chao**. "The U.S. shipbuilding and repair industry is vital to the economic strength and security of our nation," said Maritime Administrator **Mark H. Buzby**, adding, "and this project will demonstrate that American shipbuilding remains the global standard of excellence." The NSMV will help to sustain world-class, U.S. maritime

NSMV Model V12_7_6

Marad

Chao Buzby

Middlebrook

Weeks Marine

training operations at the State Maritime Academies by equipping young American mariners with a modern and adaptable training platform. It will have space for up to 600 cadets to train in a first-rate maritime academic environment at sea. Beyond this, the NSMV will also be available to support federal government efforts in response to national and international disasters, such as hurricanes and earthquakes.

Huntington Ingalls Industries Closes Sale of Avondale

Huntington Ingalls Industries (HII) announced the closing of the sale of HII's Avondale facility to Avondale Marine, a joint venture between T. Parker Host and Hilco Redevelopment Partners. The Avondale facility, part of HII's Ingalls Shipbuilding division, ceased its Navy shipbuilding operations in December 2014. Avondale's UNO Maritime Center of Excellence has remained open and continues to do engineering and design work in support of Ingalls' shipbuilding programs. T. Parker Host is one of the nation's largest terminal operators, specializing in agency, terminal operations and marine assets. Hilco Redevelopment Partners remediates and redevelops large-scale industrial facilities across North America.

Strong Seaway Tonnage Numbers Realized in August

St. Lawrence Seaway traffic continues to see steady growth in 2018 with year-to-date total cargo shipments through August of 21.4 million metric tons, a four percent increase over the same time frame last year. Total vessel transits were up by 5 percent over the same time in 2017. Top performing cargoes 2018 include Coal (+ 30.1%), U.S. Grain (+31.1%), Liquid Bulk (+33.4%), Ore & Concentrates (+180.8%), Pig Iron (+61.1%) and Steel Slabs (+51%). **Craig H. Middlebrook**, Deputy Administrator of the Saint Lawrence Seaway Development Corporation, said, "The overall four percent increase in total cargo compared to the same time frame last year, March 29 – August 31, reflects solid gains in U.S. grain exports and liquid bulk commodities. The Seaway enjoyed its strongest August over the last four years. This is good news as we pass the mid-point of the navigation season." Additionally, the U.S. ports of Cleveland (Ohio) and Burns Harbor (Ind.) reported notable activity in August.

GLDD Wins $48 Million Tampa Deepening Award

Great Lakes Dredge & Dock Corporation (GLDD) announced the receipt of a $48 million base contract award on the Big Bend Channel of the Port of Tampa Bay. Great Lakes expects the United States Army Corps of Engineers to award additional option work items on the contract by early-2019 with a value of $25 million, resulting in a total contract award of $74 million. Dredging is expected to commence in the fourth quarter of 2018 with completion of both base contract and expected options in the third quarter of 2019. Port Tampa Bay is Florida's largest and most diverse seaport, supporting liquid and dry bulk raw materials, container cargo and one million plus cruise passengers each year.

Weeks Marine Receives First Sub M COI in New York

On September 5, 2018, Weeks Marine was presented with the first issued Certificates of Inspection (COIs) for achieving full compliance with new USCG "Subchapter M" regulations on the 2,000 HP Tug Elizabeth and the 3,000 HP Tug Katherine. Commander Jacob Hobson from Coast Guard Sector New York Waterways Branch presented the COIs to Ronnie Clifford, WMI Towing Compliance Officer, and Shaun O'Brian, WMI Towing Sr. Port Engineer.

LGC NCOE Trains Future LNG Fueled Vessel Inspectors

The Coast Guard's Liquefied Gas Carrier National Center of Expertise (LGC NCOE) partnered with Coast Guard Sector Jacksonville to coordi-


Credit: TOTE

Tote's bunkering operations in Puerto Rico

Cummins Alaska

nate a four-day "LNG as Fuel Workshop" Sept. 17-20, 2018, for future inspectors of LNG fueled vessels, with support from industry experts and the Coast Guard's Marine Safety Center. The 'LNG as fuel' specialists provided Coast Guard marine inspectors from across the U.S. with an in-depth understanding of LNG fueled engines, bunkering evolutions, risk analysis, membrane containment systems, type C tanks, vessel operations, plan review, and firefighting techniques. The team was comprised of representatives from Texas A&M's Emergency Services Training Institute, Pivotal LNG, ABS Consulting, Tote, Crowley, ABS's Global Gas Solutions Team, DNV-GL, Chart Industries, and OCS Group. The workshop consisted of classroom instruction, exercises, a live LNG demonstration, a trip to observe bunkering operations, and a tour of the LNG fuel system aboard the Tote operated vessel, Isla Bella.

NOSAC's September Meeting Recap

Representatives from the Coast Guard, offshore oil and gas industries, recognized organizations and numerous industry associations attended the National Offshore Safety Advisory Committee (NOSAC) semi-annual public meeting in Houston, Texas Sept 11, 2018. Rear Adm. **John Nadeau**, assistant commandant for prevention policy, attended the meeting and discussed with the Committee the new Coast Guard commandant's strategic vision for the service as well as the reorganization within the Office of Commercial Vessel Compliance to put an increased emphasis on Third Party Organization oversight. Agenda items included lessons learned from the 2017 hurricane season, and the Committee stood up a new Subcommittee to examine the use of OSVs and other vessels to assist with restoration and recovery operations. The U.S. Coast Guard promulgated CVC Policy Letter 17-06 (CH-1), which expired January 2018, to temporarily address specific relief vessel requirements. This policy letter was predicated on the legal ability for a vessel to be endorsed for multi-service on the certificate of inspection. The Coast Guard is seeking NOSAC's assistance with identifying areas that need to be addressed for a national-level compliance standard. The next meeting of the Committee is scheduled for March 20, 2019 in New Orleans.

Cummins Expands Alaska Support Capabilities

Cummins last month announced the opening of a new Cummins field service location in Dutch Harbor, making it the fourth Cummins support location in Alaska. The new location joins an Alaska support network that includes a field service location on Kodiak Island and two full service shop locations in Fairbanks and Anchorage. The new location enables Cummins to provide enhanced on-Island support for the commercial fishing market, as well as to the businesses that support the fishery. Genuine Cummins and Fleetguard parts inventory on site will be utilized to support marine, automotive, power generation and industrial markets.

YANMAR America Adds Three Repower Centers

YANMAR America's Commercial Marine Division has announced the addition of three new Repower Centers to its distribution network: Kennedy Engine in Biloxi, Mississippi; Sun Power Diesel in Dania Beach, FL and Todomar in Colombia. "YANMAR is looking to add local market experts to our distribution network. Kennedy Engine, Sun Power and Todomar are a good match due to their regional knowledge of applications and customers in terms of needs and expectations," commented **Terry Wallace**, Division Manager for YANMAR America Commercial Marine.

OT&BE Joins HYPERION Marine Engineering Group

Ocean Tug & Barge Engineering Corporation is now a member of the Hyperion Marine Engineering Group headquartered in Portland, Maine. CT Marine & Buoyancy Consultants formed Hyperion three years ago recognizing a need for an integrated naval architectural & marine engineering firm to serve the inland and offshore tug


Nadeau


Wallace

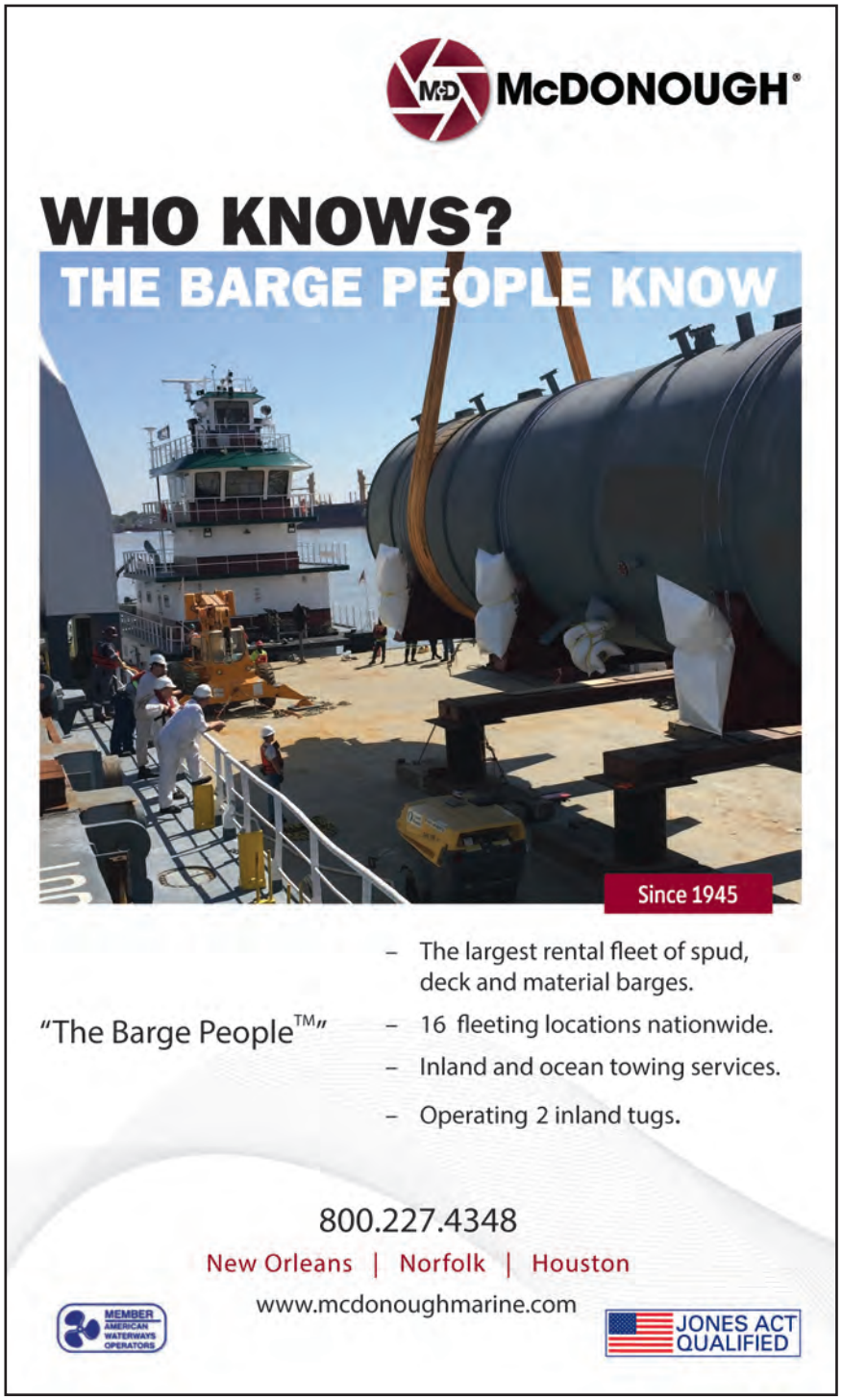

Hill


deBruyne

and barge industry that incorporates a capability for conceptual through highly detailed production design, all under one corporate roof. "Historically, our biggest challenge at Ocean Tug & Barge Engineering was the high demand for our services verse the size of our staff. The quality of the design work OT&BE does is among the very best in the industry, but our small staff, sized to my own choices/preferences, coupled with high demand for our services, slowed our design work significantly. As President of the firm, I have been determined to solve that problem, and now we have," said Robert P. Hill.

Helm Operations Joins Volaris Group

Marine operations software company Helm Operations announced today that it has been acquired by Toronto-based Volaris Group. Volaris specializes in strengthening and growing technology companies and is a leader in the marine software space. Following an acquisition by ClassNK in 2014, the company released its newest platform, Helm CONNECT, in 2016. **Ron deBruyne**, CEO of Helm Operations, said, "Now, as part of Volaris, we look forward to building on that strong foundation, accelerating our growth in North America and internationally, and providing even greater value to our customers." Helm Operations will maintain its own brand and independence with support and resources from Volaris.



In-Mar Solutions: Alu Pilot Chairs & Deck Rails

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

www.inmarsolutions.com

Ingersoll Rand ELK Series Electric Chain Hoists

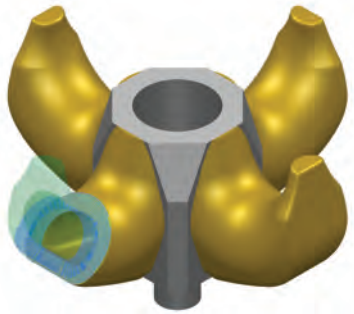
Ingersoll Rand's ELK Series Electric Chain Hoist has modular features that make it easy to maintain, reducing time required for maintenance and training. The hoist's modern design makes it lightweight and accessible. Able to be serviced while still mounted; the hoist's external motor is easy to remove and minimizes disassembly time. The self-contained gearbox requires minimal maintenance since it includes permanent lubrication, and has less parts and complexity.

www.ingersollrandproducts.com

Lankhorst Fluorescent Rope Increases Mooring Safety

Lankhorst Ropes has introduced the maritime industry's first fluorescent mooring rope, one of the many new safety and performance Lankhorst rope developments seen this year. For example, providing tug operators with a quicker and safer connection during towing, Lankonect is a synthetic fiber rope connection for the main tow line that replaces a conventional cow hitch, shackle or similar hardware.

www.lankhorstropes.com



Huisman, RAMLAB Collaborate on 3D Printed Steel Crane Hook

Huisman and RAMLAB will produce a large offshore crane hook using the 3D printing technique. The hook, based on a Huisman 4-prong hook design, will employ 3D printing benefits. The product will be hollow, saving on material usage and production lead time and will be the world's largest 3D printed steel product in terms of weight. DNV GL, Bureau Veritas and ABS, have joined this project.

www.huismanequipment.com

Yale Cordage Acquires Large Test Bed

Yale Cordage has acquired a Sahm Splice test bed for destructive and non-destructive testing of synthetic rope, wire rope, shackles, chain, and slings up to 1,300,000 pounds in tensile and a low-range capacity of up to 250,000 pounds. With a maximum test sample length of 116 feet with a 15 foot stroke, it is one of the largest and most capable test beds in the eastern United States.

www.yalecordage.com

MagnaShear Motor Brakes for Bulk Material Handling

The MagnaShear motor brake from Force Control Industries employs oil shear technology, providing longer service life for demanding applications like frequent start/stop cycles on conveyors, and critical holding applications like bulk conveyor loads. Oil shear technology transmits torque between lubricated surfaces, eliminating wear on friction surfaces. Elimination of the wear significantly increases service life, making this technology ideal for loader/unloader conveyors and ship loading conveyors.

www.forcecontrol.com

Radio Remote Controls for Hoists & Cranes

J D Neuhaus (JDN) has enhanced its remote control capabilities to bring ease-of-use and convenience to users. Three models are now available, RC-X, RC S and RC-SP, each comprising of a transmitter and receiver and all can either be integrated in existing JDN solutions or directly combined with a new JDN hoist. The new JDN receiver is rigid and extremely compact and seawater-resistant for offshore applications.

www.jdngroup.com

SHOXS Shock-Mitigated Seat Pedestals – The X-Series

SHOXS all-new series of marine-grade seat pedestals, the X-Series, feature the same heavy-duty, shock-absorbing isolators that SHOXS installs into its military line of seats. An adjustable air shock and optional height adjust allow mariners to experience smoother, safer rides in rough seas. The pedestals can be packaged with a SHOXS 3200, 3400, or 3700 bucket seat, or sold separately for use with nearly any aftermarket marine seat.

www.shoxs.com

Caterpillar Marine's Next Generation Azimuth Thrusters

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

www.caterpillar.com

VEM Technology Leads for Royston

Diesel power specialist Royston's VEM technology, which provides information about a vessel's architecture and energy levels, as well as efficiency improvement recommendations, is part of Royston's enginei product, which delivers cost savings and operational efficiencies for offshore vessel and workboat operators. The system can incorporate an unlimited number of sensor inputs and interpret the information into data, which the operator can use to improve performance optimization.

www.enginei.co.uk

Vigor Selects MJP Waterjets

Marine Jet Power (MJP) has been selected by Vigor as the propulsion provider for the U.S. Army's Maneuver Support Vessel (Light) project. The new generation of landing craft for the U.S. Army will feature triple drive MJP 750 DRB waterjets. MJP will deliver 45 shipsets. The 750 DRB waterjets are constructed from duplex stainless steel, featuring an inboard hydraulic system and an integrated electronic control system.

www.marinejetpower.com

Vesdavit's Virtual Reality Training

The recently developed Vestdavit Virtual Reality (VR) training kit allows customers easy access to useful and realistic davit training. The operator goes through the full sequence of launching and recovering the boat from the davit. The VR remote control is the same controller that is also used for operating the actual davits. This enables the operator to quickly develop a familiarity and comfort level with the davit system.

www.vestdavit.no

Another Operator Chooses MobileOps

MobileOps has recently signed a term contract with inland river transportation company Crounse Corporation. MobileOps software, a cloud-based subscription solution that includes Vessel Management, Safety & Training, Jobs & Dispatch, Timecards and Analytics features, will assist Crounse with vessel and safety management, as well as auditing processes. MobileOps Web can be utilized on computers, smartphones and tablets with Voyager being available on computers and tablets.

www.mobileops.co

John Deere's 4045SFM85 Marine Engine Now Available

John Deere Power Systems is now shipping the new PowerTech 4045SFM85 marine engine to boat owners and builders. Its high power-to-weight ratio delivers impressive torque in a compact engine package, making it an ideal choice for planing and semi-displacement hulls. The new engine has two ratings, both ideal for light-duty commercial vessels and high-speed governmental applications, and providing good fuel economy and higher speeds.

www.JohnDeere.com

KOHLER Enhances Marine Generator Distribution Network

KOHLER has added Engines Inc. of Jonesboro, Arkansas, to the company's nationwide distribution network for marine generators. Engines Inc. will now be the exclusive distributor for KOHLER marine generators in a territory encompassing Texas, Arkansas, Oklahoma, and western Tennessee. The new partnership further solidifies the representation for KOHLER marine generators in commercial markets.

The company offers a full range of USA manufactured power solutions.

www.Kohler.com

Wärtsilä 34DF Engine is EPA Tier III Certified

Wärtsilä's 34DF dual-fuel engine has been awarded the USA EPA Tier III certification for diesel mode operation when installed together with the Wärtsilä NOx Reducer (NOR) system. The Wärtsilä NOR is a selective catalytic reduction (SCR) system that converts nitrogen oxides (NOx) with the aid of a catalyst into diatomic nitrogen (N2) and water. Wärtsilä is the first engine manufacturer to be awarded this certification.

www.wartsila.com

A Mercury Marine-Powered Test Run Around Manhattan

Hurtling down the Hudson River in New York City at 65 mph on a 40-ft. Invincible catamaran, powered by four 350-HP Mercury outboard engines, is a great way to spend a morning. Mercury Marine was in town to offer test drives on a variety of new boats. The modern outboard engines are powerful and quiet, offering an amazing, smooth ride amid significant wind and chop.

www.mercurymarine.com

IMTRA Helps Hardworking Pilots

IMTRA's products – Offshore series LED deck lights, Colorlight searchlights, DHR navigation lights, Exalto and Roca windshield wipers, NorSap pilot chairs and Zipwake dynamic trim control systems – are in use by pilot boat associations throughout the United States. IMTRA supports the American Pilots Association and its members with products for pilot boats to increase functionality and longevity. Such products include DHR LED lighting, wipers and seating.

www.imtra.com

HII, 3D Systems Accelerate 3D Printing in Naval Shipbuilding

Huntington Ingalls Industries' Newport News Shipbuilding division has partnered with 3D Systems to develop additive manufacturing technologies expected to accelerate the adoption of metal 3-D printing for naval shipbuilding. Part of a significant technological transformation underway at Newport News called integrated Digital Shipbuilding (iDS); 3D Systems delivered and installed the ProX DMP 320 high-performance metal additive manufacturing system at Newport News.

www.3dsystems.com / www.huntingtoningalls.com

Sensor Fusion Powers Safe Navigation with Konsberg's IBS

Kongsberg's autonomous vessels program is improving the operational and safety performance of manned vessels with the launch of a new generation of Integrated Bridge System (IBS). Kongsberg Maritime has developed a cutting-edge, integrated technology platform designed to deliver complete situational awareness through the process of Sensor Fusion, where traditional navigation sensors such as Radar and Sonar are combined with cameras and lasers.

www.km.kongsberg.com

Sea Machines Delivers Autonomous Tech

Sea Machines Robotics' products, SM300 and SM200 bring advanced autonomy within reach for small- and large-scale operators. Already in use in North America and Europe, Sea Machines' products unlock real value in commercial vessel operations by providing major advances in productivity, predictability, performance and safety. The SM200 provides fully integrated, line-of-sight and remote-vessel control for collaborative vessel operations.

www.sea-machines.com

Wing Inflatables Announces New Certifications

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

www.inflatablesolutions.com

Helm CONNECT

Foss Maritime Centralizes Vessel Operations with Helm CONNECT

Foss Maritime has announced that they have kicked off a company-wide project to centralize fleet management and operations with Helm CONNECT, a marine software platform. The announcement comes as Foss moves forward on an initiative to better organize and streamline operations across core business units and wholly-owned subsidiaries along the U.S. West Coast, and in Hawaii and Alaska.

www.helmoperations.com

Optimarin BWTS Chosen for USCG OPC Program

Eastern Shipbuilding Group (ESG) has selected Optimarin to supply the BWTS for nine Offshore Patrol Cutters (OPC) to be built at their Panama City, FL shipyard. The agreement with ESG will see the Optimarin Ballast Systems (OBS) fitted in the new OPCs. The OBS utilizes a combination of filtration and powerful UV lamps to treat ballast water without the need for chemicals. The systems are simple to operate, maintain and due to their modular design can be fitted in vessels where available space is at a premium.

www.optimarin.com

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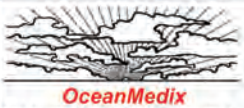

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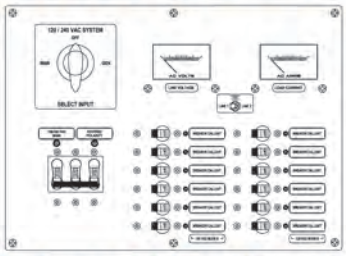
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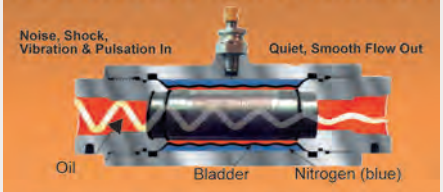

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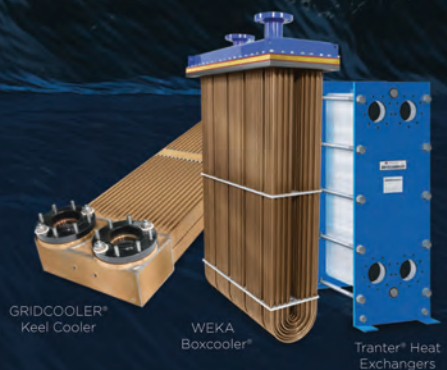

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