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Marine News

NOVEMBER 2015
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MARITIME SECURITY

32 License Defense as a Recruiting Tool
The effort to attract and retain the best and the brightest officers can be enhanced by incentivizing personnel.
By Randy O'Neill

BOATBUILDING

38 Outfitting the Modern Workboat
Wishful thinking operators should have wish lists, ponder what is possible – and then, what is affordable.
By Joe Hudspeth

FINANCING INFRASTRUCTURE

44 A New Toolkit for Planning Port Investment
The U.S. Maritime Administration's Port Planning and Investment Toolkit expedites and coordinates different sources of funding.
By James A. Kearns

WORKBOAT DESIGN

68 Marine Closure Selection
Windows, doors and hatches are an essential and integral part of any commercial vessel.
By Craig Ritchie

WORKBOAT EQUIPMENT

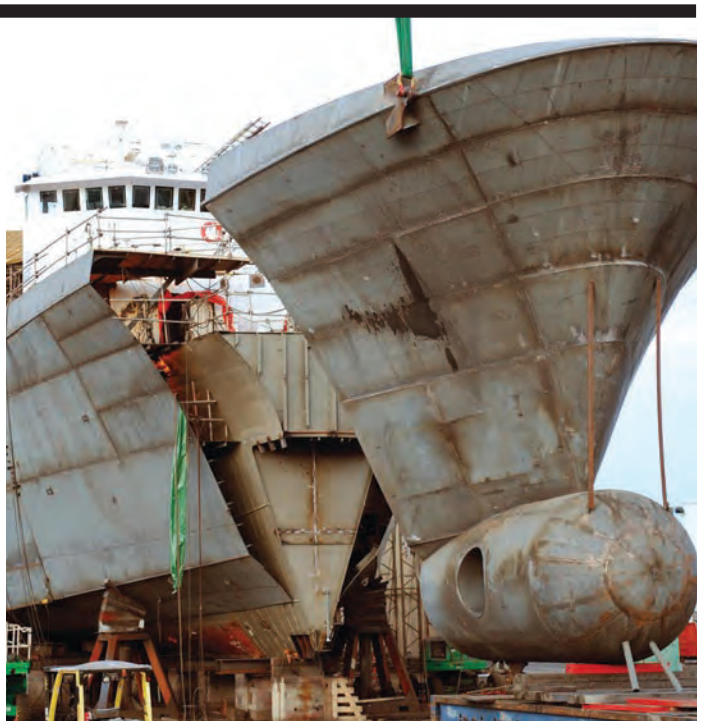
76 Pipe Dream
Non-traditional piping systems are safely making inroads on today's workboats – for all the right reasons.
By Joseph Keefe

WORKBOAT REGULATIONS

84 Three for the Money
MarineCFO, RINA and TBS combine their collective expertise to bring value, compliance and, more importantly – safety – to the sub M space.
By Joseph Keefe

DYNAMIC POSITIONING

89 Offshore Operations and DP Training on a Collision Course for Safety
Fledgling OSVDPA seeks to train, assess and certify DPOs by year's end.
By Joseph Keefe



Credit: Vigor

Features

48 Fishing Vessels: the Ultimate Workboats
The domestic commercial fishing fleet retools with state-of-the-art tonnage, supported by innovative financing parameters.
By Kathy A. Smith

56 Powerful by Design
Karl Senner's collaborative effort with the Shearer Group employs a Steerprop solution.
By Joseph Keefe

62 Marad Propels Marine Engine Technology Development
The U.S. Maritime Administration has provided $3 million to keep marine environmental efforts on track.
By Joseph Keefe

ON THE COVER

The *M/V Rick Calhoun* is said to be the largest towboat built in the last 40 years for river service, as well as the highest horsepower twin-screw ever built. Notably, Gulf Island Marine Fabricators has two sister vessels for Marquette Transportation under construction, scheduled for delivery in 2016.

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Departments & Analysis

6 **Editor's Note**

8 **By the Numbers**
Safety and the Environment – as defined by IMCA

14 **Insights: Randall Luthi**
President, National Ocean Industries Association (NOIA)

20 **OP/ED**
Sediment Recycling for the Greater Good
By Sean Duffy

24 **OP/ED**
Proposing Multi-Purposing... NESP is the Ticket
By Michael J. Toohey

28 **Insurance**
D&O Liability Insurance
By Francis Kean

94 **Tech File**
Cranes and Dredging: a Clean Fit

96 **Boat of the Month:**
M/V Rick Calhoun

97 Vessels
100 People & Company News
104 Products
108 Classified Advertising
112 Advertiser's Index

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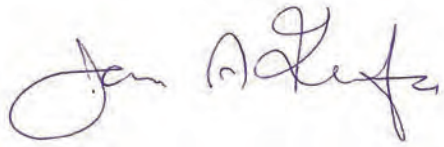
Our Workboat Annual edition of *MarineNews* always gets me to thinking about many things, but two concepts always seem to wind up first and foremost in my mind. First, we find ourselves in an interesting period for the domestic workboat markets, one that is experiencing some big waves and, at the same time – some similarly deep troughs – all of which comes with a bit of chop and whitecaps. For any marine stakeholder on the domestic, commercial waterfront, that comes with the voyage plan. You plan for it, adjust course along the way, and sometimes, find yourself riding out the bumpy storm.

Leaving the nautical metaphors and nomenclature aside for just a moment, the second part of the workboat equation brings an incredible variety of missions, vessel types and job descriptions. No other sector can say that. And, for all the angst that perhaps the downturn in energy prices and the low water period being experienced by the bulk and coal sectors does bring, there are also bright spots. Boat builders for the workboat sector can take refuge in the fact that as one sector takes a (hopefully) momentary breather; another will heat up to take the slack out of that frayed lifeline. Believe it or not, that's exactly what is happening as we go to press.

This month, for example, we traveled to the Pacific Northwest to take a focused look at the commercial fishing markets, where – as it turns out – a robust recapitalization of seagoing assets is well underway. Hardly immune to the same market pressures facing every other workboat sector, commercial fishing also has a different financial model under which vessels can be replaced and/or refurbished. West coast-based *MarineNews* contributor Kathy A. Smith's take on this sector is therefore a breath of fresh air for anyone who thought shipyard backorder books might be looking a little thin.

Back in the heartland, St. Louis-base attorney James Kearns takes us along the (successful) journey of one port's innovative quest to finance a remarkable stretch of intermodal infrastructure along the mighty Mississippi River. The new South Harbor of America's Central Port, located just north of downtown St. Louis in southwestern Madison County, Illinois is arguably the new poster child for what can be accomplished in a climate where funding can otherwise be hard to come by. Believe it or not, the U.S. Maritime Administration is a big part of that story. They're from the government – and they are here to help. Go figure. That story begins on page 44.

Almost 18 years after my entry into the world of maritime journalism, I've (finally) learned that I probably shouldn't make predictions. That's because this 'workboat' business has a tendency to surprise us all when we least expect it. The state of global energy in the 4th quarter of 2015 is an excellent case in point. Nevertheless, I find myself tempted to dip my toes into the water by saying that 2016 will bring even more surprises. Yes, this time, I'm certain that I am right!



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Safety and the Environment – as defined by IMCA

The International Marine Contractors Association (IMCA) is the international trade association representing companies and organizations engaged in delivering offshore, marine and underwater solutions. IMCA operates with a global focus via a structure of technical committees made up of experts elected from member companies. A respected voice around the world promoting good practice, particularly in the areas of health, safety and environment, 1,000+ member companies derive countless benefits from IMCA. With a core purpose of improving performance in the marine contracting industry by championing better regulation and enhancing operational integrity, IMCA's online library holds over 200 guidance documents. IMCA further underscores that role by publishing an annual report entitled *Safety and Environmental Statistics for IMCA Members*. This month, ***MarineNews*** presents, By the Numbers, a snapshot of those findings which cover fatalities, injuries and environmental indicators.

The statistics record the safety and environment performance of IMCA contractor members each year and enable respondents to benchmark performance. It is important to note that safety statistics recorded by IMCA members are consistent with those of other main industry trade associations, International Association of Oil & Gas Producers (IOGP) and International Association of Drilling Contractors (IADC).

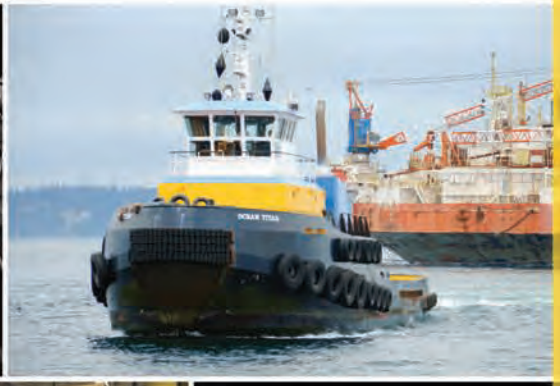
Statistics were provided by 264 companies representing 60% of the contractor membership(excluding drilling contractors who report as part of a greater group), based upon 798 million man-hours of work overall (558 million man-hours offshore). Environmental data of one form or another was provided by 59% of members. This year, IMCA contractor members' lagging safety indicators have worsened very slightly, though the "flatline" tendency has continued in the longer term. There were fewer fatalities (6) this year than last year (9).

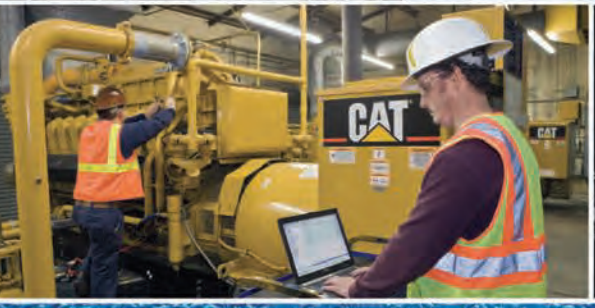
Although IMCA encourages all contractor members to take part in this safety statistics exercise, doing so is not mandatory, and statistics are submitted on a voluntary basis on the understanding of complete anonymity. As in previous years, data are separated into offshore and onshore activity to improve consistency in the data collected. The offshore statistics cover offshore work only, whereas the inclusion of onshore work covers such areas

	2014	2013 (revised)	2013 (original)
Overall Lost Time Injury Frequency Rate (overall LTIFR)	**0.54**	0.54	0.37
Overall number of Lost Time Injuries	**424**		474
Overall Total Recordable Injury Rate (TRIR)	**2.18**	2.12	1.47
Overall Fatal Accident Rate (FAR)	**0.75**	1.00	0.69
Offshore Lost Time Injury Frequency Rate (offshore LTIFR)	**0.65**	0.57	0.35
Offshore Total Recordable Injury Rate (TRIR)	**2.60**	2.27	1.37
Offshore Fatal Accident Rate (FAR)	**0.72**	1.15	0.69
Onshore Lost Time Injury Frequency Rate (onshore LTIFR)	**0.28**	0.46	0.46
Onshore total recordable injury rate (TRIR)	**1.18**	1.81	1.81

Table 1: Summary of IMCA safety statistics for 2014 (last year's figures in brackets)

FULL SPEED AHEAD





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as fabrication yards and office work. For the purposes of these safety statistics, "inshore" work (for example in the renewables sector) is considered to be offshore rather than onshore.

Environmental Indicators: This is the third year that IMCA has collected information from contractor members on their environmental performance and IMCA collected data as follows:

- *Number of oil spills per million man-hours worked;*
- *Liters of oil spilt per million man-hours worked;*
- *Bunkers used (either in tonnes or in cubic metres) per million offshore man-hours worked;*
- *Megawatt-hours (not kilowatt-hours) electricity used per million onshore man-hours worked;*
- *Tonnes of non-hazardous waste per million overall (offshore and onshore) man-hours worked;*
- *Tonnes of hazardous waste per million overall (offshore and onshore) man-hours worked.*

88 contractors (78 last year) reported having spilled oil, and 77 (73 last year) reported the quantity spilled. IMCA members reported a total of 674 oil spills (682 last year). "Oil" is not at this stage more closely defined – hydraulic oil, engine oil, any non-aqueous petroleum-based fluid. Amount of bunkers used was reported by 160 contractors (155 last year), of whom 12 reported by both weight and volume. Some of the data was reported in different units to that required, leading to indications that bunkers used were one, two or even three orders of magnitude (1000x) greater than what was likely given the number of offshore man-hours involved and the possible number of vessels involved. On this basis, data from 9 contractors were omitted from the calculations used to derive an IMCA indicator.

This year, IMCA will publish a short summary leaflet or downloadable report summarizing the 2014 statistics, while continuing to publish this detailed statistical analysis of the safety data in this separate information note.

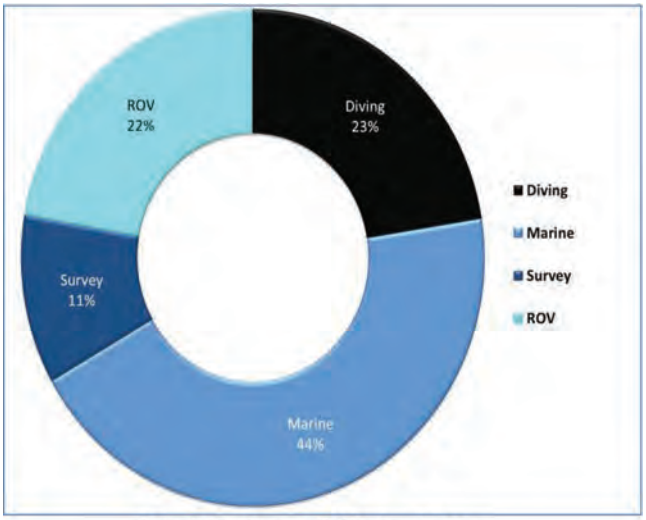

Figure 4: Contributors by IMCA technical division

Comparison of Overall Total Recordable Injury Frequency Rates (TRIR) between Trade Associations										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
IMCA	5.41	4.14	4.38	2.50	2.54	2.74	2.40	1.93	2.12	2.18
IOGP	3.05	2.92	2.68	2.08	1.75	1.68	1.76	1.74	1.60	1.54
IADC	11.71	10.85	10.24	9.11	6.12	6.55	4.17	4.41	4.03	3.76*

Table 2: Comparison of trade association TRIR **Q4 results only*

	Spills	Amount spilt	Bunkers (volume)	Bunkers (weight)	Electricity (MWh)	Non-hazardous waste	Hazardous waste
No. of contributors	88	77	96	74	129	155	106
Minimum	0.00	0.000	3.04	2.98	0.67	0.16	0.01
Maximum	90.22	4728.5	558523	558523	63274	7670	2070
Average	7.03	239.7	25435.0	27958.5	2824.6	515.4	128.5
IMCA	**0.76**	**218.6**	**358563.6**	**19978.1**	**12960.8**	**894.7**	**106.5**

Table 6: Environmental indicators, 2014

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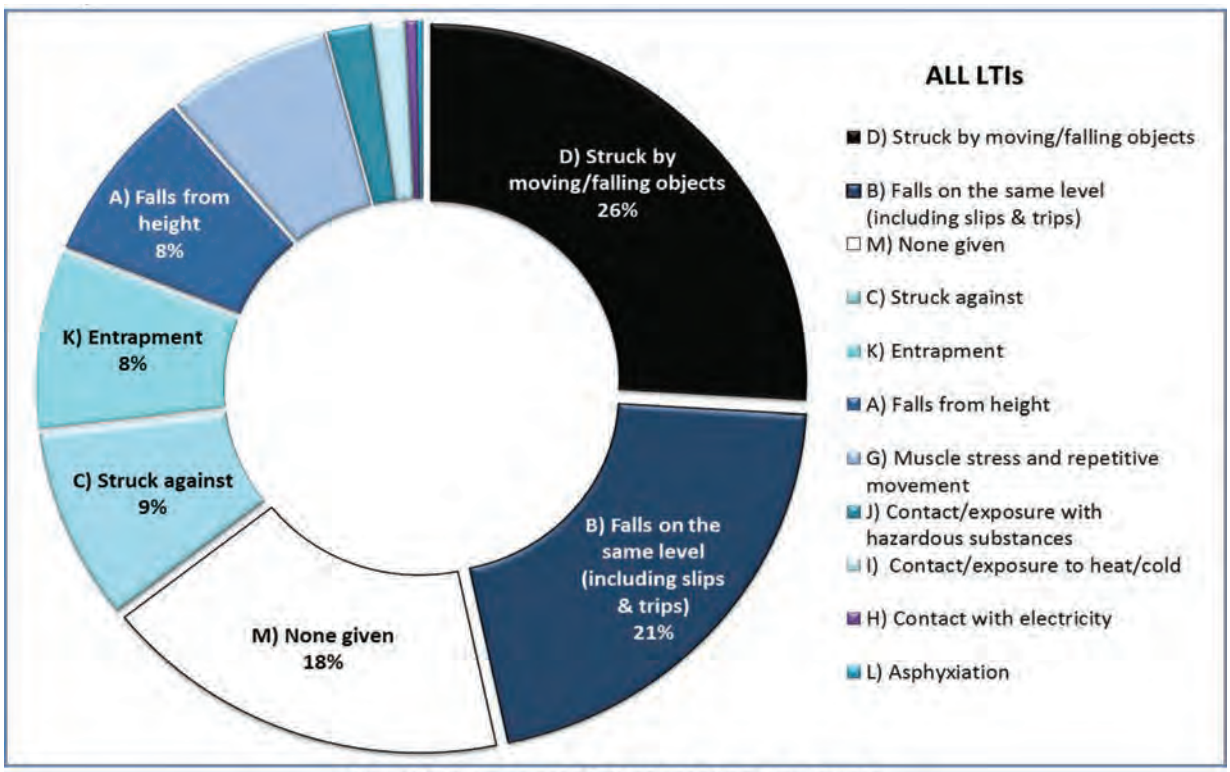

Figure 9: Direct causes of all reported Lost Time Injuries

	Overall								Offshore					Onshore			
	Contractors	Million hours worked	LTIs	LTIFR	Fatalities	Fatal Accident Rate	Recordable injuries	TRIR	Million hours worked	LTIs	LTIFR	Fatal Accident Rate	Recordable injuries	TRIR	Million hours worked	LTIFR	Fatal Accident Rate	TRIR
1997	23	47.6	236	4.96	3	6.3												
1998	32	52.9	257	4.86	2	3.8												
1999	28	52.8	196	3.72	4	7.6												
2000	31	65.6	227	3.46	5	7.6					4.25	10.1				1.05		
2001	32	54.5	162	2.97	4	7.3					3.77	10.1				0.86		
2002	32	197	244	1.24	3	1.52			62		2.96	4.83			135	0.44	0	
2003	31	200	198	0.99	5	2.49			66	133	2	6.03			134	0.49	0.75	
2004	36	145	164	1.13	3	2.06	645		72	120	1.65	2.75		8.87	72	0.61	1.39	
2005	51	160	189	1.18	6	3.13	864	5.42	102	172	1.69	3.93	742	7.29	58	0.29	1.73	2.1
2006	74	221	226	1.02	6	2.72	914	4.14	186	196	1.06	3.23	807	4.35	35	0.86	0	3.05
2007	100	310	339	1.09	6	1.94	1356	4.38	252	315	1.25	2.38	1180	4.68	58	0.42	0	3.05
2008	129	612	433	0.72	7	1.14	1531	2.5	465	341	0.74	1.08	1176	2.53	148	0.64	1.35	2.4
2009	152	602	395	0.67	6	1.00	1530	2.54	474	340	0.73	1.27	1291	2.72	127	0.43	0	1.88
2010	172	547	393	0.73	7	1.28	1499	2.74	389	328	0.86	1.29	1240	3.19	158	0.43	1.27	1.64
2011	195	583	370	0.64	3	0.51	1400	2.40	431	303	0.71	0.70	1133	2.63	152	0.44	0.00	1.76
2012	227	945	467	0.51	14	1.69	1825	1.93	655	357	0.57	2.14	1274	1.95	291	0.39	0.69	1.90
2013	245	901	474	0.54	9	1.00	1837	2.12	607	341	0.57	1.15	1378	2.27	293	0.46	0.68	1.81
2014	**264**	**798**	**423**	**0.54**	**6**	**0.75**	**1736**	**2.18**	**558**	**358**	**0.65**	**0.72**	**1453**	**2.60**	**239**	**0.28**	**0.84**	**1.18**

Table 3: Summary of IMCA safety statistics 1997-2014

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America's Offshore Energy Industry

President, National Ocean Industries Association (NOIA)

Randall Luthi is President of the National Ocean Industries Association (NOIA), a Washington-based advocacy group dedicated, among other things, to the safe development of offshore energy. He sat down with *MarineNews* in October to provide his perspective – reflective of the more than 300 NOIA member companies – on the matters of providing environmental safeguards, equipment supply, gas transmission, navigation, research and technology, shipping and shipbuilding to the offshore industry.

The offshore energy business is without question at a critical juncture. Faced with similar issues as those experienced in the great downturn in the mid-1980's, the key to the future may well reside in not making the mistakes of the past. This month, and just in time for the annual Workboat edition of *MarineNews*, Luthi weighs in on all of it.

The offshore energy business is without question at a critical juncture. Faced with similar issues as those experienced in the great downturn in the mid-1980's, the key to the future may well reside in not making the mistakes of the past. These include the loss of key personnel to other industries. What's your take on how industry can do just that?

Before the downturn of oil prices in the last year, the oil and natural gas industry was already facing what many referred to as the "gray tsunami," meaning the expected retirement of many experienced employees. The collapse of oil prices has exacerbated this phenomenon. Companies are reducing the number of employees as they adjust costs to revenue. Often the two groups most affected are those nearing retirement (thus able to take early out packages) and those most recently hired. So, the trick is keeping a sufficient mix of old timers and new blood to facilitate ramping back up quickly once oil prices recover. Companies with more capital are better positioned to withstand the pressure to reduce employees that eventually will be key to recovery. Unfortunately, many of those laid off will move to other industries that are hiring, and are unlikely to return.

NOIA has stated that the proposed Well Control Rule may actually be so prescriptive that it might actually result in decreased safety offshore, undermining the intent of the rule. How so?

BSEE's proposed action represents one of the most substantial rulemakings in the history of the agency and its predecessors. NOIA requested that the comment period be extended by 120 days, until October 14, 2015. On June 2,

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2015, BSEE granted a 30-day comment period extension to July 16, 2015. NOIA joined other trades in comments on the proposed rule which were submitted on July 26. BSEE is currently reviewing industry comments – as well as comments from others. NOIA and our fellow trades will continue reaching out to regulators and members of congress in an effort to clarify the intent, reach mutual understanding of the proposal, to address fundamental technical and economic flaws in the proposed rule, and allow constructive development of rules that promote safety and protection of the environment, as well as, economic growth, innovation, competitiveness and job creation. A final rule is expected in 2016.

Bonding and Financial Assurance issue apply to many aspects of the offshore industry. Tell us about what is being asked of industry, what is reasonable, and why.

There is concern by the Federal government that due to the financial position of some operators, including the declaration of bankruptcies, there may be some production platforms that cannot be decommissioned and removed due to lack of financial resources. The concern is that the eventual cost will be borne by the U.S. taxpayer. However, that fear may be unfounded and overblown, even under the current bonding and financial mechanisms. All owners, past and present, of a lease will likely be held liable for removal and decommissioning costs. It is highly improbable that there is not a company somewhere along the chain of title that has the bonds in place or the financial ability to resolve the issue. The various proposals have troubling aspects that are still being evaluated by the industry. One concern is that the bonding level may be too high. Immediately after 2010, there were federal requirements to remove so-called idle iron from the Gulf of Mexico. This resulted in very high costs for the vessels and equipment needed for removal. However, there is concern that the estimated costs of removal still reflect that artificially high cost time period. It is important for the regulators to keep up a meaningful two-way dialogue with industry in order to determine the actual cost of decommissioning and gain a better understanding of how past and current leaseholders work together to resolve decommissioning issues.

Arctic Leasing & Exploration arguably becomes less attractive when the price of oil is low since costs can be dear in the Arctic. Do you see viability up there in the short term for exploration companies?

Exploration companies cannot look at potential Arctic development in the short term. The limited drilling window, lack of infrastructure and just plain old time and distance makes this a long-term prospect. I believe everyone predicts oil prices will rebound; the question is to what level? As more areas are explored in the Arctic, and if significant findings are made, the Arctic will be most attractive. There is viability for companies with large amounts of capital, or companies willing to partner with others to spread the cost, to further explore the Arctic, but it will be at a leisurely, well planned pace.

Tell us about the OCS Five Year Leasing Program. What parts should industry applaud and what aspects of it are detrimental to further development?

The Five Year Draft Proposed Program is a political document that takes away about as much as it gives. The good news is that is continues sales in the Central and Western Gulf of Mexico, has limited sales in the Beaufort and Chukchi Seas and proposes one sale for the Southeastern Atlantic. The down side is that it closes more of the Arctic to potential exploration, prohibits exploration along the Pacific Coast, does not even allow further analysis of the Eastern Gulf of Mexico and establishes a 50 mile buffer along the Atlantic. The Five year process is funnel shaped; meaning that lease sale areas are only dropped as they go through the process, no new areas will be added. Essentially 85% of the OCS remains closed to offshore oil and natural gas exploration. But on the positive side, there is a sale proposed off the Southeastern Coast (Virginia, North Carolina, South Carolina and Georgia), which could mean reopening a portion of the Atlantic for the first time in over 30 years.

What is NOIA's take on the Draft Proposed Five Year Program (DPP)?

While NOIA is encouraged by the decision to further analyze the mid and south Atlantic areas, we remain concerned over the plan's unnecessary limits that may jeopardize America's long term energy security. It is also disappointing that the total number of lease sales has been reduced from the current program. For decades in the Gulf of Mexico and other places around the world, energy development, conservation efforts, and other industries – be it tourism, commercial or recreational fishing, or others – have not only coexisted, but thrived alongside each other; to purport that restrictions like those included in the draft plan are necessary for protecting vital resources and existing industries is misleading at best. In general, we

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are concerned that the Administration continues to lack long-term vision for America's energy and economic security by continuing to close off the large majority of the OCS for energy exploration and production. Specifically, we are concerned that the Administration has decided to keep the entire Pacific out of the draft leasing plan, while also severely limiting access off the coast of Alaska. In addition, the Administration missed the opportunity to include further analysis of the Eastern Gulf of Mexico with the caveat that should Congress lift the exploration ban before 2022, new areas could be included in the leasing schedule. In the Atlantic, we are concerned about the 50 mile buffer zone. Also, while one lease sale is encouraging, we are disappointed in the decision not to hold more than one lease sale in the area and that the sale is scheduled toward the end of the program. Furthermore, the omission of the rest of the Atlantic demonstrates a continued lack of long-term vision for energy security.

In the past, NOIA has been critical of trying to operate with old data when it comes to determining where best to drill off the U.S. east coast. Are Atlantic Seismic activities now being permitted? If not, why not and when can this be changed?

While nine Atlantic seismic acquisition permits are pending before BOEM, none may be issued until other processes are completed. The first of these – coordination with coastal states under the Coastal Zone Management Act – has been completed. The other is a review by the National Marine Fisheries Service (NMFS) under the Marine Mammal Protection Act. Only four applicants have initiated this process, and NMFS has stated their intent to complete their review by year's end, in which case BOEM would then be in a position to issue permits in early 2016. NOIA has worked extensively over the last three years with various Atlantic state stakeholder groups, allied trade associations and Congressional allies urging that DOI allow new seismic data to ultimately guide final leasing decisions in the 2017-2022 Five Year Program. An early draft does include a potential Atlantic lease sale in 2021. NOIA will continue to advocate that seismic permits be issued expeditiously to ensure new data ultimately guides future leasing decisions.

With regard to National Ocean Policy & Marine Spatial Planning, you have said, "the use of Coastal Marine Spatial Planning may very well be a multi-layered bureaucratic solution seeking a problem that doesn't exist." What did you mean by that? What's happening in this arena right now?

There are currently statutes in place that require coordination between the States and Federal government regarding offshore energy leasing. Those include the Outer Continental Shelf Lands Act and the Coastal Zone Management Act. The additional layer of coordination is premature and is truly looking for a problem. In addition, since over 85% of the OCS has been closed off to oil and gas exploration for decades, there isn't any accurate information to determine the true extent of the oil and natural gas to be found. Without that information, it is way too early to be zoning areas for exclusion of energy resources.

The export of U.S. crude oil, natural gas and similar feedstocks is a hot issue right now. What's NOIA's take on all of that and what is the prospect for getting those exports started in the near term?

Nearly all analysts seem to agree that lifting the ban on oil exports would be a good thing for U.S. consumers and producers. Oil is a commodity which is bought and sold on the global market. Keeping U.S. supplies out of the chain does little to decrease or increase the price of gasoline at the pump and the more markets available to producers should result in the best price possible. It is possible that Congress could lift the ban, but the White house has already threatened a very short-sighted veto. Oil prices will respond to supply and demand, and in a fair market where all producers are allowed to compete on the global stage, I think U.S. producers will do very well. We are also looking at a time when Iran will be allowed to export their oil. It just seems ludicrous that U.S. producers are denied the same right.

The Rigs to Reefs Program has great promise and states like Texas embrace it. How is it now working and have some of the federal issues been removed and permitting increased?

Some of the concerns over the Rigs to Reefs program seem to be ironing out. Permits are being granted on a more consistent and timely basis, but there are still other issues to address. For example, existing toppled structures are ineligible for inclusion into the program. There should be a case by case process for evaluating each of those structures for habitat, fishery and other factors. In addition, more studies need to be done on whether so much of the platform must be removed, or whether it is more beneficial to the environment to leave them alone.

Federal Regs: the safety and environmental management systems (SEMS) are being audited. What's the initial feedback from your stakeholders on how that is proceeding?

SEMS is clearly still a work in progress, as are the auditing requirements. Some initial audit reports were not satisfactory to the regulator and most companies have been striving to make their audits more acceptable and also useful to the regulator without unwittingly opening the door for potential INC's. The Center for Offshore Safety is working with auditors to assure a consistent approach and accurate measurements of success as the next round of audits commence. Progress is certainly being made and fortunately dialogue continues between the industry and the regulators to keep improving the process and reducing the time and red tape associated with audits.

Offshore wind: seemingly stalled here offshore U.S., while the rest of the world plows ahead, there has been some progress at home. Tell us about it.

BOEM has awarded nine commercial wind energy leases off the Atlantic coast: two noncompetitively issued leases (one for the proposed Cape Wind project in Nantucket Sound offshore Massachusetts and one offshore Delaware) and seven competitively-issued leases (two offshore Rhode Island-Massachusetts, two offshore Massachusetts, two offshore Maryland, and one offshore Virginia). The competitive lease sales generated about $14.5 million in winning bids for more than 700,000 acres in federal waters. BOEM will hold a competitive lease sale offshore New Jersey on November 9, 2015, and has completed an environmental assessment in preparation for a future lease sale offshore North Carolina. NOIA member company Deepwater Wind is currently constructing America's first commercial scale offshore wind farm -- a five-turbine, 30-megawatt wind farm in Rhode Island state waters about three nautical miles southeast of Block Island.

Sediment Recycling for the Greater Good

By Sean Duffy, Executive Director, Big River Coalition

Duffy

In 2009, and in response to challenges to the status quo practice of disposing of dredged material from hopper dredges as utilized to maintain the deep-draft navigation channel in Southwest Pass (the main stem of the Mississippi River Ship Channel), members of the navigation industry embraced new ideas to help promote the beneficial use of dredged material. The Big River Coalition formed a stakeholder group to focus on recommendations made in a 2007 report from the Corps (USACE) Mississippi Valley New Orleans (MVN) designed to increase the beneficial use of dredged material by utilizing hopper dredge pump-out.

At the time of the initial report, cutterhead dredges were much more expensive than hopper dredges. The stakeholder group established guidelines and a path forward that included areas where hopper dredge pump-out operations could and/or could not be conducted. The stakeholder group included representatives from the Big River Coalition, the Associated Branch Pilots of the Port of New Orleans (Bar Pilots), the dredging industry, the MVN and from the state of Louisiana's Office of Coastal Management.

The MVN explained that in order to conduct the hopper dredge pump-out it would need a financial commitment from the Louisiana Office of Coastal Management for the incremental cost difference over the normal dredging operations as per the Federal Standard. But, an agreement could not be reached for the incremental cost difference between the normal channel maintenance costs of a hopper dredge and the additional cost incurred during hopper dredge pump-out. The stakeholder group had run its course and developed a plan that could not be executed.

In 2009, however, the MVN advised navigation industry representatives that the cost of a cutterhead dredge was now much more comparable to that of a hopper dredge. After reviewing the new information and the established stakeholder group information, the Bar Pilots, the MVN and Big River Coalition agreed to a pilot project to utilize a cutterhead dredge for maintenance dredging in Southwest Pass.

Industry Concerns

The Bar Pilots had legitimate concerns about cutterhead dredges working in Southwest Pass because cutterheads dredges are less maneuverable than hopper dredges and are anchored in place. The Bar Pilots and Corps had not used cutterhead dredges in Southwest Pass since the channel was deepened from 40 feet to 45 feet (1988). However, in an effort to increase the beneficial use of dredged material the Bar Pilots agreed to a one-time test. In 2009, the industry cutterhead dredge *E.W. Ellefsen* was utilized for channel maintenance in Southwest Pass. The pilot project was successful and when the Ellefsen pumped dredged material over the foreshore rocks along Southwest Pass, 46 new acres of Louisiana were created in the environmentally sensitive bird's-foot delta of the Mississippi River.

The Bar Pilots agreed to continue the use of cutterhead dredges along with the hopper dredges that are both needed to maintain the Mississippi River's deep-draft channel. The channel maintenance of Southwest Pass requires both types of dredges, working cooperatively and in tandem with each other.

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Over time, the Bar Pilots have become more comfortable with passing cutterhead dredges. Beyond this, they have also noticed the cutterhead dredges cut a consistent channel. The pilots are also proud of the new acreage being created each year and agree with the Big River Coalition's message that the increased beneficial use of dredged material serves to protect the navigation channel. The Big River Coalition has focused on changing the historical notion that the material removed from navigation channels are "dredge spoils" in order to highlight the benefits by promoting the preferred term of "sediment recycling." Dredge spoils are in fact a precious resource along the Louisiana coast and each year since 2009 cutterhead dredges have played an important part in channel maintenance and increasing the sediment recycling program.

In 2014, two cutterheads were utilized for the first time in channel maintenance in the same fiscal year, and the number of acres created each year since 2009 has increased. In Fiscal Year 2015 a record amount of sediment recycling was achieved with 20.7 million cubic yards creating approximately 2,000 new acres of Louisiana along the bird's-foot delta. The new cubic yard record is the highest amount of beneficial use ever achieved by the United States Army Corps of Engineers although the previous two records were also directly related to dredging on the Mississippi River.

The previous record amounts of cubic yards were both achieved when the Mississippi River Ship Channel was

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deepened, the second (previously first) in 1961 when the channel was deepened from 35 feet to 40 feet and the third in 1987 when the channel was deepened from 40 feet to 45 feet. Since the cutterheads were added to the tool box for channel maintenance and coupled with the cutterheads being used to dredge beneficial material from the Hopper Dredge Disposal Area at the Head of Pass, nearly 5,000 acres of new Louisiana have been created.

Along the Louisiana coastline there are few areas that have more land than they did 10 years ago, the land loss attributed to sea-level rise, subsidence and even tectonic fault slippage being the common suspects. However, due to the sediment recycling program as demonstrated by the following photos there is clearly more land along the Mississippi River Delta than there was 30 years ago (1985 to 2015). The Big River Coalition, Bar Pilots and MVN have made advancements through the sediment recycling program that will prove valuable if the Mississippi River Ship Channel is deepened to 50 feet. However, there is no doubting that because of the additional acreage that the critical shipping channel is better protected from storm surge than it was prior to 2009.

Editor's Note:

Separately, the Port of Cleveland's (Ohio) beneficial sediment initiative has recently earned its first major customer. Great Lakes Construction Co. has purchased 6,890 cubic yards of sediment for use in the Ohio Department of Transportation's (ODOT) Lakeland Boulevard / I-90 Replacement Project in Euclid. The Great Lakes' purchase—enough to fill 300 standard dump trucks—represents a big step forward in the Port's overarching plan to creatively and efficiently manage river sediment, demonstrating that a private market does indeed exist. The Port developed a multi-tiered approach to beneficially reuse as much sediment as possible, processing and marketing the material through its partnership with Kurtz Bros., a leader in serving the waste-to-resource and soil-related industries. Just a few months into the relationship, the Great Lakes' deal has helped make the vision a reality.

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Proposing Multi-Purposing

NESP is the Ticket.

By Michael J. Toohey, President/CEO, Waterways Council, Inc.

Toohey

The U.S. Army Corps of Engineers has multiple mission areas and many constituent as a result. These mission areas within the Corps' Civil Works directorate are subdivided into business lines. The Corps' goal, it says it to "seek to develop sustainable solutions to America's water resources needs using integrated water resources management concepts across mission areas in order return the highest value to the Nation in terms of economic, environmental and safety returns on investment.

The business lines are Navigation, Flood Risk Management, Environment, Hydropower, Regulation of Aquatic Resources, Disaster Response and Emergency Management, Recreation, and Water Supply. When you look at these distinct areas, you can see natural cross-overs. For example, Hurricane Katrina fell into the Disaster Response and Emergency Management category but also affected Navigation, Flood Risk Management, Recreation and the Environment.

As the Corps struggles to manage all of these business lines with fewer resources, it seems reasonable that multi-purpose programming should be the wave of the future for the Corps and other Federal agencies as well. Trying to find programs that intersect or work together to integrate and complement resources should be a goal. There is just such a program that fits the bill for the Corps: the Navigation and Ecosystem Sustainability Program (NESP) program. *So what's NESP?*

NESP

Authorized in the Water Resources Development Act (WRDA) of 2007, NESP is an unprecedented, multi-purpose authority that allows the Corps of Engineers to integrate management of the Upper Mississippi River System's infrastructure with ecosystem improvements. NESP would construct seven modern 1,200-foot navigation locks at the most congested lock locations (Locks and Dams 20, 21, 22, 24 and 25 on the Upper Mississippi River, and La Grange and Peoria Locks on the Illinois Waterway).

Congress further authorized smaller-scale navigation efficiency improvements. NESP's authorization includes $1.948 billion for these new locks and $256 million for the small-scale efficiency measures; $1.717 billion was authorized for a 15-year ecosystem restoration program and $10.42 million annually for its monitoring.

This is a unique, multi-purpose program that facilitates both a healthier economy and river ecosystem, and conjoins the Corps' Navigation and Environment business lines. In addition, NESP will create and support tens of millions of job-hours for skilled construction trades, as well as expand and sustain jobs at grain elevators, manufacturing facilities, ports and terminals, and within the tourism sector.

By modernizing navigation capacity for the expected record harvests and record demand ahead, NESP will increase the economic potential of American farmers and bolster the positive trade balance in the nation's agriculture sector. By also investing resources in our marine ecosystems, job opportunities can be created for habitat managers, water quality scientists, and aquatic restoration specialists.

WCI is urging that just $10 million in Pre-Construction Engineering & Design (PED) funding be set aside for NESP in appropriations funding or designated within the Corps' FY '15 Work Plan. It has been estimated that approximately 300 jobs can be derived from PED funding, with potentially 6,000 jobs from a $200 million construction appropriation.

Critical Infrastructure

Most of the locks and dams on the inland waterways system were built in the 1920s and 1930s, yet they facilitate the transport of 21st century cargoes that fuel our modern American economy. The U.S. Department of Transportation projects 1.1 billion tons of increased freight will move on the inland waterways by 2040. This is a critical link in the transportation supply chain and it requires reinvestment and modernization to continue to deliver.

Over the last 150 years, the ecological health of the Upper Mississippi River has degraded from multiple uses and

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alterations but could be substantially improved with the implementation of NESP. Some of the ecological system improvements that make up this program include modified dam operations, 65 backwater and island enhancements, 29 side channel reconnections, 92 modifications to channel structures, and system ecological monitoring to document the health of the river and to support riverine and riparian habitats.

We can accomplish two important missions with NESP:

- *Modernize our nation's inland waterways to provide greater capacity and competition, and to improve the most cost-competitive and environmentally friendly transportation option for our bulk commodities utilized here in the United States and exported to marketplaces around the globe. And;*
- *enhance and bolster the river's ecosystems and habitats that remain critically important to sustaining a healthy river, and to managing this program for years to come.*

NESP: By the Numbers

Back in June, more than 67 diverse stakeholders from the conservation to agriculture to labor communities sent letters to key appropriators on the House and Senate urging that this PED funding be included in FY '16 funding. In those letters, they offered a number of important facts about the NESP program and about the waterways. For example, did you know that:

- *60% of the nation's export-bound grain is transported on the inland waterways?*
- *an effective and efficient water transport system is essential to supply American farmers with fertilizer and inputs for planting seasons?*
- *farmers depend on our waterways' infrastructure to compete and win against producers outside the United States?*
- *ecosystem restoration improvements can allow the ecological system to rebound and provide improved water quality, fish and wildlife habitat, and supports a $1.2 billion recreational economy (1990 figure)?*
- *the Panama Canal expansion to be completed next year will create opportunities for increased American trade, but not if we under-invest in channel dredging and our locks and dams are not functioning?*
- *more than a half-million American jobs depend on operational ports and inland waterways?*
- *the waterways are vital to our manufacturing sectors and to the construction industry?*
- *American consumers benefit from transportation cost-savings made possible by the inland waterways; for every $1 invested in our inland waterways, around $14 is returned in national benefits?*
- *NESP will restore valuable river habitat such as islands, flowing channels, and marshes which also provide flood water storage, water infiltration for water supply, and process excess nutrients in the water to reduce the cost of water delivered to communities that use the river as a drinking water source?*

NESP is a quantifiable example of what could be a trend for the future of multi-purpose projects that benefit many entities. In this case, NESP's beneficiaries are farmers, conservationists, laborers, rivers, habitats, and our nation's economy. Let's go!

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D&O Liability Insurance

Corporate risk now has a human face in an increasingly difficult regulatory environment.

By Francis Kean

Kean

The regulatory tides have recently shifted towards holding top management more accountable for company performance at a time when the insurance products which cover the liability of directors and officers (D&O) are steadily growing in complexity. In this new environment, maritime companies' chief risk officers should be keeping a keen eye out for the metaphorical icebergs on the horizon, unless they want to lay themselves open to accusations of having been rearranging the deckchairs on the Titanic as danger neared.

Changing Sea States

Last month (subs: Sept 2015), the US Deputy Attorney General, Sally Yates, issued a memorandum (**http://www.justice.gov/opa/speech/deputy-attorney-general-sally-quillian-yates-delivers-remarks-new-york-university-school**) to US assistant attorney generals for anti-trust, tax, environment and national security, and all other US States Attorneys, which made clear that corporations could "only commit crimes through their flesh-and-blood people."

She went on to say: "It's only fair that the people who are responsible for committing those crimes be held accountable. The public needs to have confidence that there is one system of justice and it applies equally regardless of whether that crime occurs on a street corner or in a boardroom."

That sentiment just as easily could have been offered by a number of lawmakers across the developed world. The memorandum was not limited to criminal acts; it also raised the specter of bringing civil proceedings against executives. Having recently extracted some eye-watering fines from companies, US prosecutors appear to now have the human element – the recognized cause of most major marine accidents – firmly in their sights.

A typical D&O policy can easily comprise 30 or 40 pages of closely typed text, with an equal number of defined terms. It is no exaggeration to say that legal advice is often necessary to work out precisely what is and what is not covered. Is there a reliable way to cut through this complexity and focus on what really matters? A good place to start is to establish the personal liabilities that senior maritime executives might reasonably expect a D&O policy to protect them against.

For example, a standard expectation is that, if they become embroiled allegations, investigations, proceedings or enquiries relating to their capacity as senior maritime executives, the D&O policy would ensure payment of all defense and representation expenses, together with any settlements or damage awards made against them, absent any dishonest or other egregious conduct. The good news is that such expectations can be met, but only if a number of metaphorical and medium-sized coverage 'icebergs' are first removed from the course being steered. These include:

Shared Cover

One might be forgiven for assuming that cover under a D&O policy is primarily for the benefit of an organization's most senior executives. Very often, however, the definition of "director and officer" covers all employees, including those in a managerial and supervisory capacity. The breadth of that definition in a large organization could easily cover several hundred individuals and could well include, for example, ships masters and officers, and perhaps even some crewmembers.

In itself, that is not a coverage problem, per se. But it is highly relevant to the question of how much liability cover should be purchased. Limits are usually shared on an aggregate and 'first-come-first-served' basis. Following a major shipping incident or disaster, regulators, prosecutors and litigants tend to adopt a "bottom up" approach, focusing first on those individuals most obviously implicated in the causes.

Senior executives may not come under detailed scrutiny until months or even years later. This may result in inadequate cover remaining for senior executives, if and when the repercussions rise to their level.

Claims Made Policies

A key feature of the way in which the liability insurance for directors and officers works is that it only responds to claims that are first made against them during the period for which the policy is purchased. What this means is that if the board members of any shipping company are held accountable for a "wrongful act" committed several years after they have left the company, there will only be cover if the company has continued to purchase D&O liability insur-

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ance for the period in which the allegations are made. That of course assumes that the company is still in existence, and has not been "reorganized" or otherwise ceased to exist.

As with all good rules, there are exceptions; for example, individual directors can mitigate this exposure by obtaining cover to protect them for a set period after they cease to be board members (often referred to as "run off" cover). The key point is that, unless they take steps to ensure this protection is in place, they run the risk of being uninsured.

Typical Exclusions, Limitations

Some of the exclusions most typically seen in D&O policies cover precisely the situations in which exposure to liability for shipping companies is most likely to arise. For example, it is not uncommon to encounter exclusionary language relating to pollution, property damage, bodily injury and death; nor is this language safely identified by a thorough read of what appears to be the relevant section of the policy.

This is because insurers often adopt lengthy definitions which include within them restrictive or exclusionary language. A good example of this is the definition of "loss," which frequently contains language such as: "Loss does not include…," adding a list of further exclusions often covering, for example, all types of fines and penalties, as well as clean-up costs.

Another trap for the unwary maritime executive can be what appear to be 'enhancements' to cover that are, on closer examination, in fact restrictions. Examples might include so-called additional limits on cover for pollution exposure and/or for "corporate manslaughter." These protections can be laden with additional restrictions and limitations.

For example, under careful inspection, the additional marine pollution limit may turn out to be a sub-limit on the total amount of cover available and, in any event, may only provide restrictive cover. Similarly, cover for corporate manslaughter might appear useful, relevant and generous. But, in fact, it may not extend to investigations, as opposed to prosecutions. Despite the apparent traps, there are rational and sensible restrictions available on the scope of cover.

D&O insurers will tell you, with some justification, that their policies are not designed to cover exposures such as clean-up costs and/or damages for bodily injury and death. They might also say that the D&O premium does not take account of the 'business as usual' costs for a shipping company, such as cooperating with regulators and, if necessary, incurring the legal costs to do so.

Be that as it may, the seasoned maritime professional can still safely navigate the risk of these increasingly treacherous waters. Reverting to the 'reasonable-expectation' test above, they would be well counseled to focus on a few essentials, by asking:

- ***Do the key definitions of "Claim", "Wrongful Act", "Loss" and "Investigation" – which often serve as the main gateways to cover – provide sufficient breadth?***
- ***Do the exclusions (and related definitions) allow scope for defense and investigation costs (at least) for all types of claims and investigations?***
- ***Is the limit adequate (and of adequate duration) for the number of people insured, given that, when the iceberg (literally or metaphorically) hits, the consequences are likely to be felt by the shipping company and its directors and officers for many years to come?***

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Francis Kean *is an Executive Director for Willis FINEX Global, and the Willis Group's D&O expert.*

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License Defense as a Recruiting Tool

The effort to attract and retain the best and the brightest officers can be enhanced by incentivizing personnel. In an increasingly onerous and litigious regulatory environment, the funding of License Insurance could be just the 'ticket.'

By Randy O'Neill

O'Neill

Over seven years ago, the US Department of Transportation's Maritime Administration (Marad) released a report confirming what most inland marine operators already knew: There are not enough qualified, licensed mariners to meet the industry's needs. If anything, the labor pool for qualified towboat pilots and other key USCG-licensed officers is even shallower than ever.

Even in the midst of the Great Recession in 2009, almost two-thirds of the respondents to the Marad study said that they had trouble finding qualified job applicants, with the largest area of concern being the hiring of licensed deck officers. And troubling as it is to get new applicants, what makes the problem even worse is the fact that over half of the survey's respondents also said that it is becoming increasingly difficult to retain qualified mariners, with 88% reporting that retention issues have negatively impacted business operations. And there is no quick fix as 71% of the respondents believe the problem would persist for at least five years. Sadly, they were too conservative in their prophesy as the manning situation has arguably continued to deteriorate.

Responding with Incentives

Clearly, operators need to come up with incentives not only to attract new employees but, as importantly, strategies to retain their current licensed deck officers. An important part of that strategy is to provide high quality employee benefits to their officers which clearly distinguish their company from its competitors – for business and licensed employees. One cost effective benefit to consider is marine license insurance.

In fact, many inland marine companies have already taken that step and are incorporating pre-paid license defense insurance into their officers' benefits packages in a variety of ways. While some companies pay the full annual premium, others partially subsidize the cost or merely provide their employees an easy payment method using payroll deduction.

At its basic level, marine license insurance is simply a prepaid legal defense policy that, in exchange for an annual premium, provides a U.S. Coast Guard licensed officer with fully-paid legal representation when he/she is involved in a marine casualty that triggers a Coast Guard investigation. The legal representation could range from preparation assistance for casualty scene interviews and helping to complete and submit a Marine Incident Casualty Report (2692) to the Coast Guard, to accompanying the mariner to a related hearing and possibly months of representation if the Coast Guard brings negligence charges leading to a license suspension or revocation (S & R) proceeding. The mariner receives unlimited legal representation, regardless of the seriousness of the situation, in exchange for the payment of one annual premium.

Conflicts of Interest?

A common misconception among many marine employers regardless of size is that it is not in their interests to provide license insurance to their deck and/or engineering officers. Nothing could be further from the truth, according to longtime maritime attorney William Hewig of Kopelman & Paige.

"Under the legal theory of Respondent Superior," according Hewig, "an employer will be vicariously liable for the negligence of an employee unless the employee is operating outside the 'scope of his employment'. For that reason, the employer will want to cooperate closely with, and will most likely share many of the same defenses to an incident as will the employee. It therefore makes sense from the perspectives of both employer and employee to have a maritime attorney, skilled and experienced in the specialty of Coast Guard administrative law practice, on the scene and involved from the outset."

Protecting an Investment

When it comes to employee retention, marine employers have a financial incentive to assist in the defense of licensed mariners. A vessel owner or operator has a significant investment in time, training and treasure in its licensed or documented employees and, because of that, has sound economic reasons for assisting in their defense … and retention.

Additionally, in the vast majority of incidents, issues are resolved quickly and the employer receives the credit – and enhanced loyalty – from its grateful officers who did not

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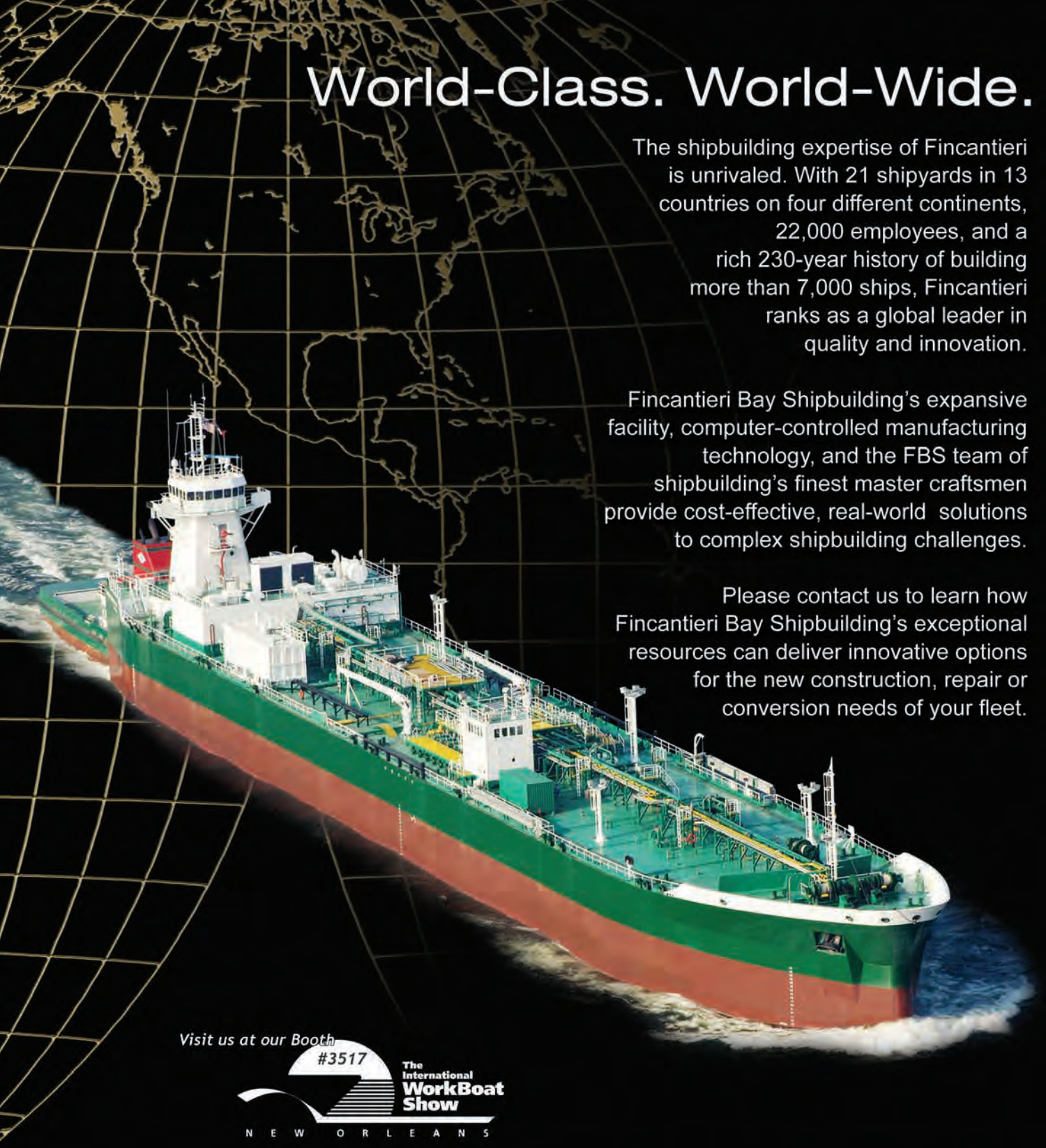

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have to pay thousands of dollars in out-of-pocket funds to 'prove' their innocence. Indeed, there are countless examples of this reality that play out every year – like the one described below – especially within the realm of inland workboats.

A Collision in Passing

On a clear summer afternoon with good visibility, a steel-hulled, 170 foot diesel-powered towboat was pushing four loaded barges downbound on the Mississippi River. When it became necessary, the pilot of the towboat contacted the master of an upbound tanker to arrange a port-to-port passing. The tanker's master agreed to the passing but, during the course of the maneuver, the privileged downbound flotilla was struck by the upbound tanker. The collision resulted in the sinking of two barges and their cargo and additional damage to the push boat. The tanker sustained damage to its port ballast tank but, despite taking on water, was able to continue to a secure docking facility.

The U.S Coast Guard immediately responded to the accident scene and took verbal statements from several involved parties, including the pilot of the towboat and the tanker's master and advised both to expect further contact as the investigation continued. Both towboat pilot and tanker master were sent for drug and alcohol tests which proved negative for both. Two days later, the towboat pilot, who had a license defense insurance policy belatedly notified license his insurer of the incident. An experienced local maritime attorney, qualified to represent him in both administrative (license) and civil (lawsuit) proceedings, was immediately assigned to him. He made initial contact with the insured pilot minutes later and a lengthy, detailed conversation took place between them. As a result of that conversation, a CG2692 (Report of Marine Accident, Injury or Death) form was completed and promptly submitted to the Coast Guard.

On that same day, the towboat pilot's employer brought a civil action in U.S. District Court claiming that "the collision damage resulting from this incident was not caused or contributed to by any fault or negligence by the navigators of the (towboat) or unseaworthiness of her flotilla, but was caused by the negligence of the navigators of the (tanker) to properly control their ship…" The suit alleged that "the plaintiffs have sustained damages for the loss of (two barges), their wreck removal, loss of cargo, loss of use and other expenses presently estimated at $1.5 million, together with

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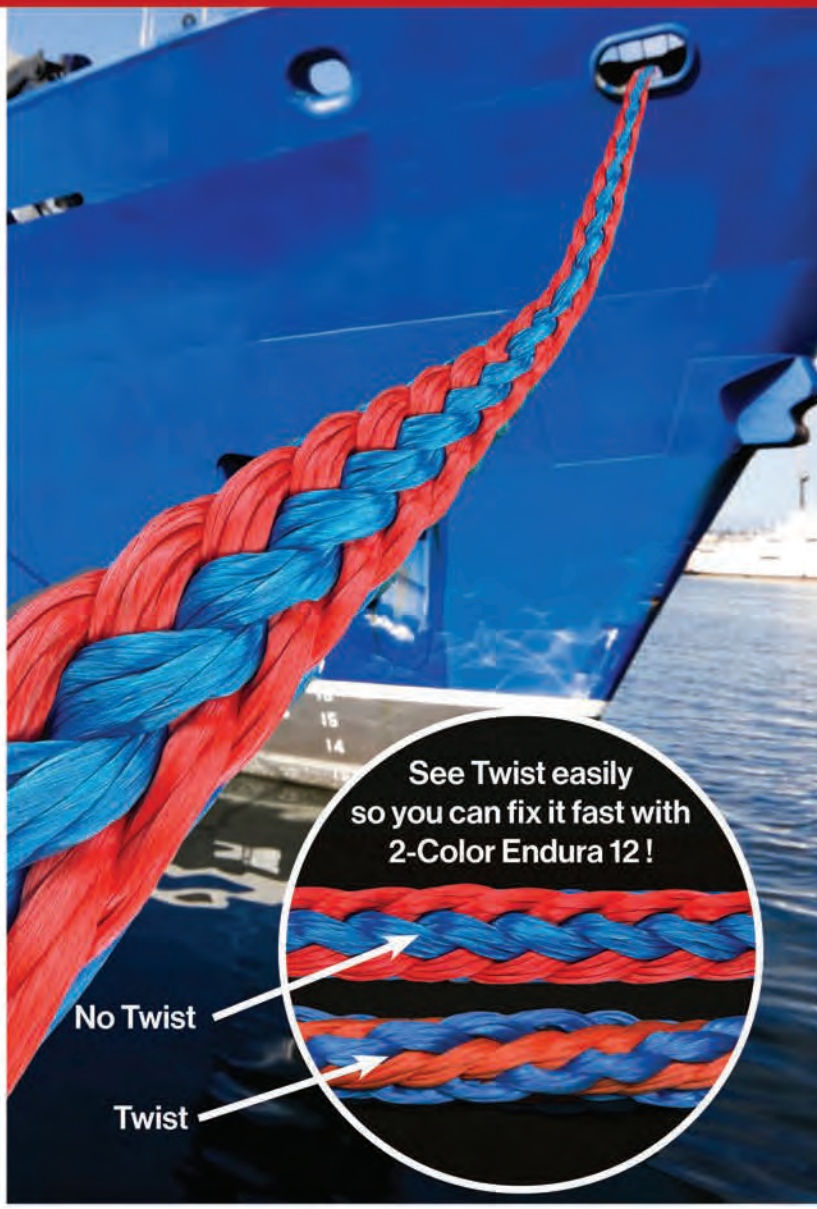

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attorneys' fees, interest and costs." That estimate was subsequently adjusted to $2.2 million in damages.

Two weeks later, the towboat company's attorney proposed that its pilot be deposed for the lawsuit, emphasizing that he was not the target of any civil or disciplinary action. The pilot's attorney requested a hold harmless and indemnity agreement in exchange for his cooperation and received it. Over the next several months the two attorneys worked in a cooperative manner to prepare the pilot for his civil suit deposition which finally took place over four months after the summertime incident. To further protect his client's interest, the towboat pilot's attorney also attended the tanker master's deposition the following day. All of the attorney's billing time and related expenses were fully covered under the pilot's license defense insurance policy.

Two months later, when things seemed to be settling down, the towboat pilot received that dreaded letter on USCG stationery informing him that as a result of its investigation of the previous summer's collision, "... there is actionable negligence on your part." The proposed order was a 12-month outright license suspension in accordance with USC 7703. The pilot (and his attorney) was given three choices: go before an Administrative Law Judge for a Suspension & Revocation (S&R) proceeding; voluntarily surrender his credentials to the Coast Guard; or sign a settlement agreement, complete all required stipulations, and his Merchant Mariners document would be placed on probation for a period of 12 months. He was given 20 days to respond.

Not willing to accept any of the choices offered by the Coast Guard, the towboat pilot's attorney requested and was granted a meeting between him, his client and the Coast Guard one week later to discuss its negligence charges. As a result of that meeting, the Coast Guard withdrew its negligence charges primarily because of its review of the deposition testimony provided by the pilot and other involved parties (including the sworn deposition of the master of the adverse tanker) in the civil suit; a detailed record of both vessels' movements prior to the collision; and other exculpatory information gleaned from investigative records. Interestingly, the Coast Guard's lead investigating officer claimed that the negligence charges and proposed 12-month license suspension were primarily based on the towboat pilot's original verbal statement made immediately following the collision *in the absence of legal representation*, and because he did not report the incident to his license insurer until over 48 hours after the collision.

Employee Retention 101

Inland marine company counsel and license defense attorneys can work well together and have mutually satisfactory outcomes when they combine their efforts in pursuit of a just decision for both employer and employee. As for the towboat pilot, for the approximately $500 annual premium paid for his license insurance policy, he received almost $20,000 in fully paid legal representation without worrying how to fund his defense. But, perhaps more importantly, the veteran river pilot avoided the hardship and career setback of a 12- month outright license suspension for negligent acts he did not commit. Most would agree – a favorable outcome for all parties concerned, and, a quality employee retained on the payroll.

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

Outfitting the Modern Workboat

Wishful thinking operators should have wish lists, ponder what is possible – and then, what is affordable.

By Joe Hudspeth

Hudspeth

The boat show season is upon us. Myriad events beckon to everyone associated with commercial maritime from this point forward in the calendar year. The anticipation and main focus of any event should not be about beaded strolls down New Orleans' Bourbon Street or how many barbecued shrimp can be savored, but about the maritime industry comes together to showcase and share what is new and needed. Much of what is on display at the show can and should get transposed into the preliminary specifications or wish lists for your next newbuild or overhaul project.

While certain sectors of the industry are experiencing a temporary downtick and setback, the overall maritime marketplace is keeping pace and, perhaps, even progressively growing. In either downturn or copious years, the case can be made for investing in the future by upgrading vessels, equipment, and technology. Trying something new is always a bit daunting, but you can never get to where you want to end up without leaving safe harbors and constantly pushing forward.

NavNet TZTouch2

Mavericks in the Making

The tradeshow venue provides the perfect opportunity for equipment manufacturers to introduce new models and products. Always be on the lookout for several veils to be lifted as engine OEM's begin to promote new models destined for the next horsepower rung of EPA Tier IV certification. For example, engine distributor Motor Services Hugo Stamp will introduce a new line of Baudouin engines in December. The French engine manufacturer has made a significant investment to tap into the American market and is in the final stages of obtaining EPA Tier III approval on their 15.9 liter and 31.8 liter engines. Likewise, OXE diesel outboard engines and Castoldi water jets are also looking to churn up the U.S. propulsion market with a foray this year. They will encounter stiff competition as they do.

While alternative propulsion systems remain arguably far from the mainstream, it is critical to monitor advancements in this sector. It is expected that continuous improvements will eventually make LNG and hybrid propulsion systems a more workable option. BAE Systems is actively seeking more candidates for their latest Hybridrive technology that can offer diesel electric and electric propulsion. Breakthroughs in propulsion systems are always worth looking for, but it is a trendy wave of digital modernization that repeatedly claims the best in show.

The Next Big Thing?

A new horizon looms for those who used to idolize Star Trek's Captain Jean-luc Picard as he simply called out to a seemingly personified computer to evoke commands for the ship. Tech companies have harnessed that fictional computer and have made Siri-type technology a useful and tangible tool that can be found in practically every pocket. While voice protocol is still lacking for many vessel applications, the platforms for app-based, cloud-based,

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and onboard networked communication are revolutionizing modern workboat equipment as we have previously known it. More and more mechanical based equipment now features a digital component to allow for networked communications, monitoring, and diagnostics. Captains and crew members alike have found communicative systems beneficial and are now driving the demand for smarter boats. Along with that comes the need for increasingly sophisticated mariners to operate that equipment. One without the other is a bad idea, indeed.

The pull through digital demand has also driven the requirement for cross-system compatibility with real time communication. CAN-based networking makes this level of communication possible and the cost is easily affordable. Managing the networked equipment interface has also become more tangible and user-friendly. Voice activation and touch screen control is bound to become the new norm in contemporary glass-bridge pilot houses. Maretron's N2KView with customizable display screens and vast monitoring functions, for example, is one of the most complete interface systems available. Furuno has also recently released a new multifunction system, the NavNet TZTouch2, which features multi-touch navigation with a host of other high end vessel electronics features integrated into a single touch screen system.

And, the pilot house of the future may be one that eliminates sea sickness altogether as unmanned and drone based technology progress to break into the marine environment. What started as military-only use, recently expanded to the hydrographic survey and research segments and now the workboat sector seems primed to be next in line to demo the potential for unmanned technology. Unmanned technology should more appropriately be considered remote manned technology, as there will always be a requirement for human oversight. The latest in advanced control systems such as dynamic positioning systems, satellite communications, and internet protocol television (IPTV) are the foundational backbone to what could be a short bridge to cross over to unmanned operations.

Failure to Launch

Tough choices lay ahead. Builders face a tough predicament for customers who want to linger in the mechanical world with demands for analog displays that they themselves have stamped as tried and true. Such technology is on an obsolescence course and sometimes the best that can be offered is a digital representation of the same analog equipment. The newest models of mobile phone devices are not purchased because the old model fails to no longer make a good call. New devices simply offer more features and in more areas, thus creating a new experience and an elevated importance of needs and reliance. The same is true for modern workboats; however, with the quick and continual release of new technology stems a greater potential for latent defects.

A prominent fleet operator recently shared an experience detailing four service calls for an engine mechanic to collect technical data and make adjustments to the engine's computer. The four separate visits occurred during the busy summer operations, so the operator mandated that the technician come along for the day long voyage to avoid being inconvenienced with an unprofitable dock stay. It was not until the vessel was underway that the technician discovered that his laptop software was not properly configured to collect the data and make the changes. Fortunately, after three unproductive attempts, the proper technology was sourced and the repair was implemented.

Similarly, my Bavarian-built car remained at the dealership for over a month because the mechanics did not know how to fix it. The technician would do some programming on the vehicle computer until it indicated that

everything was working properly and then, he would call me to pick up the vehicle. With a total reliance on digital technology, the technician failed to actually physically test the mechanical problem to see if it was resolved. I was not impressed when I had to show up on two occasions to demonstrate that the problem still existed, despite the all-systems-go digital indication. The requirement for a skilled wrench-turning vessel engineer will clearly remain, and mechanical fail-safes will prove necessary even with modern equipment.

The technology shift is not an arguable point; we must embrace and keep moving in a technologically advanced direction. In this way, the U.S. Coast Guard and even NOAA have marked a significant move by endorsing the use of electronic charts and e-navigation instruments. Even the NTSB is pushing for on board networked monitoring with a desire to see the implementation of voyage data recorders.

The uniqueness of our industry and environment will continue to present obstacles and challenges that cannot be solved by technological advances alone, but the potential for success is greater with a modern maritime fleet. Talk to your builder and designer about a modern vessel design that is a good fit for your operation. Outfitting the modern workboat means more than bells and whistles; it means balancing a realistic CapEx budget with the realities of an increasingly competitive, regulated and technologically advanced market.

Joe Hudspeth *is Vice President of Business Development at All American Marine, Inc., a manufacturer of high speed passenger ferries, excursion vessels, and work boats, in Bellingham, WA. Hudspeth has been involved with maritime sales, marketing and product development since 2000. He currently serves as a regional co-chairman for the Passenger Vessel Association and participates on several committees concerned with marine industry issues.*
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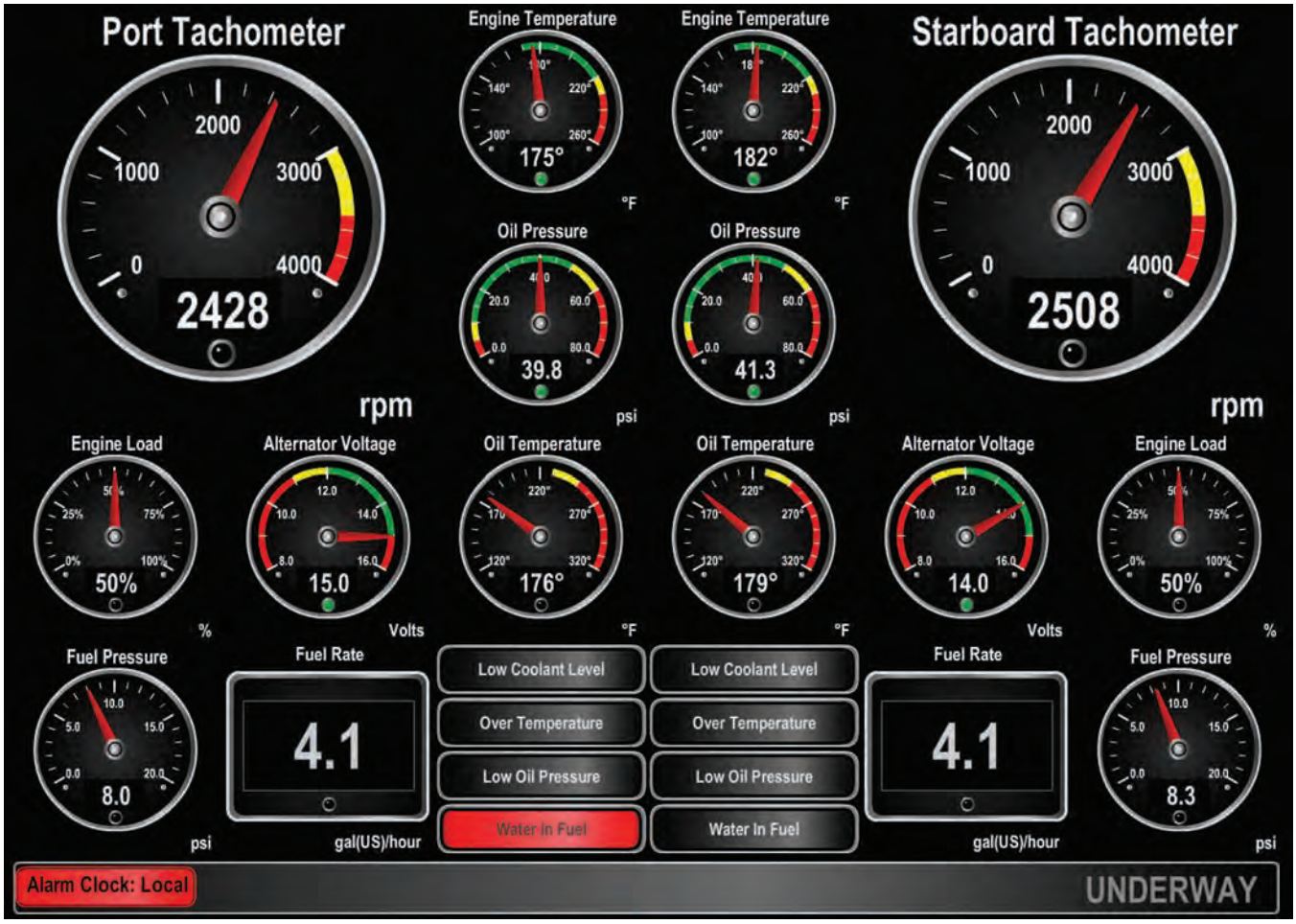

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A New Toolkit for Planning Port Investment

The U.S. Maritime Administration's Port Planning and Investment Toolkit includes a Funding Strategy Module that can expedite and foster better coordination different sources of funding, enhance collaboration and provide tangible results – at all levels.

By James A. Kearns

I recently attended the dedication ceremony for the new South Harbor of America's Central Port, located just north of downtown St. Louis in southwestern Madison County, Illinois. The $50 million project created a new terminal to handle cargo carried by rail, truck, and barge, plus a new general cargo barge dock. It entailed the construction of 9,600 feet of rail track, the excavation of over one million cubic yards of dirt, and the placement of over 8,000 cubic yards of concrete.

The newly excavated harbor carved out of the river bank, the freshly laid rail track with two brightly painted locomotives, and the tractor trailers loading and unloading cargoes of various kinds, all brought home to me yet again how our river ports convert what would otherwise be three separate channels of commerce into a single, integrated network of nationwide freight transportation. The whole is truly greater than the sum of its parts.

But, as I listened to the speeches that were made at the dedication ceremony by those who had contributed to the success of the project, something impressed me even more than the new harbor facility itself: how the Port got the money. To be sure, there were significant TIGER (Transportation Investment Generating Economic Recovery) grants from the U.S. Department of Transportation, for which U.S. Maritime Administrator Paul "Chip" Jaenichen was warmly and justly applauded. The representatives from the State of Illinois and Madison County described the financial support that they had also provided. The Port's Board of Commissioners had approved private debt financing as well, to be repaid from the port's revenues and not from taxes. It was an impressive display of collaboration and coordination among funding sources at different levels, of different kinds, and in different amounts, to bring the South Harbor project to a successful completion.

This was done while there continues to be much ink, both physical and electronic, devoted to the sorry state of the U.S. inland waterways infrastructure, especially its locks and dams, and of the need for funding (read: Congress) to address this dire and deteriorating state of affairs. The prospects for funding approaches other than the well-trodden path to the federal trough have been brightened by recent developments, such as provisions in the Water Resources Reform and Development Act of 2014 (WRRDA) for a pilot program of public-private partnerships and a study of the potential benefits of federally tax-exempt bonds.

Port Planning and Investment Toolkit

Our nation's river ports are as indispensable a component of the U.S. inland waterways as are the rivers' locks and dams. While each port's funding needs are specific to that port, ports of a certain type or size often share similar needs. To help U.S. ports address those funding needs, the U.S. Maritime Administration (MarAd) has recently provided a resource to help U.S. ports with planning and investment as part of MarAd's StrongPorts program: the "Port Planning and Investment Toolkit" *(www.marad.dot.gov/ports/strongports/port-planning-and-investment-toolkit)*, developed by MarAd and the American Association of Port Authorities (AAPA), with the stated goal of being a "go-to guide to plan, fund and execute critical repair and project upgrades."

The first tool developed for the Port Planning and Investment Toolkit has been the "Funding Strategy Module," available on the StrongPorts website noted above. The Funding Strategy Module is a major piece of work. It provides guidance on how a port can develop its own profile, how due diligence should be conducted for a given project, how a port can develop an understanding of its creditworthiness and available debt and capital sources, how alternative financing structures can be identified and evaluated, how debt financing can be implemented and managed, how to determine if public-private partnerships might be feasible, and how the port can position itself for grant funding and government loan programs. The profiles and case studies of several real-world U.S. port projects are included that represent a range of successful port projects that have used various funding techniques following the principles outlined in the Toolkit.

The Government is here to help (Really!)

MarAd's website also includes a catalog of the U.S. government programs to finance marine transportation projects, including those for which port projects would be eligible, such as TIGER grants, loans and loan guarantees under the Transportation Infrastructure Finance and Innovation Act (TIFIA) and the Railroad Rehabilitation and Improvement Financing (RRIF) program *(www.marad.dot.gov/wp-content/uploads/pdf/Select_US_Govt_Funding_Programs.pdf)*.

The Funding Strategy Module is necessarily broad in its scope, offering guidance for ports both large and small and in a variety of geographic, economic, demographic and governmental circumstances. It does not distinguish between deepwater and inland ports in so many words, but it does address the different circumstances of "large" and "small" ports. As a practical matter, this distinction is likely equivalent to distinguishing between deepwater and inland ports, so inland ports would likely find the Funding Strategy Module as applicable to themselves as to their deepwater counterparts.

For larger, well-developed ports with substantial experience in obtaining funds for expansion and capital improvements, much of the guidance that the Funding Strategy Module offers might already be familiar. For newer or smaller ports, however, the Funding Strategy Module could well be useful in providing a comprehensive view of the various funding approaches that are available, and in helping such ports to identify and pursue funding opportunities in a methodical and disciplined manner.

As a result of a recent initiative led by the Mississippi River Cities and Towns Initiative (MRCTI) – comprised of the mayors of 68 cities and towns on the Mississippi River – ports on the Illinois River and the Mississippi River could have occasion in the relatively near future to seek funding in addition to their customary and ongoing needs. In April of this year, Secretary of Transportation Anthony Foxx gave final approval for the M-55/M-35 Container-on-Barge Project to be designated as a Marine Highway Project, as a container-on-barge service from New Orleans to Chicago with scheduled stops along the proposed route in Memphis and St. Louis and subsequent routes to and from ports along the M-55 and M-35 Marine Highway Routes designated by MarAd. (M-55 and M 35 are the Transportation Department's designations for the Mississippi and Illinois Rivers, respectively.)

According to MarAd, Marine Highway Projects are planned services or expansions of existing services on existing Marine Highway Routes that can provide modal choices to cargo shippers. They are expected to benefit the public by reducing transportation costs, air emissions, road maintenance costs, and by improving safety. In addition to MRCTI, the sponsors of the M-55/M-35 Container-on-Barge Project include public and private entities located in all ten states that border the Mississippi River, such as state departments of transportation, local metropolitan planning organizations, vessel operators, ports and terminals, local governments, and shippers.

Partnerships & Collaboration

Although the concept of container-on-barge on the inland waterways has so far met with mixed results in other locations in the country, a renewed effort to demonstrate its feasibility was made in the spring of this year. On March 27, the Paducah McCracken County Riverport Authority loaded test containers on a barge of Ingram Barge Company, using a flat-top crane owned by the Paducah Riverport Authority. The barge was towed by an Ingram towboat to the South Harbor facility of America's Central Port, where

The new South Harbor of America's Central Port, located just north of downtown St. Louis in southwestern Madison County, Illinois.

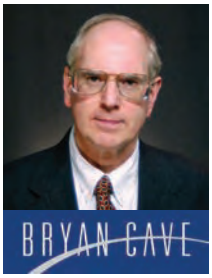
Photo: America's Central Port

it was welcomed by the mayors of St. Louis, Grafton, and Alton, and officials of the U.S. Army Corps of Engineers, MarAd, Ingram, America's Central Port, and Inland Rivers, Ports and Terminals, Inc. (IRPT).

A working group has also been formed under the auspices of MRCTI that includes shippers Wal-Mart and Home Depot, the Illinois Soybean Association, Ingram, IRPT, and Chism-Hardy Investments of Memphis to explore the feasibility of container-on-barge services for cargoes that are heavy, that have low inventory carrying costs, or that are seasonal, as initial candidates for carriage in containers on the inland waterways.

The support of Ingram, the nation's largest barge line, and large shippers such as Wal-Mart and Home Depot, make the prospect credible that container-on-barge could become a regular component of freight transportation on the Illinois and Mississippi Rivers. If that happens, then the ports at which this service will be offered might need to acquire cranes and other equipment, and to make other capital improvements, in order to be able to load, unload, and handle the containers, with the consequent need for additional funding to make such acquisitions and improvements.

For some ports, the possibility of being part of the M-55/M-35 Container-on-Barge Project could provide a good occasion for them to become acquainted with MarAd's Port Planning and Investment Toolkit, including its Funding Strategy Module. Already yielding demonstrable progress and results, the scope and depth of the Toolkit and Funding Strategy Module would make it a worthwhile investment of time in any event for those responsible for port funding to become familiar with these resources.



James A. Kearns has represented owners, operators, financial institutions and end users for more than 30 years in the purchase, construction and financing of vessels engaged in both foreign and coastwise trades of the United States. Kearns has earned an LL.M. (in Taxation) from New York University, J.D. cum laude from the University of Notre Dame, and a B.S.E.E., summa cum laude from the University of Notre Dame.

Fishing Vessels: the Ultimate Workboats

The domestic commercial fishing fleet retools with state-of-the-art tonnage, supported by innovative financing parameters. The toughest job on the planet just got a little easier.

By Kathy A. Smith

The newbuild tide is turning for the U.S. commercial fishing industry, particularly for large, factory-type vessels that work in federal waters off the coast of Alaska. The building of new vessels 165 feet and over was put on hold for several years due to over-capitalization worries, particularly in the Pollock trawl fleet. However, during the past five years, Congress and NOAA's National Marine Fisheries have eased up on statues and regulations to allow the replacement of the larger fleet, many of which are over 40 years old.

Since most fleets are in a rationalized (set quota) fishery, having extra capacity to do more with the fish caught has become a driving factor in new vessel design. For example, and in 2013, two new high-tech vessels started plying northern waters, and in the same year, U.S commercial fishermen landed an impressive 9.9 billion pounds of seafood valued at $5.5 billion. Alaska led the way, with an eight percent volume increase and 11 percent value increase over 2012. And all of it puts a demand on the industry to keep up.

Meeting the Challenge

The new freezer longliners were designed by Crowley Maritime Corporation's subsidiary Jensen Maritime Consultants. Northern Leader, a 184-foot, ABS-classed vessel was built by the now-defunct J.M. Martinac Shipbuilding Corporation of Tacoma, Washington. The vessel also boasts the first Z-drive/diesel-electric configuration.

Northern Leader works in the North Pacific, the Bering Sea and the Aleutian Islands, and can catch, freeze and process about 1,867,000 pounds of fish, with 76,800

Above left image: Ocean Peace during sponsoning showing the new bow being placed.

Left & Right image credit: Vigor

hooks using a Mustad Autoline Super Baiter. In order to accomplish all of that, any vessel needs to be impressively outfitted. Accordingly, the Northern Leader's Propulsion is supplied by two Schottel Z-Drive 1,000 kW rudder propellers and one 300 kW Schottel tunnel thruster. The diesel generating system includes four 715 kW Caterpillar C32 gensets, one Caterpillar 425kW C18 genset, and one 375 kW Caterpillar C9 genset.

Also delivered in 2013 was Arctic Prowler, a 136-foot fishing vessel built by Vigor Alaska (formerly Alaska Ship & Drydock) in Ketchikan for owner Alaska Longline Co. The largest ship of its kind ever built in Alaska, Arctic Prowler has an equally impressive freezer capacity of 16,300 cubic feet and can fish daily with up to 56,000 hooks using a circle-hook baiting system to catch up to 735,000 pounds of a variety of cod, turbot and sable fish. Like the Northern Leader, a vessel with this kind of work schedule needs robust propulsion and power. The vessel is therefore powered by two MTU 8V4000 M53R Tier-2 1,000-hp diesel engines and has a 250 hp Brunvoll FU37 bow thruster, with a prop diameter of 1,000 millimeters. It is, perhaps, fitting that the ship was christened in Vigor Alaska's then-new 250-foot assembly hall.

"Fishermen can build a boat that costs $30 million dollars or more, knowing full well, as does the financing institution, that there is an ability to pay back based on a guaranteed quota. It's a system that allows design engineering firms like Jensen to offer modern vessel designs and for our customers to finance and construct new vessels."

– Jonathan Platt, Manager, Jensen Business Development

Design, Finance & Build

Jonathan Platt, Manager, business development, for Jensen says the allotted quota system allows for financing the costs of these technically-advanced ships. "Fishermen can build a boat that costs $30 million dollars or more, knowing full well, as does the financing institution, that there is an ability to pay back based on a guaranteed quota. It's a system that allows design engineering firms like Jensen to offer modern vessel designs and for our customers to finance and construct new vessels."

Currently under construction slated for delivery in the spring 2016 is the 194-foot, DNV-classed catcher-processor F/V Araho, a newbuild for Rockland, Maine-headquartered O'Hara Corporation being built at Florida's Eastern Shipbuilding Group, Inc. The design is by Skipsteknisk, AS of Aalesund, Norway. The vessel's technology is far and above that of two of company's current Alaska fishing vessels – F/T Enterprise and F/T Defender - which were converted to catcher-processors in the 1990s. Araho's main engine is a Tier-3 EMD 16-710G7 with two Caterpillar main C18 550kW Generators. The vessel is also outfitted with an extensive electrical winch system supplied by Rapp Marine.

Designed to annually catch approximately 25,000 metric tons of fish, such as rock sole, yellow fin sole, codfish, flounder and turbot, Araho has automated plate freezers supplied by Optimar – another Norwegian design that requires only one person to do the job – automated head and gutting machines and three custom-made Marel Belt Graders that help accurately measure and grade the fish.

Amenities, Safety & Efficiencies, too

Accommodations on Araho include 26 wet units (head, toilet, shower) to share between 54 people, and the HVAC system will help with continuous clean air being circulated on the vessel. "Having a bigger boat with more space and state-of-the art equipment will allow this boat to do more with less people," says Vice President Frank O'Hara Jr. "We're hoping to make 21 to 24 trips a year versus 31 to 35 a year for two boats."

O'Hara expects to move the crew from Enterprise and Defender to the Araho in 2016 and continue to fish with the two vessels in order to help pay down the investment. "Araho needs almost the same amount of crew, so no one will be losing their job." Also on the books for delivery in 2016 is another Skipsteknisk design. Blue North, a $36

Image: Jensen

million freezer longliner newbuild that will fish sustainably for cod in Alaska is being built at Anacortes, Washington-based Dakota Creek Industries, Inc. for Seattle-based company Blue North.

The standout feature of Blue North is the moon pool that may well revolutionize hook-and-line fishing by bringing the job indoors – the vessel will have the capability to haul gear from under the water through a "hole" in the bottom of the boat –moon pools are typically used in various drilling and dive support vessel applications, and they are being used in European fishing vessels – but this is the first time a U.S. commercial fishing vessel is making use of this technology.

Frank O'Hara, Vice President, O'Hara Corporation

"It has a huge impact on safety," says President and CEO Kenny Down. "The best cod fishing is in the worst weather time of the year in the middle of winter in the Bering Sea. With the crew now indoors, it's a huge crew comfort factor, that they're now in a climate-controlled environment inside the vessel."

In addition, the vessel will have a Seimens Blue Drive smart electric grid system that will automatically select which of the four diesel-electric engines (one for hotel service and emergency generator) to use depending on load requirements to maximize fuel economy. The heat recovery system is also a first; the sea water that runs through the heat exchangers is captured and reused to make fresh water and heat hot water.

Down is particularly enthused about the Humane Harvest initiative Blue North introduced at the Boston Seafood Show last fall. "We're the first commercial fishing company in the world to recognize that fish are sentient beings and they deserve ethical treatment at harvest," he explains. "We're stunning the fish prior to hook removal so they won't release stress hormones into their systems. The fillets will have better texture and be more nutritional. It's a whole new way of thinking in the fishing industry and I hope other fishing companies will follow suit."

Conversion Boom Looming?

What about the conversion market? Of the nearly 4,200 vessels in the U.S. Alaskan fleet, at least 2,000 most likely need replacing for compliance issues or efficiency of production and safety. "There have been numbers in excess of $15 billion to replace 2,800 of these vessels," says Jensen Maritime's Platt. "It's probably not unreasonable, but over a 10-year period, we would suspect it to be five or six billion that would be replaced in that time frame."

John Waterhouse, Chief Concept Engineer of Elliott Bay Design Group (EBDG), a marine architecture and engineering company in Seattle, says with the drop in oil prices and the stacking up of boats in the Gulf, it's possible that opportunities to convert used supply boats to fishing vessels may happen again like it did in the 1980s. But he cautions, "Every conversion is a compromise. You're getting the boat cheaper to start with, but it's not designed for the job it's going to be doing, so it's going to be less efficient." EBDG is currently providing structural lofting support to Dakota Creek Industries, Inc. for the building of the 261-foot Fishermen's Finest factory trawler to be delivered in late 2017.

Vigor Marine reports that the Portland yard completed a major repair and refit on the F/T Ocean Peace in 2012 that included increasing the vessel's beam from 36 feet to 50 feet with 6-foot, 9-inch sponsons. A bulbous bow with bow thruster was also added, in addition to rearranging piping systems and installing an emergency generator and associated systems. In 2013, Vigor teams in Seattle completed a major refitting of the Alaska Ocean, a 376-foot factory trawler by removing the old fish meal plant and installing a larger modern one. A Promas integrated propeller and rudder system was also installed, and rudder stock and tail shaft repairs were also carried out.

Keith Whittemore, Executive Vice President of Vigor Business Development says the easing of government regulations on new construction and modifications has allowed for more of these activities. "There is definitely an uptick. Part of the reason is that the equipment is getting old and fisheries understand they are at a point where they need to upgrade to improve efficiencies. Fishermen are also getting much better at increasing the value of what they sell, so they're looking for ways to get more dollars out of each fish that comes out of the water."

Looking Ahead

Back on the design front, Guido Perla of Seattle-headquartered naval architecture firm GPA, who designed numerous state-of-the-art fishing vessels in the 80s and 90s, believes European designs don't fit the construction style of America. "I feel that has been a drawback which has contributed to an increase in the cost of the vessels," he says. "We have to build vessels here because we have the Jones Act. But for designers, there is no Jones Act." An industry leader in fishing vessel design for many decades, Perla certainly ought to know.

The immediate future looks bright for builders, designers and the operators themselves, no matter which course – conversion, rebuild or newbuild – that they embark upon. The collective goal of these stakeholders includes providing for a safer, more comfortable and more efficient working environment. Today, viewed by many as 'the most dangerous job in the world,' commercial fishing operators are ready to shed that unenviable label. Armed with new, sophisticated and crew-friendly tonnage, no doubt they are already on their way to getting that done.

***Kathy A. Smith** is a Victoria, BC-based maritime writer who has penned over 100 published trade articles.*

Powerful by Design

Signaling the end of a one-size-fits-all propulsion approach, Karl Senner's collaborative effort with the Shearer Group employs a Steerprop solution designed for a built-for-purpose hull design.

By Joseph Keefe

If there is but one trend that has permeated the inland propulsion markets in recent years, and for all the right reasons, then that would be the proliferation of thrusters and/or so-called z-drives for inland vessels. Taking that trend one giant step further is the notion that installing thrusters for the sake of efficiency can be largely a wasted exercise unless all aspects of the vessel and associated equipment are taken into consideration. And that, in a nutshell, is what the industry propulsion veterans at Karl Senner LLC have done in their latest project involving not only naval architects and marine engineers at the Shearer Group, but also the Steerprop azimuth thruster company.

In a unique pushboat design intended to accommodate the Steerprop solution and also maximize the utility of the thrusters / z-drives, Karl Senner, the Shearer Group and Steerprop all look to leverage deep experience with the U.S. inland markets as well as proven success and experience with Steerprop in the offshore markets, starting back in 2001.

According to Chris Senner, reliability is a key aspect of the Steerprop design. Transitioning that success to the inland markets takes attention to size, design of equipment and the demands of inland waterways. Senner adds, "We work closely with all parties during all stages of the design, build, and operation to ensure the best solution for the application. We aim to minimize downtime and maintenance for the life of the vessel."

Over time, Karl Senner has worked with several naval architects to properly integrate the use of z-drives on the inland waterways in terms of performance, reliability, cost,

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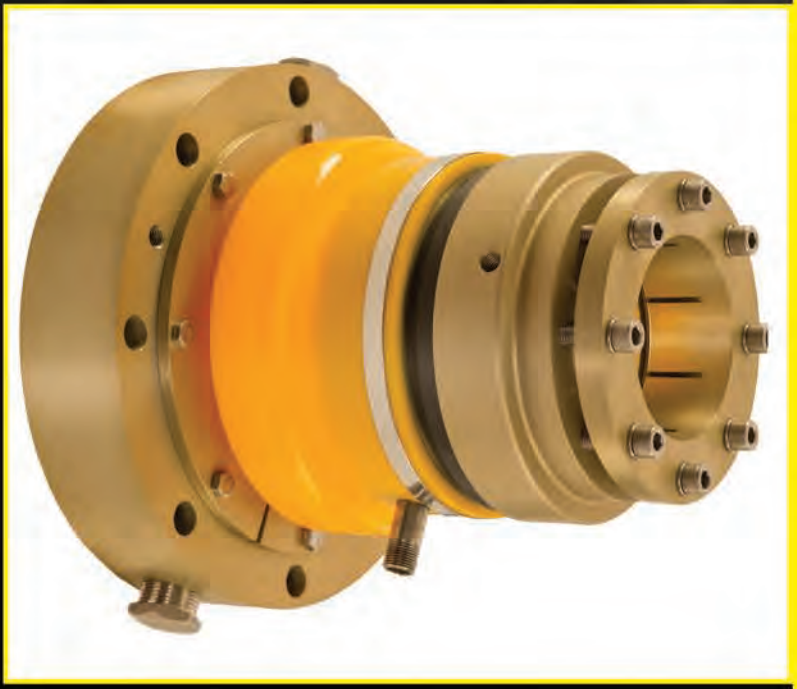

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and service. Chris Senner explained, "We often work with multiple naval architects to assist in the design of the propulsion package. For this particular project, a mutual customer requested that we work with Shearer, using our industry experience and their design capabilities relating to z drive applications to create a new towboat, designed specifically for the use of z-drive propulsion for brown water applications"

"We found a partner in Steerprop that shared a very similar ideology to Reintjes – both companies solely focus on one component of Marine Propulsion, and both offer products known for their robust construction, reliability, and longevity – we knew that Steerprop would be a good fit for inland customers, as well."
– Karl Senner

Unique Design – Built-for-Purpose

The new propulsion package is just that – a package. It fits well into a built-for-purpose newbuild scenario – especially the new inland pushboat design produced in conjunction with partners Steerprop and the Shearer Group. On the other hand, retrofitting existing vessels, says Chris Senner, is considered only on a case-by-case basis. He adds, "We have repowered several offshore vessels in the past and converted them to Steerprop propulsion; similar projects can be accomplished for inland vessels as well." That said, the towboat designed specifically with Steerprop in mind is the best candidate for this concept and provides the best returns in terms of performance, safety and efficiencies.

For their part, this design package that involves z-drive propulsion is not the first that the Shearer Group has undertaken. Each project, says the Shearer Group's Joshua Sebastian, is different and involves a lot of analysis and many variables to take into consideration. In contrast, he says, "Many times, designers never revisit the hull shape to ensure the best flow into the propulsion on a hull designed for another propulsion system." The Shearer Group designs each hull to a client's specific needs, tailoring the hull shape for the desired propulsion configuration and operating areas.

While converting an existing standard configuration vessel with z-drives is possible, it isn't necessarily practical. The Shearer Group has completed such conversion designs for clients, but Sebastian adds, "That kind of job represents technical challenges and is never an easy task." This hull, in contrast, was designed from the ground up to match the Steerprop solution, maximize the efficiencies of a z-drive boat and to reduce vibration.

For example, the collaboration between the three groups incorporates an 8'-6" draft, with attention towards the 9' controlling depth on inland waterways (but not always achieved by USACE dredging). That lets the boat do its job in today's real waterway conditions. Senner told MarineNews, "For a vessel designed to operate in the 'ditch' between New Orleans and Houston, the operator and naval architect both agreed that we should keep draft to a minimum, and target under 8'-6" to stay off the bottom." But, that's just one of the many advantages that the new towboat offers.

Steerprop's fabricated steel housing is typically stronger and lighter than cast versions. They are also easier to repair if needed, and have shown no signs of corrosion or erosion. These features are a sure benefit for Inland Operators.

Many factors come into play when selecting the appropriate thruster for the application: operating profile of the vessel, operating environment, thrust demand, depth restrictions, bottom composition, risk of impact, and even 'tier' emissions requirements can come into play. These factors, say Senner, are all critical when selecting the most appropriate unit for the job.

A Built-for-Purpose Towboat at a Glance …

Length: 90'	Design Draft: 8.5'	Fuel: 50
Breadth: 39'	Berthing: 7	Potable Water: 10
Depth: 10.5'	Lube Oil: 1,500 Gallons	Slop Oil: 1

Senner also told *MarineNews* in October, "Once the unit is integrated into the vessel design, Karl Senner and Steerprop technicians analyze shafting arrangement options, and evaluate waterflow into the unit. Even small hull changes to optimize waterflow and hydrodynamics can greatly decrease fuel consumption and increase performance."

Karl Senner touts the 15 year service time between overhauls for Steerprop units as opposed to the typical, more frequent overhauls of other options. In fact, the first Steerprop units put into operation in 2001 have been running as scheduled, 14 years later. Performing as designed, with only routine maintenance based around regulatory 30-month dry-dockings, these Steerprop units have required no major work throughout their 14 years in operation. And, when service or repairs need to be done, the standardized Steerprop product reduces costs as well as the number of parts needed to be stocked to get that done.

When it comes to inland propulsion, geography can mean everything. And because Steerprop (Finland) has significant experience in ice, these thrusters promise to be especially robust in inland waters that can be heavy with debris (and sometimes ice) in the northern U.S. rivers at the beginning of each navigation season. Separately, Steerprop thrusters have also seen much service in the demanding inland waterways of South America, where demanding performance regulations can only be met with the use of z-drives.

One Stop Shopping

Competition is a good thing, and there are other propulsion packages on the market. A recent trade show had three or four offerings on display, some with as many as five involved parties in the installation. In contrast,

"Once the unit is integrated into the vessel design, Karl Senner and Steerprop technicians analyze shafting arrangement options, and evaluate waterflow into the unit. Even small hull changes to optimize waterflow and hydrodynamics can greatly decrease fuel consumption and increase performance."

– Chris Senner

the Karl Senner turnkey inland towboat would be a one-stop-shop. Chris Senner adds enthusiastically, "We can work with anyone at any stage of a given project, from new concepts to re-powers. We can supply all drive components from the fly wheel back, including Reintjes Gearboxes, Steerprop z-drives, and electrical components for diesel electric systems from EPD out of Houston. Furthermore, on the inland side, customers can still utilize Karl Senner for their conventional vessels equipped with gearboxes, as well as for their next generation z-drive vessels, and diesel-electric packages. This allows our customers to have one source for all their propulsion needs." Post-delivery, Karl Senner provides hands-on training to operators both

The Steerprop Advantage at a glance …

Hi-Performance Nozzle	The HJ3 High Performance / High Efficiency Nozzle's hydrodynamic shape provides 5-6% increased bollard pull, with 10% higher efficiency at speed – when compared to a conventional 19A type nozzle.
Durability	The HJ3 Nozzles come with a stainless steel inner surface, from the leading to trailing edge of the nozzle. Rolled and attached in one single piece, with no weld seams on the inner diameter, the lining can be up to 1" thick to allow for minimum service and repair to nozzles.
Unit Sizing	An over-sized "brown water rating" is used when sizing Steerprop units for Inland Waterways, similar to an ice class rating. The blade's design utilizes strengthened stainless steel propellers that maintain optimum performance, but allows to run through the inevitable debris.
Overhaul Intervals	Steerprop units are designed for 75,000 to 100,000+ hours between overhauls. This reduced maintenance interval provides Steerprop with a low cost of operation.
Housing design	Steerprop's housings are steel-fabricated (not cast); more resilient to impacts, more likely to bend than crack upon impact, easier to repair and have shown no signs of corrosion or erosion.
Short Stem Height	A shorter stem height (distance from propeller shaft to input shaft) minimizes the distance from the propeller shaft to the slewing ring. A reduced distance between components reduces axial forces on the slewing ring, creating a stronger unit.
Seal Design	Steerprop uses IHC Supreme 4 lip Seals on the propeller shaft seal, creating 4 separate barriers between lubrication and outside water. Each seal is designed for high silt/sand environments. The steering seal is a triple lip seal, does not require major disassembly or overhaul for service. Condition monitoring is offered on both propeller and steering seals.

on board vessels and in their New Orleans-based facility, where curriculum includes both theoretical training as well as hands on training with real equipment from mechanical to control systems. A spare parts inventory of more than USD $20 million in assets and service centers in New Orleans, Paducah, Seattle and Houston (coming in 2016), rounds out the turnkey Karl Senner Service package.

Why Steerprop?

Way back in 1967, Karl H. Senner sold the very first Reintjes Gearbox in the North America to Dickie Gonsoulin of LeBeouf Towing. Since that time, the inland waterways have always been a core focus of the Karl Senner business model. But, the company's inland success led then into the offshore markets, as well. As the demands of offshore changed, and technology evolved, Karl Senner, LLC adapted its product offerings to grow with the industry. Karl Senner continues, "We found a partner in Steerprop that shared a very similar ideology to Reintjes – both companies solely focus on one component of Marine Propulsion, and both offer products known for their robust construction, reliability, and longevity – we knew that Steerprop would be a good fit for inland customers, as well."

Steerprop knows 'impact.' Among the world's most experienced OEM's in the field of ice class azimuth propulsion, Steerprop's product portfolio offers units designed from 800-to-25,000kW, and the company's only focus is azimuth propulsion. Steerprop delivered the main propulsion thrusters on three of the largest azimuthing ice breakers built in the world to date – vessels that operate in the harshest marine environments on earth. And, according to Chris Senner, many of the design features that differentiate the Steerprop product, should be extremely advantageous to the US Inland Operators. Steerprop's HJ3 High Performance Nozzle design provides increased fuel savings, higher bollard pull, increased thrust at speed, and minimal nozzle maintenance. With a 15 year TBO (time between overhaul) design, Steerprop provides low cost of operation combined with safer maneuvering than conventional shaft lines, especially for crash stops, and maneuvering around river traffic. But all of that comes only when the vessel's design is matched to take full advantage of the equipment that propels it through the water. That because – on inland waters – one size does not fit all, any longer.

Image credit: Sunny Daze Artistry, LLC.

Marad Propels

Marine Engine Technology Development

The U.S. Maritime Administration has provided almost $3 million to keep marine environmental efforts on track even as financial advantages of doing so diminish in a changing energy equation.

By Joseph Keefe

Through October of this year, the U.S. Department of Transportation's Maritime Administration (MARAD) has provided millions of dollars to support the development of not one but three new emission-reducing maritime solutions for industry. As proof of the industry's appetite and enthusiasm for the program, a competitive bid arraignment advertised in April and then again in June, yielded Marad a total of 20 applications for the combined, three project funding allocation. The only sad part was that all 20 simply could not be accommodated.

The first, a cutting-edge liquefied natural gas (LNG) conversion demonstration project for inland waters, was followed by a cooperative agreement that will allow an on-board air pollution control device. Another cooperative agreement involves Tote Maritime, who will, with Marad's help, repower the *MidNight Sun* to LNG propulsion. All of these efforts, say Marad, will aid the United States maritime industry's ongoing effort to decrease its environmental footprint.

More than Advocacy: Real Support

Through a cooperative agreement, MARAD provided $730,000 to Pittsburgh Region Clean Cities (PRCC) to convert a towboat engine from diesel to LNG. Results from this demonstration project will help expand the development and availability of natural gas conversion technology for smaller scale tug, tow, and harbor vessels. PRCC will collect air emissions data before and after the conversion, which will allow for operational and emissions compari-

sons. According to Marad, the towboat to be converted is the M/V *Ron Chris*, owned by Walden Industries.

A separate cooperative agreement will provide Interlake Steamship Company (Interlake) of Ohio $500,000 to retrofit the M/V *Lee Tregurtha*, which operates on the Great Lakes, with exhaust gas-scrubber technology. This modification will significantly reduce sulfur emissions and meet or exceed North American Emissions Control Area requirements for the 800-foot, bulk-cargo vessel. Interlake will provide MARAD with pre- and post-installation air emissions data, and lessons learned on scrubber installation and operation.

Separately, still another Marad $900,000 cooperative agreement with Totem Ocean Trailer Express (TOTE) will allow for the development of knowledge regarding the costs and benefits of vessel conversions to liquefied natural gas (LNG) propulsion. Tote will convert the containership M/V *Midnight Sun* to operate on LNG, a demonstration project that is part of yet another ongoing program to promote increased use of alternative fuels and technology in the maritime industry.

A National Maritime Strategy at Work

Marad Chief Paul "Chip" Jaenichen told ***MarineNews*** in October, "The Pittsburgh region submitted an application to put LNG on an inland towboat. That's the first opportunity to do that, so we did fund that particular project. The advantage of that is that we get the 'before and after' data, which is what we really want. In that same announcement Interlake was also given a $500,000 grant that supported scrubber technology installation and we did partner with SOCP on this. And, we're going to get before and after data from that, as well."

Underscoring Marad's efforts to promote the U.S. flag merchant fleet, Jaenichen touched upon one of the five pillars of his nascent "National Maritime Strategy" – namely, the need to spur innovation on the waterfront. He explained, "These efforts are designed to spur innovation and in these cases, the government can assume some of the risk for commercial entities as they move forward. Will it happen if the government doesn't get involved? The answer is yes. But, if we do get involved, it helps it to happen sooner."

Jaenichen further insists that, at some point, operators are going to have to make some sort of technology improvement to meet the emission control area requirements. This may mean scrubbers, LNG or something else. And he concedes, "Marad's support may not give others the confidence to move forward at a time when it might not make financial sense to convert, but it will give them the data with which to make an intelligent decision on which way to go." Jaenichen adds, "We have to get that data before and after. And sure, we want to know about NOx and SOx, but also methane slip. All of it is important."

According to Marad, the Midnight Sun conversion will start in 2017 and has to be completed by 2018. The other projects are scheduled to kick off over the course of the next 18 to 24 months. With regard to the towboat conversion, Jaenichen says, "The towboat conversion involves a much smaller volume of LNG. But, we've taken a look at what the Norwegians have done with their Ferry systems. The tug will be dual fuel – the challenge, of course, is the storage of the LNG itself. And, of course, the LNG bunkering and refueling requirements still have to be worked out with the Coast Guard." The M/V *Ron Chris*, a Walden Industries towboat, is the target of this grant. Marad, in this case, will study both the emissions data and the cost benefits of the move.

Importantly, the cooperative agreements come with strict caveats. Recipients must ensure that proper emissions monitoring – before and after the conversions – are in place and that data provided to Marad for further research. Beyond, any funds provided must be spent domestically. Jaenichen adds that Marad is waiting to see what 2016 funding levels might support in terms of future projects. Funding in this case comes, in part, as a part of the Marine Environmental Technical Assistance (META) program. The META program seeks to foster collaborative efforts among Federal agencies, academia, industry and the public to address critical marine transportation environmental issues.

Propelling Ahead on Many Fronts

Beyond the funding agreements mentioned above, Marad remains busy in other aspects of the marine propulsion arena. For example, the DOT's maritime modal arm just recently announced the availability of the Fourth Edition of the "Exhaust Gas Cleaning Systems Selection Guide." This edition provides owners and operators with the latest information on scrubber technology available to assist the industry in meeting new sulfur emissions standards. This edition includes guidance on regulatory requirements and compliance options, life cycle analyses for various vessel types, review of scrubber technology and technical insight into integration, operations, and maintenance challenges. The guide can be found at **http://www.socp.us/article.html?aid=120**.

Elsewhere, and in August, the Maritime Administration celebrated the launch of field trials for the first prototype hydrogen fuel cell unit to power onboard refrigerated containers. Marad, through a cooperative agreement with the U.S. Department of Energy, provided $815,000 to fund the clean energy powered container unit that could pave the way to dramatically reduced harmful emissions at the

Image credit: Drew Arneth

Port of Honolulu. Built into a standard 20 foot shipping container, the pilot hydrogen fuel cell unit will replace a diesel generator currently powering refrigerated containers both in port and while being transported on water by barges along routes between Honolulu and other Harbors by Young Brothers, a local shipper of goods within Hawaii.

As with the other cooperative projects and during the six-month deployment period, performance feedback and data is being recorded to determine the environmental, energy, and cost savings from the hydrogen fuel cell unit. Upon completion of testing, Sandia National Laboratories will analyze the

"These efforts are designed to spur innovation and in these cases, the government can assume some of the risk for commercial entities as they move forward. Will it happen if the government doesn't get involved? The answer is yes. But, if we do get involved, it helps it to happen sooner."

– U.S. Maritime Administrator Paul "Chip" Jaenichen

operational, safety, and cost performance data to develop a business case for using hydrogen fuel cells for marine use.

The Case for a Re-Powered Marad

Long neglected and underfunded – in comparison to its other DOT modal cousins in air, rail and trucking – Marad has soldiered along largely without regulatory teeth and, in many cases, the adequate resources to support the causes that they advocate. But, the projects and cooperative agreements outlined above – cumulatively representing almost $3 million – represent tangible efforts to support a cleaner and more efficient maritime industry. That's real progress. Chip Jaenichen's leadership puts an exclamation mark on all of that and gives all stakeholders real hope that the promised "National Maritime Strategy" will be much more than a *paper tiger* when it is unveiled later this year. Until then, clean(er) and better funded marine propulsion is already purring along an all fronts.

Image credit: Sunny Daze Artistry, LLC.

Marine Closure Selection

Windows, doors and hatches are an essential and integral part of any commercial vessel. The key to selecting the appropriate closure for a given application is to focus on performance, features and aesthetics.

By Craig Ritchie

Regardless of how they might vary in size, style, construction or purpose, every vessel afloat shares one key element – they all contain windows, hatches and doors. It is difficult to imagine a functional commercial vessel without them. From fishing boats to tugs to yard tenders to military craft, hatches, doors and windows – marine closures – serve an essential purpose. But whether designing a new build or refitting an existing vessel, closure selection is often one of the most overlooked, yet critical, elements in vessel design. More often than not, the discussion ends with a simple "and the door goes over here."

Balancing the Budget, Respecting the Regulations

"There's a bit more to it than that," notes Ron Dykes, commercial and government/military general sales manager for Gold Beach, Oregon-based closure manufacturer Freeman Marine. "And it goes far beyond ensuring that products simply meet Class, Flag or International Treaty requirements. For example, a door or window to be fitted at main deck level will face different requirements than one installed in a wheelhouse two decks up. Even on the same wheelhouse, a forward-facing window will face different design pressures than one situated on the back of the wheelhouse facing aft."

"…it goes far beyond ensuring that products simply meet Class, Flag or International Treaty requirements. For example, a door or window to be fitted at main deck level will face different requirements than one installed in a wheelhouse two decks up."

– Ron Dykes, commercial and government/military general sales manager at Freeman Marine

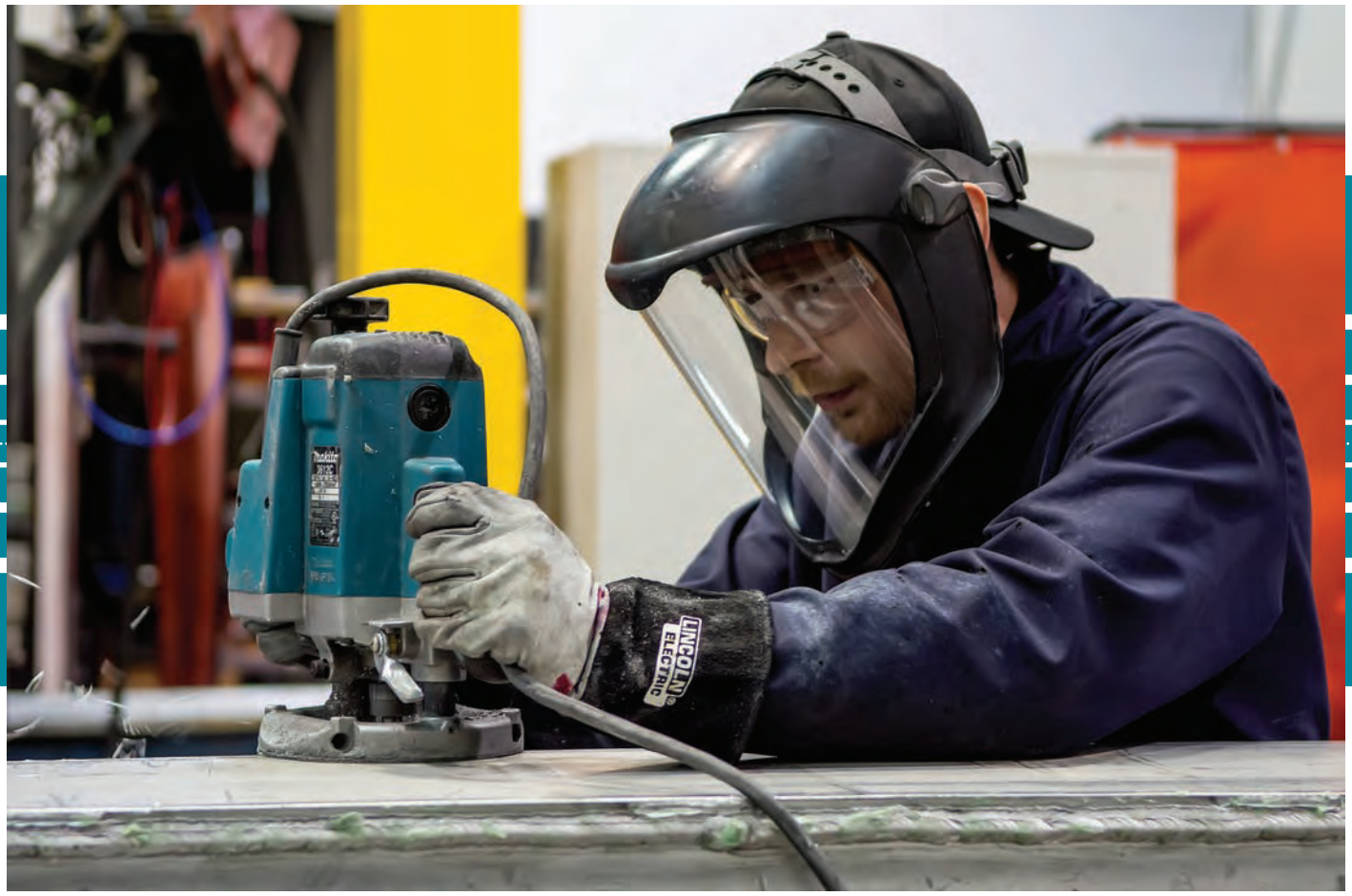
The most tempting response might be to simply install the highest grade of closures throughout. While that may satisfy minimum performance requirements throughout the vessel, budgetary considerations typically rule out such an approach. Attaining that optimal balance of performance and cost-efficiency requires carefully determining exactly what is required of each individual closure, and selecting accordingly.

In selecting and specifying marine closures like windows, doors and hatches, the three key criteria are performance, features, aesthetics, says Andrew Mund, technical director for AdvanTec Global Innovations, a supplier of closures to commercial, military and recreational yachting markets.

"It sounds obvious to say it, but any closure, whether it is a window, door or a hatch, has to be of equivalent strength to the deck or bulkhead to which it is installed," says Mund. "And yet, surprisingly, the shipyard may not always provide that information. Just specifying that the design calls for 30-by-30 window doesn't really cut it."

Marine Classification Societies, Flag States or International Treaties will always impact the choice of critical closures, fittings and openings. A wide range of regulatory compliance factors and type approval factors come into play when specifying closures for work boat applications. These may include:

ADA	**IACS Rules**	**SOLAS**
IMO	**MCA (or flag state)**	**Nav Sea**



Performance

Any discussion concerning performance requirements of marine closures will inevitably focus on design pressures. Closures generally must correspond to one of three tightness standards. Water-tight closures must withstand water pressure from either side of the opening, while weather-tight closures are intended to withstand pressure from one side only. Spray-tight closures, typically mounted higher on a vessel, are built to withstand penetration from spray and rain, but not standing water. "I find that tightness variations are often misunderstood," says Mund. "It is environmental considerations that impact design pressures. Performance standards are thereby dictated by where the closure is located on a vessel, and its exposure to the environment. They will also be determined by additional factors, such as meeting relevant fire-rating requirements, for example."

One of the challenges facing closure manufacturers is that of satisfying regulatory requirements when variances exist in international standards. "Apart from differences in design/build standards, the nomenclature used in different countries when describing required features varies considerably," adds Dykes. "You have clips versus dogs, coaming(s) versus frame, free opening versus clear opening, rough opening versus plate cut, for instance. Working with builders in different countries around the world requires a bit of flexibility, based on the varied descriptions in closure requests received."

Features

Beyond performance criteria, the second consideration in closure selection – and a key factor in determining end cost – is the feature set a given window, door or hatch may be required to include. It is tempting to consider features as the elements we can physically see. Doors and hatches may or may not include inset windows, for example, and windows may or may not be required to open. Should any desired glazing be clear, or frosted for security considerations? Is Low-E glass required?

Although primarily used in recreational yachts, Smart Glass – which can be adjusted from clear to opaque at the push of a button or even remotely, from a cellular telephone or iPad – is beginning to find acceptance in some

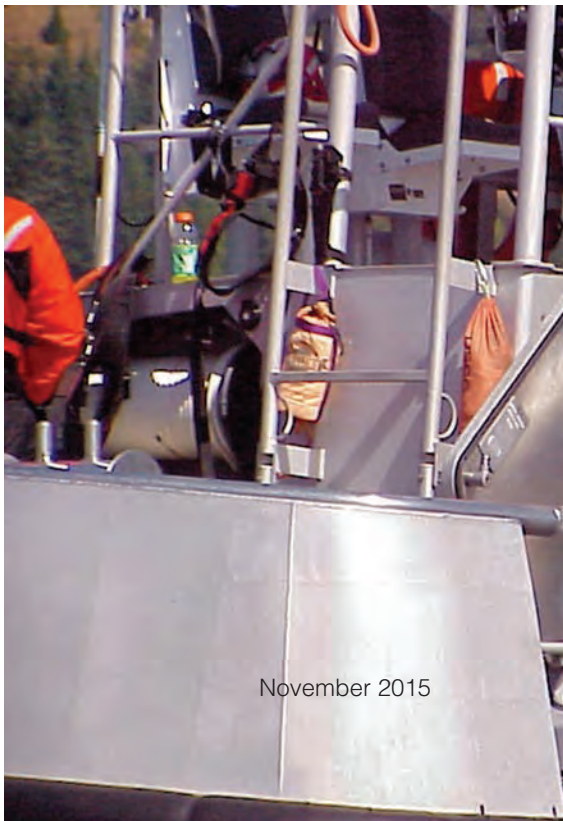
"It is environmental considerations that impact design pressures. Performance standards are thereby dictated by where the closure is located on a vessel, and its exposure to the environment. They will also be determined by additional factors, such as meeting relevant fire-rating requirements, for example."

– Andrew Mund, technical director for AdvanTec Global Innovations

commercial applications in view of its security benefits.

Other features, while not as immediately visible, can have a profound impact on the daily operation of the vessel. Whether a closure is power operated, or operated manually, would be one example. Can the closure be operated remotely? Does the closure utilize quick-acting dogs (also known as central dogging), where a single handle turns an internal linkage to activate all of the locking lugs in the frame at once? Or must each dog be opened and closed individually, requiring more time and effort on the crew's part?

"The range of features available on modern closures is quite extensive," says Mund. "Increasingly, closure manufacturers are being tasked with providing greater utility and conve-



nience. Doors and hatches may require remote monitoring systems for security, as an example. A Captain ready to depart can see immediately that there's a hatch open someplace on the vessel, or that a door which should be secured to maintain watertight integrity; isn't."

Still other considerations which would be classified as features may not be particularly visible nor impact daily operation, yet still impact cost. Is the closure of a type that clamps into position, or is it permanently welded to the boat? "Closures built for military or Coast Guard applications can have additional feature requirements that go beyond what one would expect to find in a typical work boat," says Dykes. "Bullet-proof glazing or the ability to withstand a rollover in heavy seas would be examples."

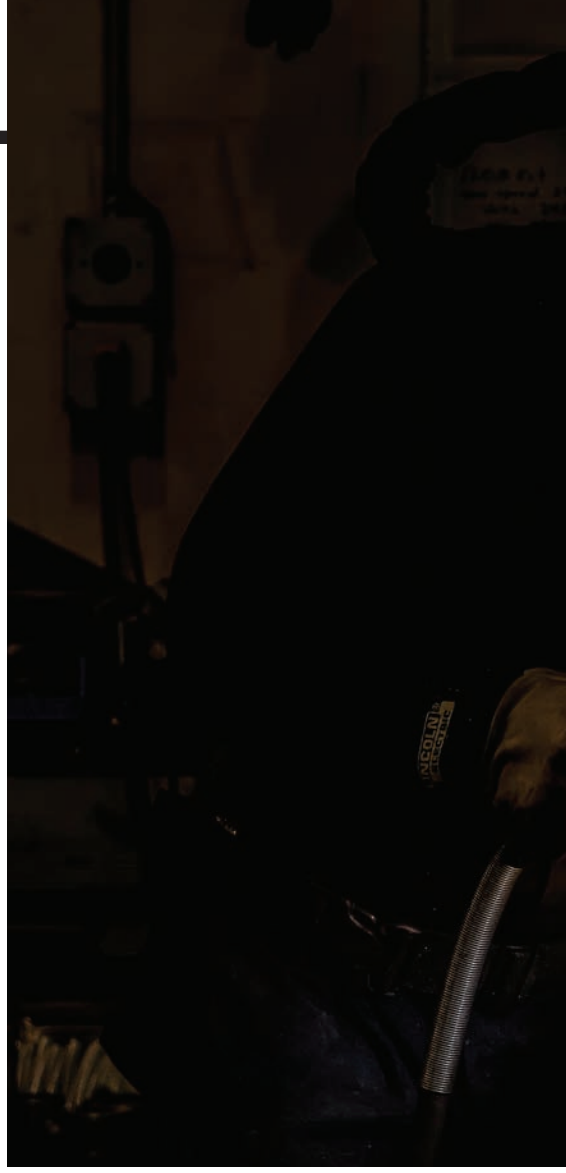
Aesthetics

Closure specification considerations may be further determined by aesthetic values. The fit and finish of a given closure, for example, can not only impact product cost, but also the expected service life of the product. A door or hatch, for example, may be offered in identical models with bare metal, anodized, painted or powder coated finishes – each with a vastly different service life expectation, particularly when operated in salt water environments. "Doors and hatches may be single skinned, or double skinned depending upon the application," notes Mund. "A pilothouse door may have a wooden veneer applied to the interior side for cosmetic reasons. These all impact the product cost."

Ron Dykes agrees that aesthetic considerations can have profound cost implications over the life of the closure. Where a shipyard or even the operator itself may be tempted to save a few dollars by painting a hatch themselves, that decision can lead to expensive problems after a few seasons of use. "Proper bare aluminum metal preparation prior to painting is essential, and we always recommend clients let us paint our products rather than having someone else do it and having corrosion issues later," he says. "The acid-etch Alodine treatment of bare aluminum prior to applying a marine urethane coating system is priceless in value. Quick, cheap paint jobs that do not follow proper procedures are far more costly over the life of the vessel than paying fairly for a correct paint system application during the manufacturing of the product."

Final Considerations

While a focus on performance, features and aesthetics goes a long way toward ensuring the successful selection and installation of marine closures including hatches, windows and doors, these decisions must inevitably be tempered against one additional measure – cost. "Budget is always an important consideration," says Dykes. "Product options should stay within what would be considered a typical normal budget realm based on vessel value and service requirements." That's a lot to think about. And, while the topics windows, doors and opening are surely not Rocket Science, they do merit more than passing attention when outfitting today's workboat. Doing otherwise just might ultimately close the door on post-delivery profits in a competitive commercial marine environment.



Craig Ritchie is a veteran marine trade journalist and editor, who writes about a variety of maritime and business topics.


Credit: Seacor

Pipe Dream

Non-traditional piping systems are safely making inroads on today's workboats – for all the right reasons.

By Joseph Keefe

The global workboat equipment market is changing rapidly. On deck, in the wheelhouse and in the engineroom; that's typically an easy thing to see. Automation, remote monitoring, Tier IV engines and ECDIS overlays usually get the headlines, but in truth, there are hidden improvements that don't meet the eye. These carry cost, weight and manpower savings straight into your bottom line. Nowhere is that more apparent than in the increasingly frequent use of non-traditional piping materials for a myriad of vessel service roles.

Workboat operators can choose from many styles of non-traditional piping and materials, all of which come with myriad advantages. And, there are compelling reasons to do so. That's because the cost-efficient workboat consists of more than just bells and whistles on deck. Go on: *take a look under the hood.*

SeaCor Piping from Georg Fischer

Just one word: *Plastics*. The iconic quote from the 1967 hit film, *The Graduate*, actually came to have meaning. At sea, it took longer (as do most new concepts) to find its way up the gangway. Nevertheless, Georg Fischer's SeaCor is a High Performance Polymer containing proprietary compounds that allow the material to have lower flame spread and smoke toxicity characteristics than other plastic piping systems available. Before 2010, plastics had been allowed in

Overhead view of lavatory installation

Credit: Viega

a few applications on vessels but upon the acceptance of the IMO Resolution MSC.307, as adopted in December 2010, the final adoption of the fire testing procedures of plastic piping by the IMO and USCG delivered more applications where it can be used.

Available from U.S.-based W&O Supply, SeaCor is applicable to all vessel types, and brings many weight and cost-savings benefits to ship owner-operators. SeaCor is a solvent welded system utilizing a specially formulated cleaner and cement; furthermore Georg Fischer has incorporated optical brighteners in its formulation that can be viewed with a UV light as a means to inspect the system to ensure the proper solvent cement has been utilized for joining (SeaCor solvent cement has improved chemical resistance than conventional cements). This can be critical in marine applications. No special tooling is required

SeaCor Thermoplastic Piping and DWV Fittings at a Glance ...

Reduces labor costs	**Eliminates multiple systems / skill sets**	**Minimum lifecycle of 25 years**
Lower Life Cycle Costs	**Can be installed without dry-dock**	**Less susceptible to scaling**
ABS / USCG Approved	**Eliminates most hot-work / gas freeing**	**Light Weight**

for its installation.

The number one reason that an offshore or workboat operator might opt for SeaCor products as opposed to traditional, standard fittings involves lower cost of ownership. This thermoplastic piping system has a longer life span compared to traditional standard fittings, sometimes as much as 25 years. While the initial material costs may be more than traditional fittings, especially with the downturn in the price of copper, the overall lifecycle costs are dramatically reduced, beginning with the installation of the material. Throughout the life of the product, owner/operators will see reduced maintenance costs and additional savings from the lower material weight of the installed product.

Another reason to turn to thermoplastic couplings for grey, potable, and sewage lines is the remarkable savings in weight that it creates. Steve Hartsaw, Senior Project Manager of Engineered Solutions at W&O Supply reports, "Based on an actual bill for materials on a typical OSV system for the grey, potable and sewage lines, with a change from steel to SeaCor we found there to be a 75 percent reduction in material weight. A complete steel system would weigh in around 10,000 lbs., whereas the complete SeaCor system weighs just more than 2,500 lbs."

In this case, time also equals money. A vessel operator who opts go to SeaCor piping and fittings (for all applications that would allow for such use) would be looking at substantial savings in terms of both eliminating hot-work and gas freeing, not to mention down time while the work is accomplished. In the yard, depending on the type and size of vessel, of course, the time savings alone substantial. For example, a typical OSV employing this product on grey, potable and sewage lines could expect to expend 298 man-hours that project. According to the Mechanical Contractors Association, the same job using steel or copper materials, might take 1,018 man-hours. Those savings might translate into a win for the vessel owner, the boatbuilder, or both.

W&O's Hartsaw admits that the apple-to-apples cost comparison is a little harder. He told *MarineNews*, "The base material costs for SeaCor technology is higher than traditional metal components, especially with the recent drop in Copper. Using the typical OSV system as a baseline for comparison, the SeaCor products are

Viega features and benefits at a Glance …

Copper-nickel alloy (CuNi 90/10) (seawater systems)	Compatible with existing Viega press tools
The only copper-nickel fitting with double press connection	Helps reduce installation time up to 90%
Makes secure connections in less than seven seconds	Easily transition to imperial and metric sizes
Provides safety - no fire watches or hot work permits	SeaPress product in stock and ready to ship
Viega Smart connect identifies unpressed connections	Metric/standard fittings to match any system
Secure connections made with battery powered tool	Innovative tooling allows pressing in tight areas

approximately 25 percent more in the initial build. However, over a 20-year life cycle of the system, traditional materials would have to be replaced twice, whereas SeaCor would not have to be replaced." Hence, life cycle total ownership costs of the thermoplastic piping should be less.

While SeaCor significantly minimizes the amount of hot work required for installation, there are still a few aspects of the installation process that require this method, including the mounting of hangers and brackets. Even with the hot work still required for that portion of the installation, this non-welded piping system provides substantial savings in time and cost. Most importantly, welding production can be carried out on systems where it is the only method of connection, therefore increasing productivity and better allocation of skilled welders.

The traditional welding process requires the system material to be laid out, tacked into place and then a welder to come back through to make the welds. SeaCor eliminates the weld-out of joints after fit up and the fire-watch personnel that must oversee the welding. So rather than having a two-step installation process down the line of a system, SeaCor allows for one seamless installation process.

Unrelated to hot work, the light weight of the SeaCor product also reduces the required number of personnel needed to install the system and the equipment needed to move the materials.

As good as it sounds, some operators may have second thoughts about the strength and durability of plastic piping – no matter what it is used for. That said, regulations require the material to have a very high strength – SeaCor has the same wall thickness as schedule 80 steel pipe, which al-

lows the product to meet regulation strength requirements. Numerous stress tests were required to receive overall approval of SeaCor.

The advantages of these plastic piping systems are many, but nevertheless, users have to be aware of their surroundings and work to prevent any extremely heavy items from damaging the system. Hartsaw advises, "The recommended best practice is that where plastic piping is used, it should be protected in areas where it is exposed to high impact."

According to W&O, at least 50 percent of SeaCor purchase orders are made for retrofit projects and they anticipate in 2016 that number will jump up to as much as 70 percent, due to the slowdown on the new construction side of the business. Retrofit projects vary all the way from smaller lavatory relocations on workboats, all the way up to complex projects such as total grey and black water system replacements on military vessels. Increasingly, and as more commercial operators become more familiar with the materials and their utility, industry is accepting this type of piping technology – not only the SeaCor product line but also other non-welded piping systems. Hartsaw admits, "We still find pockets of 'traditionalists' when it comes to using plastic piping onboard vessels but in our experience, once customers have the opportunity to touch, feel and test the SeaCor product, they are open to using the piping system on board their vessel."

Applications for Viega SeaPress Fitting Systems:

Fresh Water	Seawater	Flammable Fluids	Miscellaneous
Machinery cooling	Bilge and ballast	Cargo oil	Compressed air system
Fire main	Wet or dry fire main	Fuel oil	Condensate return
Sprinkler system	Foam system	Lube oil	Vacuum piping
Hot/Cold potable water	Water spray/ sprinkler	Hydraulic oil	Sewage discharge

Hartsaw points to a major dredge customer where the Port Engineer wanted to use the SeaCor product. However, the Chief Engineer had major concerns with installing plastic piping in a harsh environment. The engineer couldn't see how the SeaCor product could withstand the harsh environments commonly encountered on the dredge vessel. He conducted a few 'personal testing procedures' and found the product to be stronger than expected, and has since allowed the installation of SeaCor on their vessels.

SeaCor can be used in Class III "Non-Essential Systems" that do not require a fire endurance. This Includes Potable and Sanitary water systems, water treatment and other accommodation and engine room applications. Complete penetration solutions are available by different approved manufacturers; W&O Supply suggests the use of Rise crusher sleeves and NO-FIRNO sealant.

Safety from the Start: the Viega Piping System

It turns out that plastic piping isn't the only kid on the block when it comes to alternative vessel piping options. For example, Viega – a firm which markets several options in alternative piping solutions – bills itself as the superior choice for shipboard

**Typical Seacor installation:
A large pipe is the black water system,
smaller pipe is for fresh water**

"Based on an actual bill for materials on a typical OSV system for the grey, potable and sewage lines, with a change from steel to SeaCor we found there to be a 75 percent reduction in material weight. A complete steel system would weigh in around 10,000 lbs., whereas the complete SeaCor system weighs just more than 2,500 lbs."

– Steve Hartsaw, Senior Project Manager of Engineered Solutions at W&O Supply

systems. They've been around for a long, long time and they have a product for virtually any on board service you can think of.

Viega ProPress for marine systems is available in copper, stainless and copper nickel. Durable and designed to perform in the harsh environments of the open sea, Viega ProPress systems are best suited for fresh water systems while copper-nickel Viega SeaPress is specifically designed to stand up against sea water. Viega ProPress, Viega MegaPress, and Viega SeaPress can be used effectively in compressed air systems as well as flammable fluids and other marine systems. By combining different materials and sealing elements, Viega systems can be customized to suit most shipbuilding applications.

In a nutshell, Viega ProPress fittings are designed with cylindrical pipe guides to keep the pipe straight and protect the sealing element during assembly. Fittings without cylindrical pipe guides risk making an unsecure connection. Without the pipe guides, installers can damage the sealing element. Viega fittings are pressed before, after and on top of the sealing element in a single step which creates a permanent connection that is secure and guaranteed to last. And, of course, Viega ProPress for marine systems are tested and comply to International Association of Classification Societies (IACS) standards.

Viega's SeaPress is an appropriate

choice for on board systems. Available in copper, stainless and copper-nickel, it is approved for seawater, fresh water, fuel oil and fire main applications. SeaPress is specifically designed to stand up against the harsh environments of the sea. The press technology makes easy, consistent and secure pipe connections in less than seven seconds; saving labor and money by reducing installation time by as much as 90%.

The same press technology that revolutionized copper and stainless steel joining is also available for copper-nickel systems. Viega SeaPress is a copper-nickel, cold press system designed specifically to stand up to the harsh conditions found in marine environments. With its 90/10 copper-nickel alloy and EPDM or HNBR sealing elements, Viega SeaPress is approved for a variety of different applications found on board vessels, including fresh water, seawater and fuel oil systems. Viega combines reliability and speed to complete a pipe joining project quickly and efficiently, reducing re-work and costly downtime.

Viega's system(s), in a world where qualified shipyard technicians are hard to find, are easy to install, save time and provide for a more versatile piping system. A one-stop shop for almost all on board piping needs, Viega boasts the widest range of marine approvals in the business, encompassing at the same time, an even wider array of potential tasks on board any vessel.

Pipe Dream

There really isn't any good reason not to at least look at alternative, non-traditional piping for the typical workboat. Ideal for newbuild projects, the retrofit market beckons, as well. The benefits are many and downside, almost non-existent. Go ahead – visit your competitor's boat and take a look under the hood. It likely has non-traditional piping installed in places you never thought possible – for all the right reasons.

Three for the Money

MarineCFO, RINA and TBS combine their collective expertise to bring value, compliance and, more importantly – safety – to the sub M space.

By Joseph Keefe

As the 'tin can' represented by the so-called "Subchapter M" towboat rules gets once more kicked down the road, this time to February 2016 (maybe), the clock is still ticking loudly for those towing operations that have yet to climb on board the safety train. At the same time, quality operators see standardized safety practices as a way of leveling the playing field, integral to maintaining the health and profitability of their fleets, and key to winning business from quality customers.

Subchapter M will be a phased-in over a period of years. It's not as much time as one might think. If you haven't started yet, you are already running late, say industry observers, and it's important to get it right. The obvious reason is your operation will be dead in the water if you don't. Likewise, and just as importantly, those outfits in the consultancy, software and survey games who hope to be a part of the solution are also under the gun to fine tune the systems and procedures that will position their current and future clients for success, once the new rules do kick in.

With that in mind, a new industry consortium – consisting of software provider MarineCFO, international classification society RINA and the well-known towboat industry consultants at Tug & Barge Solutions – has launched what they say will be the turnkey, definitive answer for towboat operators looking to gear up and come into compliance. In a nutshell, MarineCFO, with well developed software platforms and tools, will work closely with Tug & Barge Solutions, who provide assistance to owners especially in the process of SMS (generation of procedures, training on how to use them etc.) preparation, implementation and internal auditing of the SMS system. RINA assists the owners through a long lasting and proven expertise in the application and interpretation of the ISM Regulations – developed in various sectors of the shipping and under several different domestic and international regulatory frameworks, all with the aim of tailoring an innovative certification process dedicated to this very peculiar market niche.

MARINECFO, RINA AND TBS – AS ONE

According to RINA's Business Development Manager, Ches King, RINA provides certification documents to the companies and vessels. RINA also offers training for set of skills required for effective management of the ship owners' operation especially related to handling safety, quality, risk assessment and improvements. RINA also provides external records and database accessible to the flag authorities so they obtain assurance on the ship owners and/or operators' operations and compliance.

King continues, "Subchapter M is a way to improve safety to personnel, property, environment and the process (managing of towing vessels) towards economical improvements the SMS is destined to accomplish … Here, the partnership of MarineCFO, Tug & Barge Solutions and RINA becomes a good alternative for vessel owners. The key benefit is that the owners have continuous support and benefits from SMS without increasing number of their own personnel and operational cost beyond the optimal."

King goes on to say that all three partners have a different role to fulfill for the towing vessel operator and because of this; the cost can be lowered and at the same time a professionally developed and maintained system provides all the benefits - this is a great way to help the marine industry.

Dean Shoultz, Chief Technology Officer/CSA, MarineCFO, describes Sub-Chapter M as the largest commercial marine compliance initiative ever undertaken by the U.S. Coast Guard in relation to the number of impacted vessels and vessel operators. Within that effort, there are common minimum standards owners must meet. Shoultz insists,

"Foremost is adoption by the owner of a credible, verifiable Safety Management System which is approved by USCG. Second, monitoring of an operator's approved Safety Management System (SMS) practices by USCG and an approved USCG Recognized Organization is necessary. Finally, implementation of a recordkeeping system which documents the operator's compliance with their Safety Management System."

MarineCFO offers the MarineCFO Enterprise System in both Premise Based Solution (PBS) and Software as a Services (SaaS). Uniquely, the MarineCFO Enterprise System is a business workflow systemic approach which includes the following features: Marine Operations (Shipboard Logs, Position Reports, ECDIS Interface, & Asset Management), HSE (Navigation Assessments, Risk Assessments, TMSA, SIRE, & Vessel General Permit, Fleet Library (tech manuals, safety notices, policies procedures, forms), & Ballast Water Reporting), Planned Maintenance (Engineers' Log, Critical System Assessments, Spares & Inventory Control, Run Times), Personnel (MMD, TWIC, Drug Screen, Training & Dispatch), and Accounting (A/P, A/R, Work Orders, & General Ledger).

The MarineCFO Enterprise system replicates & synchronizes ship to shore data through a proven transmission application that interfaces with nearly any existing onboard communication array. MarineCFO Enterprise deploys an onboard Smart Client application to retain shipboard data for up to three years.

Dean Shoultz sums up the new partnership nicely, saying, "RINA, TBS, and MarineCFO are sensitive to the economic conditions facing smaller and mid-sized tug companies but we are also cognizant of how trust is built in this industry. What we offer to the market are companies with celebrated histories, known products & services, and the commitment to relationship building and finding the most affordable path."

For his part, Vice President & Founder of Tug and Barge Solutions, Pat Folan, explains the proposed process simply, "Our goal is to simplify the process for towing vessel operators and our partnership allows us to offer the Towing Safety Management System (Tug & Barge Solutions), the electronic record-keeping piece (MarineCFO) and the certification of the Towing Safety Management System (RINA Services S.p.A.). The partnership also offers the surveying piece by RINA surveyors."

Tug & Barge Solutions provides all facets of the Towing Safety Man-

"We have come across a few companies on the East and Gulf Coasts that have no intention of complying with Sub M and those operators are planning on retiring when the USCG tells them to, but for those who are planning on staying in the business, they see opportunity with Sub M and are embracing it. Our partnership with RINA and MarineCFO can help streamline the process and costs for those operators and help keep them in business."

– Pat Folan, Vice President & Founder of Tug and Barge Solutions

agement System (TSMS). Working with companies to develop a customized TSMS that meets the operation's needs, input is taken from management and crews to ensure that all operations are documented. Folan adds, "As the TSMS is implemented, we train each crew member on each vessel and all shoreside personnel. We provide internal audits to help the company grow and track corrective and preventive actions."

TBS hardly comes to table without qualifications. Two years ago, TBS incorporated all of the items that the AWO RCP was lacking to be a recognized TSMS into its TSMS. Folan explains further, "We had developed a TSMS to meet AWO RCP, SUB M as written in the NPRM and the ISM Code and we feel that we have a product that can help our AWO RCP partners in the towing industry. We become the safety department for smaller operators and allow the owners to focus on their core competencies," adding, "Our most important 'value add' is our understanding of the industry. Indeed, Folan owned a towing company that operated in the northeast, Erie Canal and onto the Great Lakes, and his TBS colleague (Steve Wilson) operate a towing and tank barge company (Ivy Marine) that specializes in oil transportation on the Gulf Coast.

A CROWDED FIELD

Looking ahead toward the final rule, the new TBS/MarineCFO/RINA partnership is by no means alone in the subM services race. Separately, **Helm Operations** partners with sister com-

The MarineCFO, RINA, TBS Collaborative Approach

TBS	In depth consultative, survey, & audit services for ISM, RCP, and TSMS operators. Tug owners meet with TBS to assess Sub-Chapter M needs. They jointly determine which type of Safety Management System is most suitable and affordable to the operator. Upon agreement the owner and TBS undertake the process of SMS Development.
MarineCFO	… onboard and shoreside Sub-Chapter M recordkeeping technology standard, configured to ISM, TSMS, RCP and the Prescriptive solution. More than a Towing Vessel Record, MarineCFO is a proven Fleet Management System which touches upon all aspects of business including operations, planned maintenance, accounting & billing, safety & compliance, personnel, document management, and asset control.
RINA	… under the authority of USCG, RINA will evaluate and approve the operator's Safety Management System election and audits/surveys each vessel. Class RINA provides ongoing compliance support to towing operators to ensure maximum utilization of floating assets.

Ches King, RINA's Business Development Manager

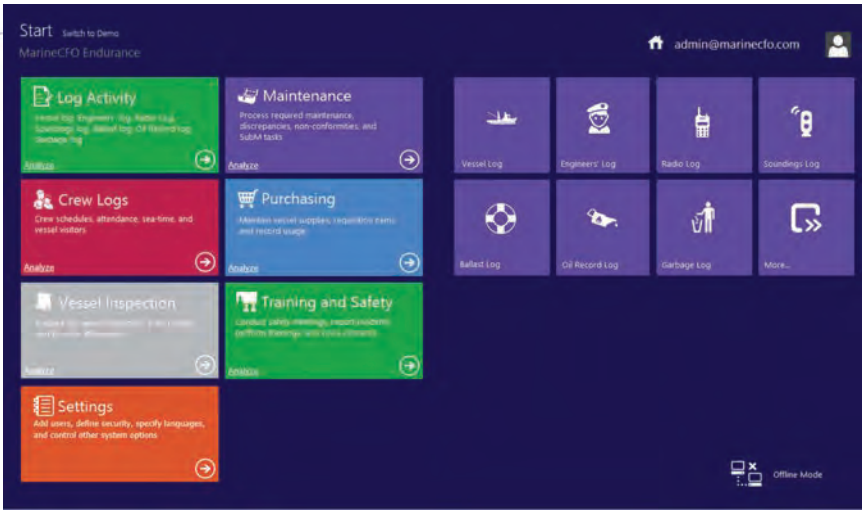
pany Safety Management Systems, LLC (SMSLLC) to help clients build their SMS. Both are wholly owned **ClassNK** companies. According to Helm, ClassNK America, along with other USCG- approved Classification Societies, will be the only auditors with pre-approved subM audit authority.

And then, of course, there's **ABS**. With the help of several other ABS units, ABS and its independent sister company ABS Group, which provides non-class services, offer a virtual one-stop shop when it comes to safety management and compliance. ABS Nautical Systems (NS) group is developing a version of its FMS to support Subchapter M in the form of a slimmed down, simplified dashboard, which will support all subM regulations, streamline data entry and generate compliance reports, using subscription-based pricing.

Not to be outdone, **Baker Lyman's** software offering in the subM space is the CORSAIR Towing Vessel Record application, CORSAIR TVR v.2., which is said to be an easy-to-use, scalable TVR that meets or exceeds safety, assessment, inspection, training, recordkeeping and other documentation requirements. It provides users of Baker Lyman's navigation, scheduling, safety, training, compliance and planned maintenance assessments with pre-formatted vessel, barge, and crew log entries, VGP permit tracking, and enhanced daily logging functions. If it can be tracked – CORSAIR tracks it – all without a sheet of paper.

"We thought if we took [TBS'] domain-level knowledge and coupled that with our technical expertise, we'd be able to add a lot of value. By digitizing their domain expertise, they took us to another level."

– Dean Shoultz, MarineCFO CTO



GETTING IN – AND STAYING IN THE GAME

Roughly 5,000 uninspected vessels will be affected by Subchapter M, some of which are members of the AWO, which mandates that all members within a year of joining, be certified on its own U.S. Coast Guard-approved SMS, the Responsible Carrier Program (RCP). While they wait for SubM to wend its way through the regulatory process, operators can get SMS-certified by going either with RCP and IMO's ISM program. And, they've got plenty of choices to get to the Promised Land, when they do.

To that end, TBS' Pat Folan brings his operational experience to the table when he says, "We have come across a few companies on the East and Gulf Coasts that have no intention of complying with Sub M and those operators are planning on retiring when the USCG tells them to, but for those who are planning on staying in the business, they see opportunity with Sub M and are embracing it. Our partnership with RINA and MarineCFO can help streamline the process and costs for those operators and help keep them in business."

Separately, citing 2013 numbers submitted to the U.S. Coast Guard by the American Bureau of Shipping (ABS) and the Towing Safety Advisory Committee (TSAC), it was estimated that the cost to install an SMS could reach $2.9 million for an average company. Smaller operators can feel overwhelmed, but it doesn't have to be that way. Subchapter M, RCP, ISM and other SMS plans are all designed to be scalable to fit the needs of every operation, be it a one-boat outfit or a fleet of 100. It can be as simple or sophisticated as it needs to be. Having a safety compliance officer is not required, although larger operations will probably need them. Fortunately, SubM assistance abounds.

The newly announced TBS, RINA, and MarineCFO partnership offers tug owners the opportunity to create a comprehensive USCG compliant SMS through a single port of entry at an affordable rate of investment. Elsewhere, a herd of equally passionate service providers hope to do the exact same thing.

MarineCFO's Dean Shoultz puts a positive spin on what many might view as a daunting process: "Sub-Chapter M is a financial opportunity for marine operators to invest in their company's long term welfare as well as the long term stability of the domestic waterborne industry. The Gas & Oil industry implemented SIRE, BIRE, & TMSA as protocols to protect the commercial interests of various parties. Tug operators seeking contracts with the Gas & Oil Majors need to comply with these protocols or risk no contract opportunities. Sub-Chapter M ought to be considered as codification of these commercial protocols, but with an emphasis placed upon professional & corporate accountability instead of contract performance."

Shoultz clearly gets it. But, he and his RINA and TBS partners are not alone. The SubM service provider field is deep, it brings a varied approach to a common problem and it promises economical, real world compliance to operators who might not have the internal resources and wherewithal to otherwise get the job done. All of that said; marine operators in the so-called "subM" space should celebrate any new entry into this space. And, apparently, they've got a good one.


Credit: Kongsberg

Offshore Operations and DP Training on a Collision Course for Safety

Fledgling OSVDPA seeks to train, assess and certify DPOs by year's end.

By Joseph Keefe

When a new organization, the Offshore Service Vessel Dynamic Positioning Authority, Inc. (OSVDPA), held its first board meeting in March of 2014, it began charting the course toward a new dynamic positioning operator (DPO) certificate specially designed for the offshore service vessel industry. Incorporated as a non-profit, the OSVDPA today is seeking to improve the safety of the maritime industry by improving the quality and quantity of certified DPOs. The Authority's training and certification system – now almost completed – will emulate some aspects of existing DPO certification methods, but will also introduce key enhancements.

OSVDPA Chairman of the Board, Carl Annessa, of Hornbeck Offshore Services declared last year, "The OSVDPA looks forward to working with industry to establish a rigorous and practical DPO certification system, one open to all of those who use DP offshore." As the end of 2015 fast approaches, the fledgling organization is set to deliver on those promises. Importantly, and while the outline of the OSVDPA's certification system has been crafted and driven the Authority's Board of Directors, the particulars of this system are being written by the Authority's Technical Advisory Council (TAC), a team of industry professionals involved with DP usage and the training and certification of DPOs on a daily basis.

The Authority's purpose was never intended to reinvent the wheel or for that matter, start a certification system; instead, they had hoped to work with existing schemes in an effort to create a DPO certification system that understands and appreciates offshore service vessel industry usage of DP, and one that addresses the needs of DPO's on board offshore supply vessels.

The emerging scheme was developed in anything but a vacuum. Members today come from all aspects of industry, including operators, and, the very people who create the DP technology and simulators used in every day practice. For example, Kongsberg Maritime is also an OSVDPA charter member, and for very good reason. Kongsberg notably has delivered and installed Control and Automation systems on board more than 18,000 vessels worldwide and has delivered more than 4,000 DP systems.

Nils Even Urkedal, Vice President of Operations at Kongsberg Maritime last month weighed in on the new scheme. For its part, says Urkedel, Kongsberg has added value to OSVDPA by providing the technical background and experience to foster the assessments and competencies portion, partnering with other suppliers and the OSV Operators who provide the operational background and experience.

Competence, Sea Time & Training

Without a doubt, the new OSVDPA certification system is unique in its change of emphasis from measuring sea time to assessing competence. OSVDPA Executive Director Aaron Smith told *MarineNews* in October, "We com-

An OSV engaged in offshore DP operations

Credit: OSVDPA

pletely agree that sea time and gaining experience is very important – critical – to making a good DPO. After all, an assessment is just one moment in time. But we also understand that you need to prove that you've done something during your assessment that you haven't just been riding around, playing on your phone." Smith adds, "We require you to gain experience. That means a requirement to spend sea time – at the DP console for 270 hours, in addition to, or concurrently, with that 90 days of sea time. Once you get done with that, you then have to prove you've gained some knowledge. You prove that by passing an assessment."

Separately, Captain Joshua Summers, a Master, Senior DPO and DP Advisor from Seacor Marine also spoke to ***MarineNews*** in October from his vessel stationed offshore West Africa. Summers, whose current DP competency certificate was issued by the Nautical Institute, is widely recognized as one of the most experienced DP operators on the water. According to Summers himself, he's been DP qualified for 15 years, but on paper, certified for just three.

Summers addresses the scheme from the mariner's perspective, adding, "The OSVDPA system is competency based and addresses the shortcomings that currently exist on board DP vessels. For example, the OSVDPA pushes hard on DPOs' understanding and using the industry guidance and decision support tools created by IMCA and MTS. The OSVDPA goes much deeper than the NI scheme or the DNV scheme in this area and will improve DPO's ability to conduct safe DP operations. Currently, I'm afraid to say, most DPO's have never read IMCA or MTS guidance in regards to safe DP operations. The OSVDPA scheme will make DPOs know this guidance and create the next generation of qualified, and competent DPOs."

First and foremost, OSVDPA wants the certification scheme to be based upon what is practical and relevant. Because of that, the assessment can be done on board or in a simulator. On board assessments will require the presence of a qualified on-board assessor. But, for mariners where no assessor is on board, or if they don't have the time on the vessel, the OSVDPA scheme allows the assessment to be done in a simulator.

Smith explains, "We have within our assessment item bank more than 200 items, and we provide instructions for how the assessor can mimic or simulate a fault. You have to remember that a lot of these DP systems which are coming out today have a simulator function built into it."

Importantly, what the OSVDPA organizers have discovered is that, sometimes, simulator activities aren't necessarily relevant to what the operator is doing on a day-to-day basis. And, that's because the simulator might not have the features or functions that the on board equipment is fitted for.

For example, and before OSVDPA was founded, DPO's serving on an OSV were being assessed or trained in a simulator that was set up to mirror a drill ship. Smith adds, "It's not relevant. So we don't see how that's a good assessment. Again, we want assessments to be practical and relevant to what these guys are doing."

The sticking point for some of this involves the availability of Qualified On Board Assessors (QOBA). And, OSVDPA is set to train them. Getting there won't be easy.

The long-term goal of the OSVDPA and its membership is to ensure that all companies have at least one assessor that's capable of bringing all DP operators along to the organization's exacting standards. Smith says OSVDPA is here to add another certification option. That said; he also insists that the OSVDPA standard, for OSV operators, is going to

"What we are going to do is to seek approval from the chartering community. We will, I am very certain, be recognized on the same level as the Nautical Institute by (IMCA). We will also seek to have an independent review done by an organization affiliated with a classification society. We will also seek to have an accreditation of our program against the ISO standard for certification."

– OSVDPA Executive Director Aaron Smith

be more relevant. "It will also be more difficult," he says, adding quickly, "and quite frankly, it's going to produce a better product. We view our system as being the 'Goldilocks' between all other methods. The DNV-GL model is based exclusively on simulators. It is a weeklong course, followed by a tiny amount of sea time, and then if you pass the assessment, you are good to go. Then, you have the Nautical Institute System which is completely different: it's all based upon sea time. There are two courses, they have a very minor assessment at each of the courses, but it's all based on sea time."

Using the 'Goldilocks' analogy, Smith explains that the OSVDPA system is also 'just right' because it is based upon gaining experience and then proving that the operator has gained knowledge and ability during that experience-gathering period.

Industry Driven: One Size Does Not Fit All

Hornbeck COO and Executive vice President Carl Annessa last month brought the need for the OSVDPA scheme into easy to understand language, explaining, "The Nautical Institute (NI) scheme had been the industry standard certification mechanism for DPO's for many years - but as the need for DPO's dramatically increased, it seemed that a 'one-size fits all solution' was producing DPO's in name only, and that as owners we were finding that certificate holders with experience in one sector of the industry were not always as competent in other sectors. Fundamentally, we saw the need to develop a service vessel specific scheme that included a competency assessment as part of its process."

Seacor's Captain Summers has own spin on the process, direct from the vessel's wheelhouse. "The OSVDPA's effort to set a common standard for DPO competency is second-to-none. But even more important is the OSVDPA's understanding that standardization doesn't mean one-size-fits all. The OSVDPA's training and assessment system ensures DPOs are trained to a common standard but requires DPOs to demonstrate they've met that standard through an assessment customized to their boat and what their boat does. This system will, without a doubt, set a new path for existing DPO's and aspiring DPOs. It will change the way companies and DPOs alike think about safe DP operations."

Summers continued, "DP training – and in particular, certification – was an overnight freight train in the DP world. There was a time, not long ago, when most weren't overly concerned

Credit: Kongsberg

with 'certification,' only training. Training consisted of an induction (basic) course, 30 days familiarization, then the advanced (simulator) course. This, of course, didn't make you a competent DPO nor were there any checks and balances. You were simply trained in a classroom and placed aboard a DP vessel that likely had a different DP system."

"Hornbeck Offshore will certainly encourage our mariners to use the OSVDPA program - both to migrate existing DPO's to the OSVDPA system, and to commence their journey toward certification for those entering the industry as new inductees."

– Carl Annessa, Chief Operating Officer & Executive Vice President at Hornbeck Offshore Services

And, then, says Kongsberg's Urkedel, there is the wide range of differences in driving one type of DP system or another, on a different class of vessel. "The differences in DP between an OSV and a Rig involve the complexity of the systems and the nature of the operations. An OSV generally has less power and subsystems. A Rig is generally on station for the entire operations, while the OSV is generally changing location in support of the Rig or other offshore operations. A Drilling rig is normally set up to hold position and only a few heading changes are usually made during the drilling operation while a OSV, depending on its purpose can either hold station, follow a predefined track, follow a ROV or another target such as a drilling unit or FPSO or a pipelayer and the DP Operator is actively using and interacting with the DP system." Clearly, then, one size does not fit all.

A look at today's DP competency certification game shows that there is, in fact, much going on. The Nautical Institute, for example, has issued more than 20,000 certificates. The other big scheme, the Modeling and Simulation Center (SMSC), is a DNV GL approved scheme in Trondheim, Norway. The latter system is relatively new and Smith says that they have issued about 100 certificates, and with caveats, he gives them high grades. "It's very simulator-intensive. You've got to be a really good DPO to pass that scheme. Is that a viable option for all of the industry? No, I don't think so. So it'll be a question of what they see as their market."

Looking Ahead:

In practice, there are today only three flag states in the entire world that have made the requirement to have DPO training; the Marshall Islands and the Norwegian Maritime Authority among them. MarineNews asked Aaron Smith who might eventually recognize their nascent system as being relevant. Smith first answered by saying that the effort is entirely industry driven. He continued, saying, "What we are going to do is to seek approval from the chartering community. We will, I am very certain, be recognized on the same level as the Nautical Institute by (IMCA). We will also seek to have an independent review done by an organization affiliated with a classification society. We will also seek to have an accreditation of our program against the ISO standard for certification."

The OSVDPA today counts among its membership at least 25 companies, consisting of the full gamut ranging from vessel operators, training providers and DP manufacturers. But the larger market also beckons. Smith estimates that as much as twenty percent of all certificates are going

to come up for renewal annually. That amounts to 4,000 mariners needing DP assessments in a given year – plus all of the mariners who have never been certified in the past.

Smith concedes that if one company or another has joined OSVDPA, it's likely that they will transition most or all of their mariners to the OSVDPA assessment scheme. Carl Annessa agrees, adding, "Hornbeck Offshore will certainly encourage our mariners to use the OSVDPA program - both to migrate existing DPO's to the OSVDPA system, and to commence their journey toward certification for those entering the industry as new inductees."

At the same time, Smith insists, "We certainly hope that everyone who wants to use us, will, but we're not in the business of creating mandates here. We're in the business of creating options." Beyond this, he says, "We don't limit, and we will not limit, anyone from joining or participating in our scheme, and we don't believe that our certificates will limit anyone to any one industry. There's no business model for such a limited certificate program. You have to give guys the ability to advance and progress in their careers as they see fit. So we are definitely not trying to limit anyone from joining our scheme, or once they have completed our scheme, going to another area of the industry."

Captain Joshua Summers agrees. "OSVDPA has checks and balances based on an individual's skill – not just time spent aboard DP vessels. If you look at the numbers, I think it's safe to say that most DPO and aspiring DPO's are working on OSVs and FSVs. The OSVDPA, its board, and Technical Advisory Council have hundreds of years combined experience in this industry and have used this experience to create a system that ensures these DPOs are well-trained in this industry, and have the tools to transition to other industries in the future."

But, it is Annessa who perhaps explains the merits of the new scheme best, declaring, "It is really an organization for DPO members – not so much for operators. We have been organized, and thus far led, by a number of owners that have had the vision for making DPO certification more widely available to the men and women that serve our fleets, and to do so via a program that allows their competency, not their underlying licenses or the vessels upon which they serve, to qualify them for certification. We are seeking the support of all operators who utilize DPO's to support their employees who aspire to join the OSVDPA, and for those who individuals whom already hold DPO certification, to plan on taking the OSVDPA assessment as soon as it is available."

As a minimum, the world of offshore Dynamic Positioning – particularly for OSV's – is about to get a lot safer. No stakeholder, regardless of where they currently sit, would argue that's a bad thing. And, you can argue about how to go about accomplishing that lofty goal, but the way forward will almost certainly include the OSVDPA as one of the standard bearers.

What Makes a Certified QOBA?

150 Days in the past 5 years	Recent Service at Console	DPO Certified (OSVDPA or Equivalent)
450 hours in the past five years	Passage of OSVDPA (Phase 4) Exam	Flag State on board assessment

Cranes and Dredging: a Clean Fit

Environmental Solutions Firm turns to Sennebogen for new dock application.

When Waste Management, a North American provider of integrated environmental solutions, got involved with an ongoing environmental dredging and remediation project initiated by Boeing in Seattle's Lower Duwamish Waterway, it was the first step in a new direction for the company. Eventually, they discovered that the right crane for the job at hand was just the ticket.

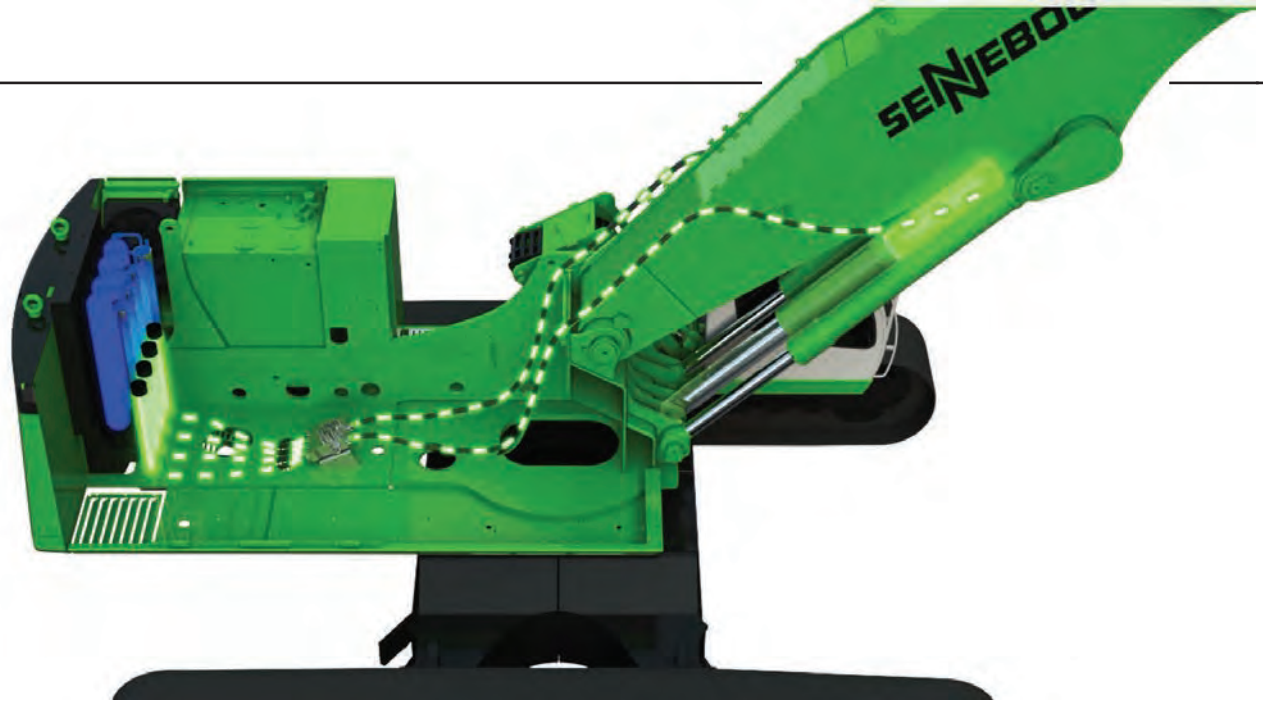
"The Duwamish River dock site is a new type of facility for Waste Management," says Nick Harbert, District Manager for Waste Management. "The long-term plan for the 16-acre site is to unload contaminated sediment from the river off barges, de-water it, and then load the solid material onto waiting railcars for transport to landfills."

Waste Management officials knew they would need the right kind of equipment for the new dock application to meet the high productivity levels they had set for themselves. A purpose-built Sennebogen material handler was deemed the solution, but company officials debated the merits of SENNEBOGEN 880 and 870 models and were torn between either a diesel or an electric-powered machine.

Due Diligence: SENNEBOGEN 875 R-HD Wins the Day

Sennebogen LLC has long been a fixture on the inland waterfront, providing specialized equipment solutions for recycling and scrap metal yards, demolition, barge and port operations, and log-handling, from coast to coast. A growing network of distributors supports Sennebogen sales and service across the Americas, ensuring a high standard of professional machine support and parts availability.

Nevertheless, it pays to do your homework. To that end, "Sennebogen arranged a trip to Sennebogen headquarters in Germany for Waste Management officials to see various models of the purpose-built green machines in operation doing similar type applications," says Harbert. "They liked what they saw and came back to North America convinced that Sennebogen was the right machine for the Duwamish site." Harbert also says seeing a SENNEBOGEN 875 R-HD at a 2014 trade show with John Meese, Senior Director of Heavy Equipment, and having the opportunity to have that conversation with him and Erich Sennebogen,



tilted the decision in favor of the 875 material handler and the order was placed.

"The SENNEBOGEN 875 R-HD's extended reach (K21, 68'7") and its ability to handle a 6-yd. clamshell bucket were the key determining factors," says Harbert. "We decided to go with the electrically-powered machine because we would be working on a river and wanted to minimize the potential risk of spills from the machine. We also wanted to hold ourselves to a higher environmental standard. Minimizing the noise level of operating the machine was a factor, too."

Environmental Hurdles, Changing Requirements: no problem for the 875 R-HD

Unfortunately, environmental hurdles and requirements slowed development of the Duwamish site. "After Waste Management became the long-term tenants of the site in April 2014, we were unable to begin construction of railroad tracks as there still had to be more site assessment work done by the state environmental regulatory agency," says Harbert. "As a result, the Boeing material could not come to the Duwamish site and it had to be processed at a third-party facility on the river." The good news is that Waste Management's SENNEBOGEN 875 R-HD has been put to productive use in the meantime.

"While we wait for the necessary approvals, what is happening at our Duwamish site now is the off-loading of clean back-fill material from trucks onto barges to be taken to fill in the holes left by the dredging," says Harbert. "Our SENNEBOGEN 875 R-HD has been phenomenally efficient and productive in this operation, cutting barge-loading times significantly. Whereas, it had previously taken operators 4 to 5 hours to load a barge with back-fill material, our SENNEBOGEN was able to do the same operation in two hours. During an evaluation meeting, company officials made it very clear that they would not have been able to meet their contractual obligations without the aid of our facility and our SENNEBOGEN material handler."

Harbert says his operators are very happy with the simplicity, performance and the responsiveness of the SENNEBOGEN 875 R-HD machine, joking that other contractors experienced "green envy" when they witnessed Waste Management's material handler in operation at the Duwamish site. "They wanted to get one of these machines," he says. "It has definitely been a great asset to our operation."

Duwamish River Dredging & Remediation: a long-term project

The dredging and remediation of the Duwamish River will continue for many more years. The river is an EPA-managed Superfund site with plans to move over 1 million cubic yards of contaminated dredge sediment over the next several years. Harbert says Waste Management's Duwamish site will be fully operational within a year or so and will be very much a part of that ongoing remediation project. He says the company is also bidding on similar dredge operations elsewhere. No doubt Sennebogen will a part of their plans, when they do. That's because Stanley, North Carolina-based Sennebogen offers a complete range of purpose-built machines to suit virtually any material handling application.

www.sennebogen-na.com

M/V Rick Calhoun

Marquette's Gulf Island Marine Fabricators-built towboat christened in festive New Orleans riverfront style.

The first of three 10,000 HP towboats being built for Marquette Transportation has been launched and christened in a festive ceremony held on the banks of Mississippi River in New Orleans. Marquette welcomed the powerful, 180-foot vessel into its fleet in September. A robust addition to Marquette's already impressive 125+ vessel strong fleet, the *Rick Calhoun* is said to be the largest towboat built in the last 40 years for river service, as well as the highest horsepower twin-screw ever built. Delivery of the second and third vessels - *Loree Eckstein* and *Chad Pregracke* – is scheduled for February and August 2016.

Marquette is counting on increased efficiencies from the Rick Calhoun, leveraging the combination of high horsepower and the steering efficiency provided by the Becker flap rudder system. Already a staple in other maritime sectors, the system is now just beginning to impact the domestic brown water market. For its part, Marquette plans to install additional Becker Becker High Lift Flap Rudder systems on future newbuild and retrofit tonnage.

At the christening, Marquette Senior Vice President Josh Esper praised both the quality of work and the timely delivery of the vessel by Gulf Island Marine Fabricators. Indeed, the contract was signed in July 2014 and Marquette took delivery in August 2015, with actual construction completed in less than one calendar year. Already at work, the vessel is rated to push as many as 40 loads, primarily grain and other bulk cargoes on the Mississippi River.

The new vessel was named for Rick Calhoun, Waterways Council (WCI) board member and President of Cargill's Cargo Carriers, the barge and marine operations arm of Cargill's North American operations. Cargill is a valued customer of Marquette Transportation. For his part, Calhoun remains one of inland marine industry's most vocal advocates, through his work at WCI and myriad other industry stakeholder forums. Addressing the gathered throng, Calhoun told listeners that he was humbled by the namesake honor, which notably was the first time that Marquette had ever reached outside its family to name one of its vessels.

Marquette Transportation Company is one of the nation's largest providers of marine transportation services, having combined three leading family-owned businesses under one banner. Unlike most integrated barge lines, it offers a strategic mix of vessels along many waterways including but not limited to the Mississippi River, Ohio River, Illinois River, Tennessee River, Cumberland River, Tennessee-Tombigbee Waterway, Arkansas River, the Intracoastal Waterway and offshore destinations, as well. Marquette today boasts one of the nation's newest, safest fleets, encompassing more than 120 marine vessels, ranging from 1,250 to 10,000 horsepower.

The M/V "Rick Calhoun" at a glance …

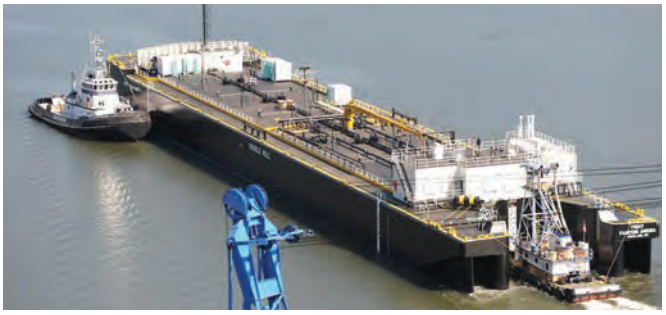
LOA: 180 feet	Engines: (2) EMD 20-710 G7C Tier 3	Lube Oil: 1,600 gallons
Beam: 48 feet	Gears: Lufkin RHS3200 HG (4.75:1)	Ballast: 93,000 gallons
Depth: 11-1/2 feet	MSD unit: Scienco/FAST model MX-3	Radar: Koden MDC 2520
Horsepower: 10,000	Winches: (4) Nabrico DF 156-60-11	Winches: (4) Patterson BC-40
Shaft Seals: Wärtsilä	Fire Suppression: Herbert S. Hiller	Fuel Capacity: 136,000 gallons
Rudders: Becker	Capstan: Schoellhorn-Albrecht	Generators: (2) John Deere

MetalCraft's 9m RIB

MetalCraft Marine has introduced an all new 9M Rib. Based on a previous hull design, it is crossing into new territory in Naval Architecture, geared for offshore Vessel board and seizure and insertion/extraction missions from over the horizon. The boat can be configured for both military and municipal security configurations. According to Metal Craft, two production lines are rolling for full rate production throughout the next two years, based on current delivery orders. Metal Craft could not divulge the current back order information. At the moment, two orders specify Mercury Verado350's and one order specified Yamaha 350's. The boat has many guns with four mounts, fore and aft and two foldable swivel mounts centered. It is one of the first Naval patrol boats to utilize the British Sea Cross navigation platform that offers a revolutionary targeting program. The boat has ShoxsHD suspension stackable seats for 2 crew and 12boarding team. Many other innovative features are included.

Volvo Penta Engines for New Harley Marine Barges

Recently, Pacific Power Group's marine division supplied fuel-efficient and environmentally-friendly marine auxiliary engines for two petroleum barges currently under construction at Vigor Industrial in Portland, OR for Harley Marine. The articulated tug barges are designed by Elliott Bay Design and will be 422 feet long with 83,000 barrel capacity, which will make them among the largest vessels in the Harley fleet. These new double-hull vessels will have two 400 horsepower Volvo Penta D13 MH marine engines packaged into cargo pump power units engineered and sold by Pacific Power Group. The D13 MH is a powerful EPA Tier 3 engine typically used for medium and heavy-duty marine commercial applications that offers reduced fuel consumption. In addition, three radiator-cooled D13 MG diesel generator sets and custom



engineered paralleling switchgear will be installed to provide up to 1188 kWe of power that will drive a nitrogen inert gas system. The Volvo Penta engines incorporate water cooled exhaust manifolds with radiator cooling to help maintain low surface temperatures and reduce fire hazard in compliance with ABS and SOLAS safety standards.

Gladding-Hearn Pilot Boat for Tampa Bay Pilots

The Tampa Bay pilot association has taken delivery of its second Chesapeake Class launch and the first in a new generation of Gladding-Hearn Shipbuilding's mid-size pilot boats. Since the Chesapeake Class pilot boat was introduced by the shipyard in 2003, 15 have been delivered to pilot associations throughout the United States. The latest improvements incorporate the performance benefits of Volvo Penta's IPS 2 pod system. With a deep-V hull designed by C. Raymond Hunt & Associates, the all-aluminum pilot boat is powered by twin Volvo Penta D11, six cylinder, EPA Tier 3 diesel engines, each producing 503 Bhp at 2250 rpm. Each engine is connected to a Volvo Penta IPS propulsion pod, which is fitted with dual forward-facing, counter-rotating propellers and integrated exhaust system, and Volvo Penta's integrated EPS electronic steering and control system. The financial incentive for the Tampa Bay pilots to optimize fuel economy, vessel handling and comfort led the shipyard to install a Humphree Interceptor automatic trim- optimization system. The vessel's top speed is 28 knots. Key design changes to the Chesapeake Class MKII include positioning the wheelhouse aft of amidships to improve comfort and provide for a larger foredeck.

JMS Designed Research Vessel for VIMS

JMS Naval Architects of Mystic, CT will complete next month the Contract Design Package of a 93 foot research vessel for Virginia Institute of Marine Science of Gloucester Point, VA to replace their current research vessel. A solicitation will be issued to shipyards by the end of the year. The primary mission of the Institute's fleet is to provide inshore and offshore work platforms for the support of fisheries related oceanographic research projects. The new vessel will be capable of conducting fisheries assessments of greater capacity in deeper waters and with a larger science complement than the current vessel. The new vessel will greatly expand VIMS' capability to perform general oceanographic research in Chesapeake Bay and mid-Atlantic near coastal waters. Propulsion is provided by a pair of Cummins QSK-19A 660 BHP tier III diesel engines coupled to a two–in/one-out marine gear driving a controllable pitch propeller shrouded within a nozzle. This unique arrangement will provide the capability to operate the vessel efficiently on a single propulsion engine when on station or during slow speed transits. This system will reduce overall engine hours and thus reduce the cost of operation and improve fuel efficiency minimizing its environmental footprint.

The VIMS RV at a Glance …

Length Overall: 93.0 feet	Navigational Draft: 9.5 feet	Science Payload: 20 long tons
Breadth: 28.0 feet	Load Displacement: 285 long tons	Accommodations: 12
Hull Depth: 12.7 feet	Lightship Displacement: 210 long tons	Builder: JMS Naval Architects

Willard Marine Unveils Sea Force 777 RHIB

Willard Marine has unveiled their new SEA FORCE 777. This military-grade, fiberglass, rigid hull inflatable boat (RHIB) is 7.77-meters long, 2.74-meters wide, and designed with a deep-V hull for maximum stability in the roughest sea conditions. The Steyr SE306J38 diesel engine with ZF-63 marine gear powering a Hamilton Jet drive HJ-274 provides 300 horsepower for a 9-member crew and can achieve 32 knots. Nine Ullman Dynamics shock-mitigating seats are installed for crew comfort and safety. A 40-ounce polyurethane WING inflatable collar is UV-coated and includes a 7-panel bow cover and rub-strakes

to reduce risk of boat damage upon boarding and stability during weight shifts. International military representatives can now rely upon the new 777 the same way the U.S. Navy has relied upon similar shipboard RHIBs from Willard Marine over the last 25 years.

Elastec Trash Boats for Clean Waterways

Elastec manufactures trash and debris collection boats to assist local governments in meeting Clean Water Act standards, reducing unsightly floating pollutants and help protect aquatic ecosystems. The boats skim floating litter from harbors and waterways. Designed to be maneuverable in hard to reach areas, the boat has an inverted bow to usher floating refuse into its 98 cubic feet trash basket. The aluminum vessel can also be used for a wide variety of marine maintenance duties from its spacious 8x11' work platform. Marine litter and debris control is an emerging environmental issue as a result of the regulation of water pollution under the Clean Water Act. The Metropolitan Water Reclamation District of Greater Chicago (MWRD), for example, recently purchased two 23-foot ELASTEC Trash Boats to skim debris from the Chicago River.

Bristol Harbor-designed Double Skin 509A Delivered

Bristol Harbor Group, Inc. (BHGI) announced that Vane Brothers Company has taken delivery of a BHGI designed 55,000 BBL double hull oil barge. BHGI was contracted by Conrad Industries to develop the design of the 361 x 62 x 24.5 foot 55,000 BBL double skin tank barge. The construction of the barge took place at Conrad Shipyard in Amelia, LA. The barge is ABS certified and Coast Guard approved for oceans-fully manned trade. The barge's primary purpose is to transport asphalt and other heavy oils. It is equipped with a complete loading and discharging system in 10 tank compartments and includes a cargo thermal heating system with over 8 miles of heating coil pipe.

Blount Boats Delivers USCG Subchapter "D" Tanker

In September, Blount Boats delivered the 79 foot bunkering tanker Chandra B to American Petroleum and Transport. The design by Farrell & Norton Architects was built to USCG Subchapter D specifications and will operate in New York Harbor and New Jersey. The vessel is equipped with (2) Tier III Cummins Model QSL9, six-cylinder diesel engines rated at 330hp at 1800 rpm with ZF Model W325 marine hydraulic gears that will have 4.91:1 reduction ratio. The vessel is also equipped with a 50hp Wesmar hydraulic bow thruster. The cargo tankage is designed to hold 56,450 gallons.

The Chandra B at a Glance …

Length, Overall: 79.0 feet	Crew: 2 - 4	Cargo: 56,000 Diesel
Beam: 23.0 feet	Speed: 8.5 knots Max	Hatches & Manholes: NABRICO
Depth, Molded: 14.0 feet	Fuel Oil: 3,000 Gallons	Coatings: International
Mean Draft: 8.0 feet	Fresh Water: 200 Gallons	Engine Controls: Mathers (ZF Marine)

Metal Shark Delivers 75' Multipurpose Port Security Fireboat

Louisiana-based shipbuilder Metal Shark has delivered a 75' multipurpose port security vessel custom built for the Port of South Louisiana. Based on Metal Shark's Endurance-class catamaran design, this 75' welded aluminum vessel incorporates sophisticated technology to support fire rescue missions, Command and Control (C2) operations, and around-the-clock port security efforts at the largest tonnage port in the western hemisphere. Twin Cat C-18 diesel engines in a conventional straight-shaft inboard configuration propel the 75 Endurance's stable and efficient catamaran hull to cruising speeds of 25 knots while yielding a nominal operating range of over 500 miles. For firefighting, two dedicated drive engines channel up to 6,000 total gallons per minute through an oversized water main where electronic valves divert water to three radio frequency-controlled monitors. Four additional 2.5" hydrant connections and a 400-gallon foam reservoir provide maximum flexibility across the full spectrum of firefighting needs.


Radzik


Freeman


Fielding


Sturm


Carnevale

NMRA Names New Officers and Board Members


From left: Flack, Smith, Gueterman, Trombley & LaMarr

The National Marine Representatives Association (NMRA) has elected officers and board members to head the organization in 2015 to 2016. Two new officers and two new board members joined its leadership group. **Rob Gueterman** of GSW & Associates was elected president, and **Keith LaMarr** of Macaroni Marketing is vice-president. **Neal Trombley** of Gulf Atlantic Marketing is the new treasurer and **Clayton Smith** of Waters & David will serve as secretary. **Brandon Flack** of Atlantic Marketing Company is the current past president. Gueterman is the third in his family to serve as NMRA president.

Radzik Named LCA Fellow

Edward C. Radzik of Marshall Dennehey Warner Coleman & Goggin, has been named a fellow of the Litigation Counsel of America (LCA). LCA is a trial lawyer honorary society. Fellows are selected based upon excellence in litigation and superior ethical reputation. Radzik is an active member of the Maritime Law Association of the United States and is a marine engineer and graduate of the Massachusetts Maritime Academy. He received his J.D. from the University of New Hampshire School of Law.

SCHOTTEL Strengthens North American Team

SCHOTTEL has strengthened its North American organization with the addition of **Svante Fielding** and **Randall Freeman**, who will both work out of Houma, LA. Fielding, the new Vice President Operations, has 20 years of experience within the marine and propulsion industry. Randall Freeman, Operations Manager, is part of service operations team. He has over 15 years of experience in the marine propulsion industry, serving in various technical and management positions.

Bon to Retire, Sturm Named Samson President & CEO

Samson has announced that after 41 years with the company, **Tony Bon** will step down as CEO on January 1, 2016. **Andrea Sturm** has been appointed as successor and joins the Samson team this month. Sturm comes to Samson with a strong background in international business management, product management, new product development, and marketing and sales. She holds degrees in Business Administration, International Management, and Marketing.

SCA Announces Retirement of Joe Carnevale

The Shipbuilders Council of America (SCA) announced the retirement of Senior Defense Advisor RDML **Joe Carnevale** (ret). The retired U.S. Navy Admiral has been with the trade association for more than ten years. Prior to joining the Shipbuilders in 2005, Mr. Carnevale served as the Director of Fleet Maintenance for the Commander, Fleet Forces Command where he addressed the complete range of Fleet maintenance issues. He is the 2013 recipient of the Marine Machinery Association's Jack Flannigan Award and the 2013 recipient of the American Society of Naval Engineers' Frank G. Law Award.

Dometic Promotes Trigg to EVP

Ned Trigg has been promoted to Executive Vice President of Dometic's Marine division. Trigg will be the business leader for the Marine OEM and Aftermarket divisions for the Americas region. This includes sales, application engineering, customer service, manufacturing operations and new product development strategies. Trigg's previous role was Senior Vice President of Global System Sales, Marine Division.

Towing Vessel Center of Expertise Works with Industry

Recently, **Rear Adm. Paul Thomas**, assistant commandant for preven-


Trigg


Thomas


Candito


Frohnhoefer

tion policy, visited the Towing Vessel Center of Expertise, or TVNCOE. During this visit, Thomas held two meetings with maritime stakeholders in the Paducah region. More than 60 representatives of the towing vessel industry and maritime groups attended these meetings, providing Thomas with insights about towing vessel operations, the prevention of marine casualties and waterways management issues. Thomas also toured the Army Corp of Engineer's Olmsted Lock & Dam project to see its progress.

Steven Candito launches Foresea

After over 20 years leading NRC, **Steven Candito** has launched ForeSea consulting group. Foresea's team approach provides a wealth of knowledge, experience, and leadership to assist vessel and barge owners/operators, facilities, exploration & production companies, insurers and environmental service firms with their day to day business, regulatory compliance and emergency response needs. Foresea also works with Private Equity firms to identify acquisition targets, perform sale and purchase due diligence and assist with post-closing integration.

Sea Tow Chief Frohnhoefer Named to AFRAS BoD

Joseph Frohnhoefer III, Sea Tow chief operating officer, has been named to the Board of Directors of the Association for Rescue At Sea, Inc. (AFRAS). AFRAS' mission is to support volun-


Abeyta


Gilfus


Stutzman


Leatt


Benzie

teer maritime rescue services worldwide, and honor extraordinary maritime rescues. Frohnhoefer III is the second Frohnhoefer to be named to the AFRAS board. His father, the late Capt. Joe Frohnhoefer, also served as a member of the AFRAS Board. Frohnhoefer attended SUNY Maritime College, earning a B.E. in Naval Architecture with an Unlimited Third Mate license. His professional experience includes sailing deep sea on Ro-Ro's, tankers and container vessels.

Abeyta Joins SAFE Boats International

Joseph Abeyta, President of Allwater Marine Group, LLC, has joined SAFE Boats International to increase foreign military sales and business development. Joe is a recently retired 24-year veteran of the U. S. Coast Guard (USCG). During his career with the USCG, Joe was an accomplished operator, held multiple commands, served as a vessel platform manager and as a regional security assistance officer.

New Additions to the Bristol Harbor Group Team

Bristol Harbor Group, Inc. (BHGI) last month announced two new additions to its naval architecture and marine engineering practice. **Zachary Gilfus**, naval architect, and **Marissa Stutzman**, mechanical engineer, have joined the team. Gilfus graduated from Webb Institute with a Bachelor's of Science in Naval Architecture and Marine Engineering, where he earned the ABS Stevenson Taylor Award for best thesis. Stutzman joined BHGI as a mechanical engineer in June of 2015. She graduated from Rensselaer Polytechnic Institute with a Bachelor's of Science in Biomedical Engineering and Mechanical Engineering.

IMCA Names New CEO & Technical Director

Allen Leatt has been named Chief Executive at the International Marine Contractors Association (IMCA). He joins from Subsea 7 where he has been Senior VP for Engineering and Project Management. Allen has over 30 years' international experience in the marine contracting business with leading companies including Subsea 7, Acergy and Technip. He is a Fellow of the Royal Academy of Engineering, a Fellow of the Institution of Civil Engineers and a chartered engineer in the UK. **Richard Benzie** has been appointed Technical Director to replace Jane Bugler who retired at the end of September after 18 years in the role. Richard joined the industry in 1981 working first as a Mud-logging Equipment Field Service Engineer. He then moved into ROV operations and has deep experience in a variety offshore and subsea roles.

Port Canaveral's CEO Tenure Ends in January

Port Canaveral Commissioners and **John E. Walsh** have agreed that his last day as Canaveral's chief executive officer would be January 21, 2016. Walsh will continue to serve in the role until that time. Walsh has served as CEO since March 2013. He began his tenure with the Port Authority in February 2011 serving as Deputy Executive Director of Infrastructure, Construction, and Real Estate.

Transas Names Chief Executive Officer

Frank Coles is the new Chief Executive Officer and member of the Board of Directors for Transas Marine. Coles is a maritime business professional with extensive leadership experience in maritime operations and technology. Recently he has been advising a number of blue chip private equity companies on maritime opportunities. Before that he was the President of Inmarsat Maritime, leading the unit through a return to growth and integration of several acquisitions. After 12 years at sea he spent 5 years as a maritime lawyer, and then as Operations Director for Pacific Basin Bulk Shipping in Hong Kong.

Harley Marine Services Adds to Management Team

Harley Marine Services announced that **Don Martin** has been named Vice President and General Counsel and **Steve Carlson** has joined the company as Vice President of Engineering. Prior to joining Harley Marine, Martin was VP and General


Walsh


Coles


Carlson


Martin


Bull

Counsel for Delta Western and Hawaii Petroleum. Martin attended the University of Washington, California Maritime Academy, and holds a Juris Doctorate degree from the University of the Puget Sound. Carlson joins Harley Marine Services from Alaska Marine Lines (AML) where he served as General Manager of Marine Engineering. Prior to joining AML, Steve held senior leadership positions with Kvichak Marine and the U.S. Coast Guard. Carlson has advanced degrees in Mechanical Engineering, Marine Engineering and Naval Architecture from the University of Michigan, and a bachelor's degree from the U.S. Coast Guard Academy.

Foss Maritime Welcomes New VP, General Counsel & Chief Ethics Officer

Lam Q. Nguyen-Bull has joined Foss Maritime as Vice President, General Counsel and Chief Ethics Officer. Nguyen-Bull will lead Foss's Legal and Risk Management Group, where in addition to providing counsel on legal issues and business strategies and practices, she will head up the company's ethics and compliance programs. Nguyen-Bull came to Foss from parent company Saltchuk, where she served as Associate General Counsel and Compliance Officer. Nguyen-Bull graduated from Harvard University magna cum laude and from Yale Law School.

SCHOTTEL EcoPeller – a Highly Efficient Thruster

SCHOTTEL's highly efficient thruster is optimized for open sea and coastal operating conditions, combining the latest hydrodynamic insights from CFD simulations and model tests. The SRE enables owners to achieve lower fuel consumption and low emissions. The SRE employs a vertical electric motor integrated into the Rudderpropeller, eliminating any necessary shaft lines. On board, the EcoPeller offers unbeatable comfort with low vibration and low noise.

www.schottel.com

Trelleborg High Deflection Engine Mounts

Trelleborg's new marine engine mounts – the high deflection (HD) Cushyfloat and the mini HD Cushyfloat – provide improved vibration isolation and passenger comfort on vessels. The solutions alleviate excessive vibrations caused by an increase in engine power on lightweight hulls, using a unique rubber compound, which increases its ability to provide improved vibration isolation, especially when travelling at low speeds due to harbor restrictions.

www.trelleborg.com

Caterpillar's EPA Tier 4, IMO Tier III Engines

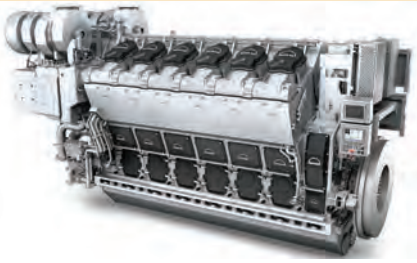
Caterpillar Marine's Cat C280 medium-speed diesel engines for U.S. EPA Tier 4 and International Maritime Organization Tier III service are available in eight, 12 and 16-cylinder models spanning a power range from 2300-5060 kW as main engines – conventional and diesel electric – and also as auxiliary generator sets. The engines reduce emissions, consume less fuel and have lower operating costs.

www.catpropulsion.com

Volvo Penta Doubles Service Interval for Marine Diesels

Volvo Penta has announced a new extended service interval for its commercial marine diesel engines. Under the new program, owners can double the maximum oil change interval to 1,000 hours for Volvo Penta D9, D11, D13 and D16 engines by following the 1,000-hour protocol, including a Volvo Penta oil analysis, using genuine Volvo Penta oil filters and engine oil and using fuel with maximum 500 ppm sulfur content.

www.volvo.com



MAN 32/44CR Engine for Fishing Vessels

Propulsion packages comprising MAN 12V32/44CR main engines offer a complete turnkey that optimize bollard pull of more than 120 tons and provide high efficiency when comparing the bollard pull with the size/power of the engine. The optimized propeller allows for smaller engines and a two-speed RENK gearbox offers economic and environmental benefits, particularly for multi-mission fishing vessels with reduced transit speed.

www.mandieselturbo.com

VFD Controls for Barge Ballast Pumps

Optidrive E3 variable frequency drives (VFDs) from Invertek Drives have automated the control of pumps used to fill and empty ballast tanks on board commercial barges – saving manpower, time, energy and money. As well as a faster and more reliable filling and emptying process, operators using VFD controlled ballast pumps also benefit from less fuel and energy consumption, which also saves money.

www.invertekdrives.com

Rolls-Royce to Power Sunseeker Yachts

Rolls-Royce and yacht manufacturer Sunseeker International have agreed on the supply of MTU Series 2000 and Series 4000 engines for a range of yachts including three new models. The contract will see MTU engines power the new Sunseeker 95, 116 and 131 Yachts. The MTU brand is part of Rolls-Royce Power Systems within the Land & Sea division of Rolls-Royce.

www.rolls-royce.com

Yanmar Common-Rail Diesel Engines

Yanmar Marine International's new range of common-rail fuel injected marine diesel engines rated for workboat applications, the 6LY440 and 6LY400, have a distinguished pedigree derived from the mechanically controlled 6LY2A series. The electronically managed engine has all the benefits of plug-and-play operation, using Yanmar's Vessel Control System (VCS), giving options of wireless controls and fingertip low-speed maneuvering with the advanced joystick.

www.yanmarmarine.com

The Alternative to Conventional Pipe Joining

Normaconnect pipe couplings are an economical alternative to conventional pipe joining techniques for both metal as well as plastic. Ready to fit Norma coupling are pushed over pipe ends, tightened with a torque wrench, creating a safe, reliable, heavy duty, permanent pipe connection. Normaconnect eliminates the need for welders and hot work. Normaconnect systems reduce installation weight by up to 60%.

www.normagroup.com / www.wosupply.com

ThrowRaft's innovative TD2401

ThrowRaft's TD2401 inflatable throwable PFD is lightweight, and can be stored for easy access. Manually activated to inflate, it auto-inflates when submerged. The ThrowRaft TD2401 is U.S. Coast Guard approved and has created a new standard for inflatable throwable devices in the personal flotation device (PFD) industry. It's a new Type IV throwable device, alongside the square cushion, ring buoy, and horseshoe buoy.

www.throwraft.com

AIO showing an ADMIRALTY preliminary notice of a pipeline

Kongsberg ECDIS Includes ADMIRALTY Overlay

The UK Hydrographic Office has worked with Kongsberg Maritime to ensure the latest K-Bridge ECDIS and K-Nav ECDIS software includes AIO, making additional chart information available to the mariner when using its ECDIS models. AIO is a free service included with the ADMIRALTY Vector Chart Service (AVCS). The overlay contains worldwide ADMIRALTY Temporary and Preliminary Notices to Mariners (T&P NMs).

www.ADMIRALTY.co.uk

Super-Light Sailor VSAT Antenna Systems

Cobham SATCOM's 60cm Ka-band VSAT antenna systems, the new SAILOR 60 GX and SAILOR 600 VSAT Ka, share advanced design and lightweight carbon fiber composites/aluminum construction. Weighing just 37kg, SAILOR 600 VSAT Ka and THOR 7, and the combination of SAILOR 60 GX, SAILOR FleetBroadband and Inmarsat Fleet Xpress, meet the high demands fishing vessels, short sea shipping and workboats with space restrictions.

www.cobham.com/satcom

PYI's KiwiGrip Nonskid Deck Coating Systems

KiwiGrip is a durable, nonskid coating, applied quickly using a roller. The texture can be adjusted from a rolled "pleasure boat" texture to an industrial aggressive "work boat" texture all from the same can. As a homogeneous material, KiwiGrip doesn't suffer from the problems encountered with other products. Loaded with a UV stabilizer, KiwiGrip is available in four standard colors.

www.pyiinc.com

Xylem-Jabsco's Remote Control Dual Beam Searchlight

A marine searchlight must be capable of performing a range of tasks from locating buoys to illuminating a narrow channel. The Jabsco 233SL offers superior beam spread and intensity for both shorter and longer range. The Jabsco 233SL is mounted by a quick release bayonet base with a security locking system, which is perfect for OEM installations and removal for storage.

www.jabsco.com

Epsitron Line Now Carries GL Approval

Epistron Classic power supplies and electronic circuit breakers now carry GL marine and on-and-offshore approval. Offering an ultra-slim power supply package solution featuring economically-priced 1-, 2- and 3-phase modules, these power supplies feature an identical housing profile, and wide input and voltage range. The 787 Series circuit breakers offer excellent features and reliable protection against overload and short circuits.

www.wago.us

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I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).

PS Form **3526-R**, September 2007 (Page 2 of 3)

2015 Editorial Calendar

Marine News

ISSUE	EDITORIAL	BONUS DISTRIBUTION
JANUARY **Ad Close:** Dec 12	**Passenger Vessels & Ferries** Market: Training & Education Technical: Arctic / Cold Weather Operations Product: Winches, Ropes & Cranes	**PVA/Maritrends** Jan. 31 - Feb 3, Long Beach, CA REGIONAL FOCUS: West Coast
FEBRUARY **Ad Close:** Jan 15	**Dredging & Marine Construction** Market: U.S. Coast Guard Technical: Naval Architecture Product: Fire & Safety Equipment	**ASNE Day** March 4 - 5, Crystal City, VA
MARCH **Ad Close:** Feb 14	**Fleet Optimization** Market: Management Software Technical: SATCOM for Workboats Product: Water Treatment & Technology	**CMA Shipping 2015** March 23 - 25, Stamford, CT REGIONAL FOCUS: US East Coast
APRIL **Ad Close:** March 14	**Shipyard Report: Construction & Repair** Market: Push Boats & Barges Technical: Marine Coatings/Corrosion Control Product: Interior Outfitting / Design / HVAC	**Sea-Air-Space** April 13 - 15, National Harbor, MD
MAY **Ad Close:** April 14	**Offshore Annual** Market: OSV and Offshore Vessel Trends Technical: Safety & Prevention Product: Oil Pollution: Prevention & Response	**OTC Houston** May 4 - 7, Houston, TX
JUNE **Ad Close:** May 14	**Combat & Patrol Craft Annual** Technical: Shortsea Shipping / Bulk Transport Technical: Lubricants, Fuels & Additives Product: Inland Boat Builders	**Inland Marine Expo** June 15 - 17, St. Louis, MO **MACC** June, Virgina Beach, VA **Seawork** June 16- - 18, Southampton, UK REGIONAL FOCUS: Inland Rivers
JULY **Ad Close:** June 15	**Propulsion Technology** Market: ATBs – Expanding Roles & Types Technical: Deck Machinery Product: Safety & Prevention	
AUGUST **Ad Close:** July 15	**MN 100 Market Leaders** Market: Workboat Boatbuilding & Repair Technical: Marine Operators Product: E-Solutions & Technology	***Marine News*** **25th Anniversary Edition**
SEPTEMBER **Ad Close:** Aug 15	**Inland Waterways** Market: Navigation, E-Solutions & Software Technical: Training/Regulatory Compliance Product: Cordage, Wire Ropes & Rigging	**ShippingInsight** Stamford, CT REGIONAL FOCUS: Great Lakes
OCTOBER **Ad Close:** Sept 15	**Salvage & Spill Response** Market: Maritime Security Workboats Technical: Emissions Control/Management Product: Deck Machinery/Cargo Equipment	**SNAME** Nov. 4 - 6, Providence, RI **CleanGulf** Nov. 10 - 12, New Orleans, LA
NOVEMBER **Ad Close:** Oct 16	**Workboat Annual** Market: Outfitting the Modern Workboat Technical: Pumps, Pipes & Valves Product: Marine Propulsion	**International Workboat Show** Dec. 2 - 4, New Orleans, LA REGIONAL FOCUS: Gulf Coast
DECEMBER **Ad Close:** Nov 15	**Innovative Products & Boats of 2015** Market: Fire, Patrol & Escort Craft Technical: Onboard / Wireless Comms Product: CAD/CAM Software	

** The publisher reserves the right to alter this calendar. All features are subject to change in light of industry trends and developments.*

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PROFESSIONALS

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93	Ahead Sanitation	www.aheadtank.com	(337) 330-4407
85	All American Marine	www.allamericanmarine.com	(360) 647-7602
77	Aluminum & Stainless, Inc.	www.aluminumandstainless.com	(337) 837-4381
82	Amerijet International, Inc.	www.amerijet.com	(800) 927-6059
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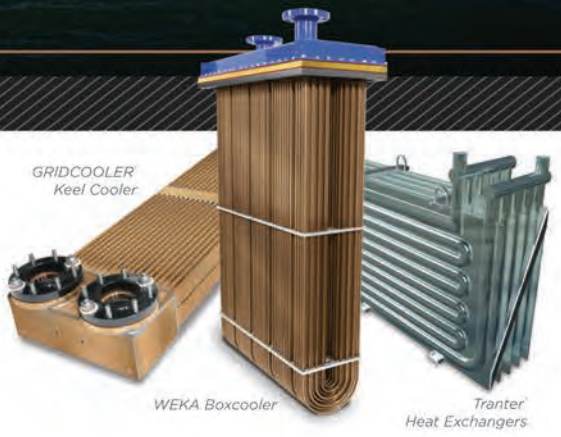

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