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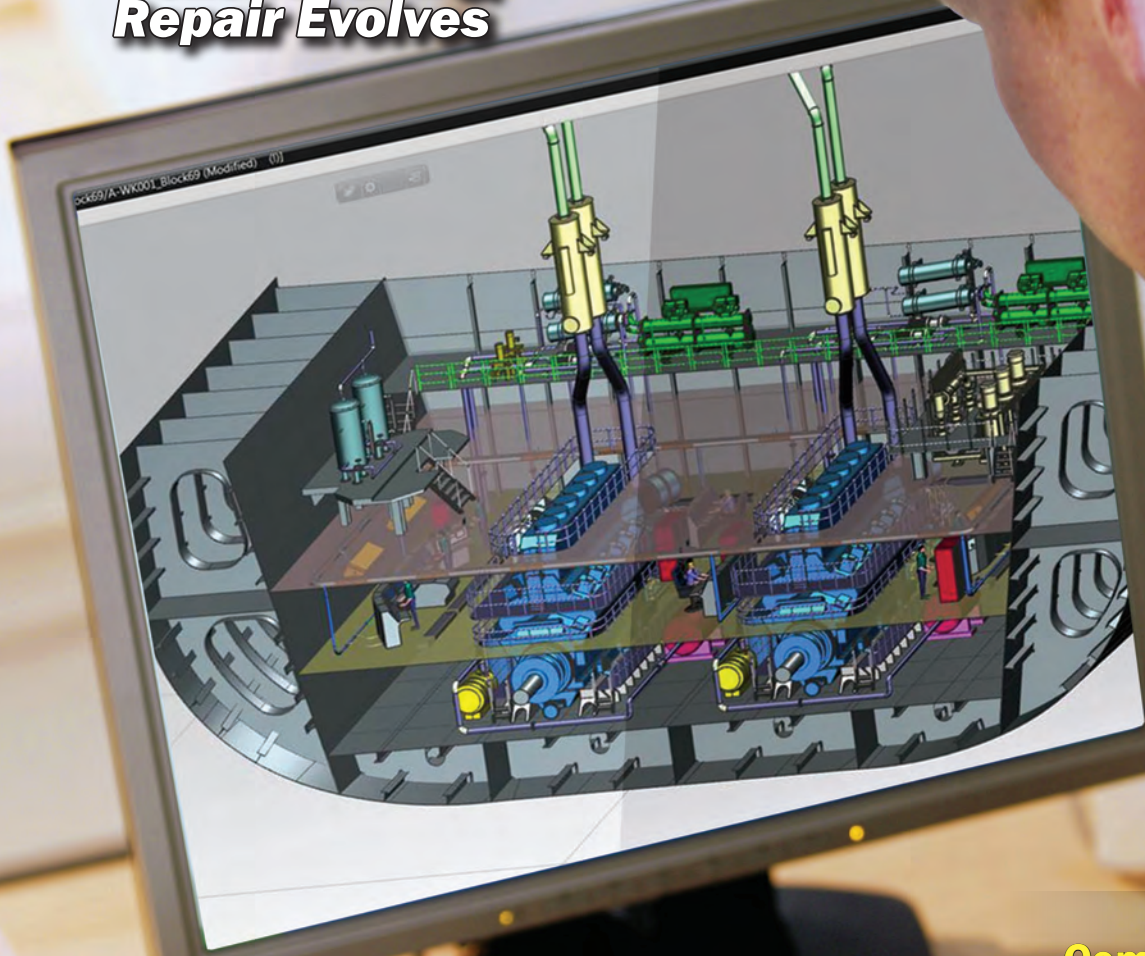

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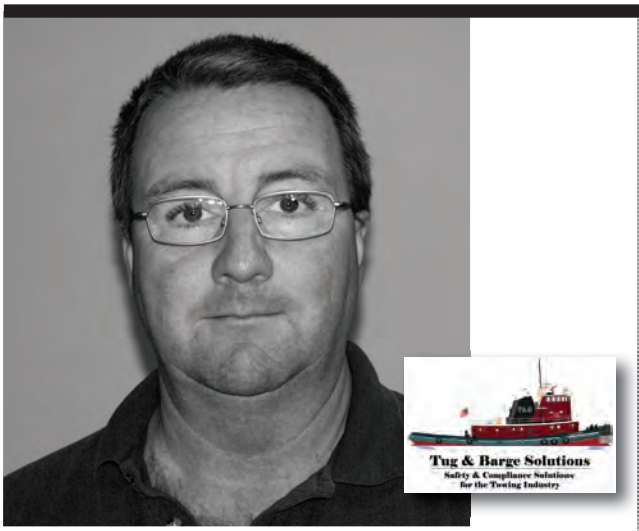

Credit: Miller Electric Mfg. Co.

ON THE COVER

A screen shot of an engine room arrangement as seen through the Siemens PLM software package. As shipyards ramp up their game to become more competitive, Siemens provides the tools. The story begins on page 34.

Image: courtesy Siemens


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

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

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

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

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

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

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

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

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

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

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

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

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

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

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The news that President Trump intends to push for a 350 ship U.S. Navy – up from the current fleet of about 275 warships – is nominally good news for the domestic waterfront. The devil, of course, is in the details and if past experience is any indication of future results, we'll end up somewhere in the middle in terms of fleet growth. The nation's blue water, Jones Act backlog has been better than usual in the past few years, but that boom will likely ease as the one-for-one hull replacement program ends. For so-called tier one yards, a resurgent Navy build program is good news. But, what about everyone else?

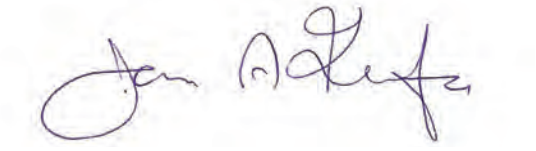
As loyal readers of *MarineNews* already know, as many as 39,500 of 40,000 U.S. flag hulls can be considered brown water, workboat and inland tonnage. That's rarely the target market of tier one yards, but it is nevertheless a critical part of the nation's boatbuilding capacity. Building submarines or aircraft carriers isn't going to do that sector much good. On the other hand, there are measures that U.S, yards of all shapes and sizes can do – right now – to improve their bottom lines.

Within this edition, for example, the U.S. Maritime Administration's Owen Doherty weighs in on the state of domestic shipbuilding, what Marad is doing to improve its lot and what yards can do themselves to further those goals. Doherty insists that U.S. builders must undergo what he characterizes as "a paradigm shift in how it does business." And then, he goes on explain to explain how and why. That advice begins on page 28.

Separately, global powerhouse Siemens is advocating the exact same thing. Therefore, a look at new technology that can help to streamline any boatbuilding operation is also useful. In this case, cutting edge software addresses virtually every aspect of the shipbuilding process; from infrastructure layout and material flow, to contracting, design and everything in between. Beyond this, their call to boatbuilders to be more of a part of every vessel that they produce – well after that boat departs the yard – is a fascinating primer for how shipyards and customers alike will interact to build and maintain vessels in the future.

From boatbuilding to infrastructure, 2017 is shaping up to be the year that politics, more than ever, is playing a bigger role on the waterfront. How that plays out is still to be determined. Outside the shipyard, the effort to facilitate more efficient waterborne commerce is also heating up. *MarineNews* contributor Tom Ewing's look at the push to provide safer and more convenient anchorage areas for commercial traffic on New York's Hudson River shows us that even seemingly logical plans can become contentious. That story begins on page 42.

The state of domestic shipyards and waterfront infrastructure are fast developing into key battlegrounds in an otherwise contentious year for all domestic sectors. Look for both to remain in the spotlight as the year progresses. As it does, *MarineNews* will be there as always, to provide guidance.



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U.S. Shipbuilding: how are we doing? It depends on who you ask …

The past five years for U.S. boatbuilders have been a bit of a roller coaster. Alternately feast or famine, some yards have nevertheless done remarkably well. Those yards that diversified their portfolio, balancing commercial and government contracts and/or via domestic and export production, fared the best. Some sectors have been red hot, while others peaked and fizzled, predictably because of current events, the price of oil and/or regulatory issues. And, the numbers vary (sometimes widely) depending on who is doing the counting. For example, over a five year span of comparative data (2010-2014), the USACE and a widely used, well respected industry web site, **shipbuildinghistory.com** differ in their tallies of an average annual vessel delivery volume (1,227 versus 1,082, respectively). Nevertheless, the numbers tell a story, no matter who is doing the counting.

Tank barge construction increased steadily in the last few years before finally fizzling out. Why? The OPA-90 double hull regulations finally came to roost, and operators finally had to do away with single skin units. Likewise, the miserable price of oil has drastically impacted the production of OSV tonnage, down last year to just 21 from the high water mark (52) of 2014. Many of those hulls head straight to layup upon delivery and no doubt some owners regret the day they signed the contract. Separately, the recapitalization of the domestic commercial fishing fleet is coming along nicely, with deliveries in that sector mirroring the seven year average. Likewise, shipyards are pumping out pushboats and tugs at a rate that exceeds the seven year running average. Why? Could these be subchapter M renewals? That's my bet.

Then, there's the red hot passenger vessel market, which is outstripping its seven year average by almost 20 percent. Unless you've been sleeping for the last 12 months, then you also know that the number of ferry contracts signed and in production for the next two years is staggering. Several major 'series-build' contracts are underway, with other set to kick off. You won't see those in the totals within this accounting.

Finally, the rebirth of the Jones Act deep draft rebuild and recapitalization program isn't doing too badly either. Deep draft deliveries of blue water hulls are being punched out at a rate of almost 2X the seven year average. Sure, that's a finite market that will cap out, but, self-propelled hull deliveries of all types are slightly ahead of that same running average.

With all that happiness, the boatbuilding industry still says it is feeling some pain. There is hope around the corner. According to **shipbuildinghistory.com**, U.S. yards delivered almost 1,200 hulls in 2016, a number close to the six year average of about 1,250. Inexplicably, the U.S. fleet continues to get older. For example, although almost 1,200 hulls entered service, the number of vessels older than five years actually increased and the fleet size only grew by 500 vessels. The number of hulls older than 25 years – now 13,011 (one-third of the existing fleet) at last count – continues to grow. This means that there are plenty of candidates for replacement in the coming years. Beyond this, fleet numbers have been static for the last 15 years, and operators have been replacing older hulls regularly in a one-for-one building scheme. Moreover, even if the tank barge building boom has cooled, yards can take solace in the knowledge that almost 1,000 of these units are more than 25 years old; that's 25 percent of existing tank barges.

There is more good news. The advent of the subchapter M towboat rules means refits for some vessels, and for many more, retirement and replacement. It is inconceivable that the 5,000 hulls now under this inspection regime were all in compliance after spending their entire lifespan in a non-compulsory scheme. For bigger vessels – OSV's, and offshore ATB's, etc. – the promise of the ballast water treatment (BWT) convention is finally here, the Coast Guard has approved multiple OEM entries and the race to comply (should be) on. That said; most U.S. operators will flee to Asia for a bargain basement installation, rather than use a U.S. yard. And, of course, the U.S. EPA Tier IV emissions situation is no longer just knocking at the door – it is here, and barging right in. Operators have decisions to make: will they repower, replace, use a so-called 'tier beater' arrangement of multiple, smaller engines, or take the leap to hybrid or LNG? Whatever the answer, shipyards are waiting for the opportunity.

Number of Domestic Vessels: 1990 – 2015 …

	1990	2000	2010	2011	2012	2013	2014	2015
All Vessels	39,445	41,354	40,512	40,521	40,530	39,9 99	40,082	40,555
Non-Self Propelled	31,209	33,152	31,412	31,498	31,550	31,081	31,043	31,570
Self Propelled	8,236	8,202	9,100	9,023	8,980	8,918	9,039	8,985

Source: *Marad*

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U.S. Flag Fleet (Dec.31 2015)		Age (years)					
Vessel Type	**Number**	**< = 5**	**6-10**	**11-15**	**16-20**	**21-25**	**>25**
Vessels (Total)	**40,555**	**7,033**	**5,977**	**4,455**	**6,653**	**3,276**	**13,011**
Self-Propelled	8,985	832	882	657	719	391	5,495
Dry Cargo	788	52	57	103	87	53	431
Tanker	62	11	19	9	6	3	14
Pushboat	3,170	386	285	169	172	75	2,082
Tugboat	2,422	166	249	134	165	65	1,641
Passenger	826	9	41	63	90	108	505
OSV	1,717	198	231	179	199	87	822
Barges (Total)	**31,555**	**6,198**	**5,094**	**3,798**	**5,932**	**2,885**	**7,507**
Dry Covered	10,665	1,748	1,452	1,714	2,995	1,028	1,727
Dry Open	8,354	789	1,475	920	1,878	1,182	2,095
Deck	7,337	2,209	1,188	597	550	337	2,333
Other Dry Cargo	194	17	16	14	23	13	109
Double hull Tank	3,998	1,083	733	461	437	311	973
Other Tank	1,007	352	230	92	49	14	270

Source: *U.S. Army Corps of Engineers*

U.S. Shipbuilding Deliveries (2010 – 2016)

YEAR / TYPE	2010	2011	2012	2013	2014	2015	2016	AVG
TOTALS	1,201	**1,459**	1,261	**1,147**	1,067	1,438	1,191	***1,252***
Deep Draft	16	11	11	**8**	12	18	**28**	***15***
OSV / Crew	38	21	28	44	**52**	43	**21**	***35***
Tugs/Towboats	110	**81**	119	105	114	**122**	110	***109***
Pass. Vessels (1)	23	30	**33**	23	**21**	25	32	***27***
CFV's (2)	20	8	15	**27**	18	**7**	16	***16***
Other (3)	19	23	**25**	14	10	**8**	9	***15***
Ocean Barges	**14**	6	2	6	**2**	7	11	***7***
Tank Barges	141	185	279	**327**	311	268	**100**	***230***
Deck Barges	**1,053**	861	749	593	**527**	940	864	***798***
New Contracts	75	89	84	114	77	(*)	(*)	***88***

Source: *www.shipbuildinghistory.com / (1) >50 feet (2) commercial fishing vessels (3) self-propelled*

Want more information?: www.shipbuildinghistory.com / www.navigationdatacenter.us/veslchar/pdf/wtlusvl1_14.pdf / www.marad.dot.gov/wp-content/uploads/pdf/MARAD_Econ_Study_Final_Report_2015.pdf

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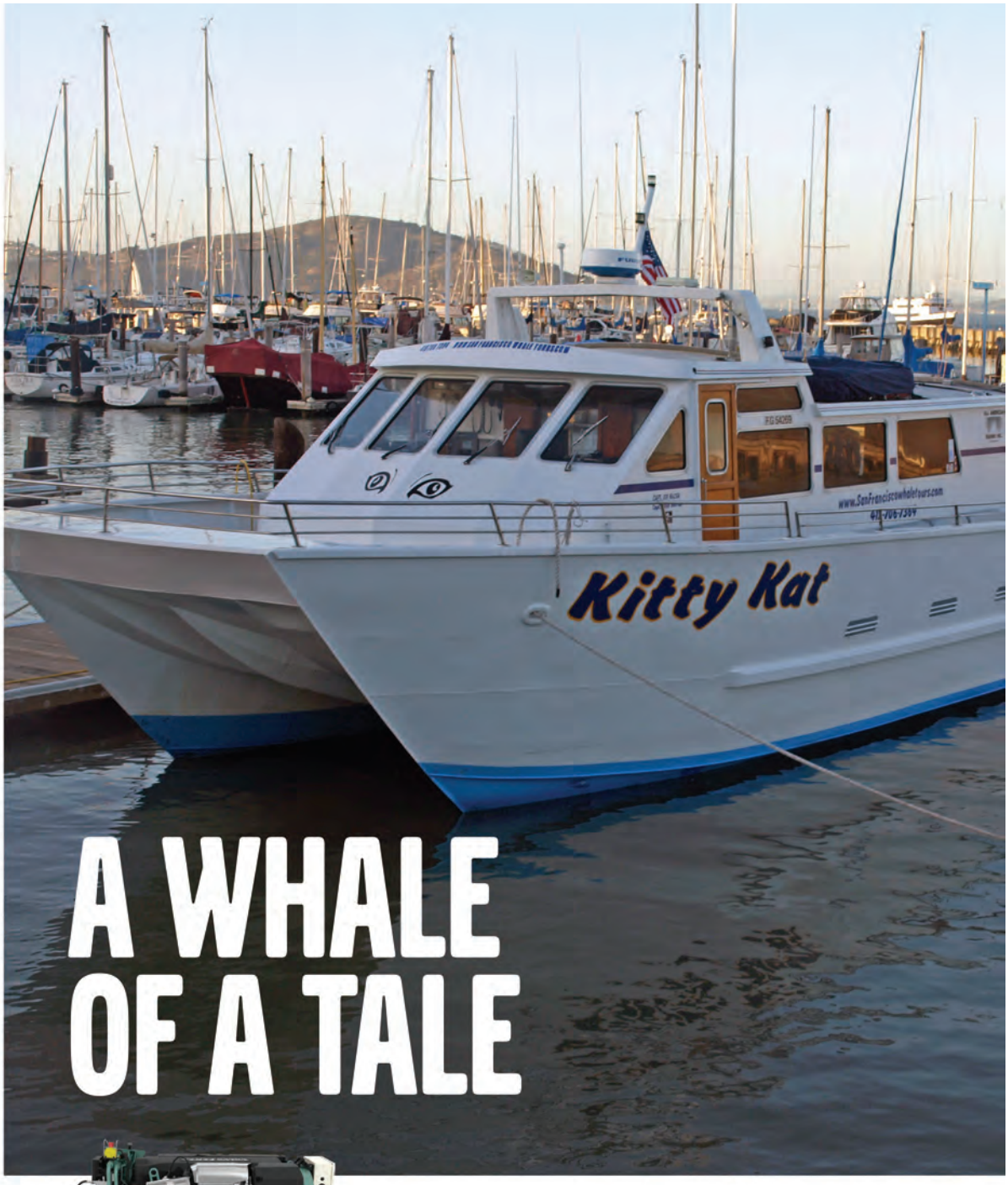

A WHALE OF A TALE

On the tourist packed San Francisco Fisherman's Wharf, an inoperable sightseeing boat isn't an option. When the time came for San Francisco Whale Tours to repower their flagship boat, *Kitty Kat*, they chose a pair of Volvo Penta D11-625's for reliability and passenger comfort.

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Pat Folan is a partner in Daphne, AL-based Tug & Barge Solutions, a safety and compliance company that focuses on Subchapter M compliance for towing companies. The company also performs surveys of towing vessels and barges, manages safety management systems for towing companies and trains people on towing vessels and in offices. A professional mariner, for 27 years, he also operated towing vessels from Maine to Corpus Christi, TX, including the Alabama Rivers, Lower Mississippi, Great Lakes and Erie Canal. A graduate of St. Bonaventure University, he began his career in towing in Boston in 1985 on a wooden single-screw tug, eventually owning a towing company that specialized in Erie Canal towing. He holds a Master of Towing Vessels for Near Coastal, Inland and Western Rivers. He was a member of the USCG's Towing Safety Advisory Committee (TSAC) and a subcommittee chair for the Steel Hull Repair and Operational Stability tasks. A certified ISO 9001:2008 Lead Auditor, ISO 19011:2011 Internal Auditor, ISM Internal Auditor, USCG-approved Designated Examiner and a SAMS Accredited Marine Surveyor, in his spare time, he maintains a website about tugs (www.PelicanPassage.com). In the world of workboats, Pat is well known, and is widely regarded as one of industry's most knowledgeable and experienced subject matter experts in his particular niche. This month, he shares that knowledge with MarineNews readers, weighing in on all things "tugboat."

What is your general impression of the state of the inland marine industry today?

Depressed, but slowly recovering. Marine construction and dredging appears to have fared better than dry and liquid cargoes. I see more barges moving now in the GIWW and my customers report the same. If we can get oil back on track, we will see the smaller operators come back online as the larger ones get busier.

What is the most important issue facing inland marine transportation providers today?

I see two issues that are related – regulation and labor. Sub M is necessary but the timing is bad. With boats laid up, the crews have found other work. As the economy improves, the cash-strapped operators have to bring vessels online in a tougher regulatory climate. As they bring people onboard, they will have to ensure compliance for both their vessels and crews. Where will the supply of Sub M-educated mariners come from? If you are a small company without a TSMS, how will you come up to speed?

What can inland operators do better today – in any phase of their operations?

They can pay attention. A lot is changing and knowledge of the regulatory and industry-led changes will be the key to a successful operation. This also includes greater involvement with their crews to help them with the changes.


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One of the big complaints that the inland (and workboat) industry has with today's regulatory environment is that often – but not always – regulations made for blue water are pushed down onto the so-called brown water industry, without regard for whether they actually fit. How can the Coast Guard better package these regulatory burdens to more closely match the issues they are trying to address?

I think that the problem has always been there. The USCG always takes a one-size-fits-all approach. And it is always reactionary. They don't have the manpower or the expertise to look at each part of the marine industry and see the differences. RADAR is a great example. A towboat hit a bridge and every one of us has to take a RADAR certification course designed for deep sea captains. The accident was in the mid-90s and we all still sweat the 5-year renewal because it doesn't apply to the towing industry. More industry input would help but we don't have the manpower either. So, we are stuck with 'knee-jerk' reaction regulations that don't really apply, but that we have to comply with.

When we talk about safety, we must also talk about push boat crewing and watch schedules. What's your opinion on the "6 on/6 off" & "4 on/8 off" debate?

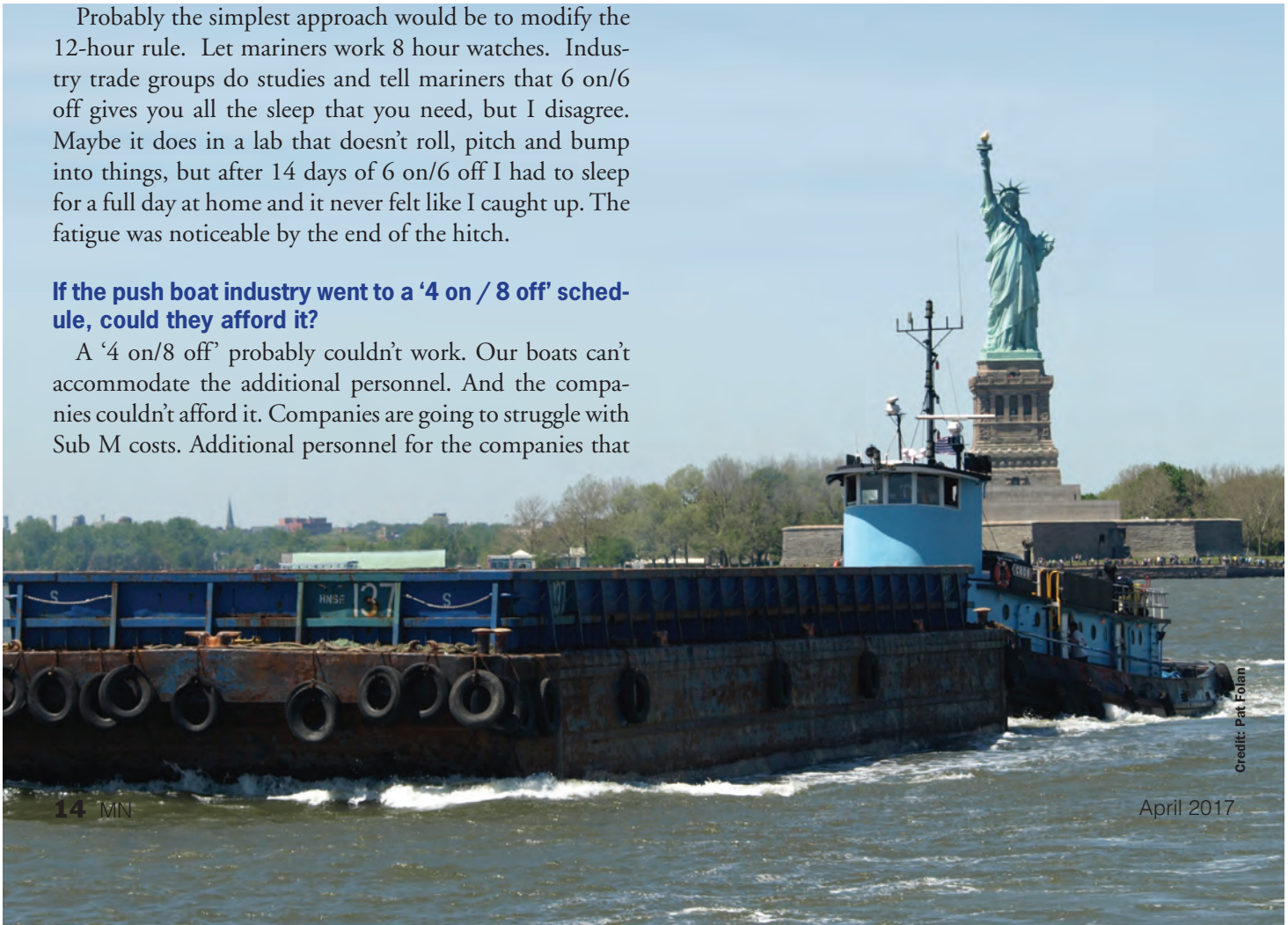
Probably the simplest approach would be to modify the 12-hour rule. Let mariners work 8 hour watches. Industry trade groups do studies and tell mariners that 6 on/6 off gives you all the sleep that you need, but I disagree. Maybe it does in a lab that doesn't roll, pitch and bump into things, but after 14 days of 6 on/6 off I had to sleep for a full day at home and it never felt like I caught up. The fatigue was noticeable by the end of the hitch.

If the push boat industry went to a '4 on / 8 off' schedule, could they afford it?

A '4 on/8 off' probably couldn't work. Our boats can't accommodate the additional personnel. And the companies couldn't afford it. Companies are going to struggle with Sub M costs. Additional personnel for the companies that are crewing their boats appropriately now would be hard. It would be impossible for the companies that don't even use a four-man crew for a 24-hour day. I also don't believe that we have enough people to go to that type of schedule.

Subchapter M towboat rules: will it make industry safer or is it just another paper exercise (think ISM)?

Eventually. We have a big behavioral change to make first. And it includes boat owners, operators, dispatchers and crews. The oil side is better prepared, but they need a break after phasing in Sub M. For years they have absorbed additional costs heaped on by regulators and oil companies with no corresponding rate increase. Something has to give there. Rates need to rise to offset the burden. The dry side, along with marine construction and dredging, will struggle. They haven't had to live with the requirements that the liquid side has and when you get to the small dredge companies, it's still the wild west. The larger dredge companies are beginning to require more of their towing subcontractors, but it is still going to be hard. The margins are slim and it will be hard to raise rates. So this will take time. But, give it two COI cycles and the companies that have made it and their personnel are going to look very different from what they are today.



Credit: Pat Folan

Partnerships Pivotal to Improvements on Inland Waterways Infrastructure

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About 58 percent of U.S. soybean exports depart from the Mississippi Gulf region, with 89 percent of that total arriving via barges traveling on the U.S. inland waterways. Maintaining the infrastructure, including the lock and dam system, along the inland waterways is critical to U.S. soybean farmers' competitiveness. Maintaining this competitiveness will require partnerships involving all stakeholders that benefit from river transportation.

The U.S. Army Corps of Engineers is responsible for the upkeep and maintenance of locks and dams and the channels that connect them. However, it's not just the Corps interested in the viability of the inland waterways.

"Maintaining the waterways is very much a team sport," says Eddie Belk, chief of programs at the U.S. Army Corps of Engineers headquarters in Washington, D.C. "We work with the navigation industry, shippers and movers, the U.S. Coast Guard and industry to help us shape priorities. We want to make sure we focus the limited funding we receive to make the biggest impact."

While the Corps is responsible for the upkeep and repair of the infrastructure, Congress and the Administration determine funding to invest in repairs and improvements. Partnering and working with interested stakeholders will help ensure those who benefit from river transportation communicate that value to decision makers.

"It's essential that people who depend on water infrastructure – and to whom it's important – communicate the value proposition of improvements to the economy, through jobs and international trade," says Belk. "Water transportation is a sort of 'silent servant' that many people take for granted, because it's always been there, and they miss the fact that investments are needed to sustain inland waterways."

In addition to communicating the value of inland waterways to decision makers, partnerships may hold other value for waterway improvements. One avenue is leveraging partnerships through alternative financing mechanisms, including public-private partnerships. These arrangements bring both the public and private sectors together to invest in infrastructure, which allows for new sources of funding and operational efficiencies that reduce the cost of projects.

"The Corps is open to any and all options available to help us improve the viability and performance of our lock and dam infrastructure," says Belk. "If it can buy down risk and improve performance, we're very open to that."

For more information about the impact of infrastructure on U.S. soy, visit UnitedSoybean.org.

What's the difference between AWO's RCP and the Sub M rules? And, why does it matter?

The short answer is industry needed the compulsory route. AWO saw the hole in company safety early on and worked hard to get companies to recognize it too. Most of their members have done a good job of evolving within the RCP. But, AWO fell short of engaging the small companies that don't necessarily have a business need for RCP. The cost of joining AWO keeps people out. They don't understand the benefits. AWO has done a great job of hosting Sub M informational meetings and inviting non-members lately. I hope that they continue to do this. There is not a lot of difference between Sub M and RCP. But AWO through the RCP will help you grow. It would be very hard to make it on your own at this point in the game. The RCP accepted as TSMS is great for the AWO members but even RCP systems audited last year will have to be modified to meet Sub M. TVIB is doing a lot behind the scenes to ensure that they are ready and the auditors that I know are helping AWO member companies learn more about the regulation in order to successfully complete their next audit.

Some stakeholders feel like that the Sub M rules didn't go far enough. What's your take on that?

It's a foundation. TSAC and the USCG did a good job. Each company can build on it to continuously improve. The TSMS option gives each company the flexibility to become better. And we don't need more regulation to make us better. We just need a better attitude.

Another aspect of the SubM rules that will likely make an impact on industry is that while a lot of firms participated in the AWO RCP, just as many did not. Will this level the business playing field, and if so, how will it change the business?

I think Sub M will level the playing field. I know of companies that will cease to exist by next July. They don't want to comply. I know of some that will use older equipment in tough shape until they can no longer do so. And I have spoken with companies that still don't think it will happen or if it does that it won't apply to them. We'll lose a lot of vessels, but that's okay. They are the ones that we need to lose. The remaining companies will offer safer, better vessels for our mariners to work on and consequently fewer boats (but the same amount of work) should allow rates to rise. And a more safety-oriented industry will force the barge owners in the marine construction/dredge side to change their way of doing business.

Do you see more consolidation for the inland marine business in the near future? If so, what's driving that?

We are an industry made up of mom-and-pop businesses that do the work that the big guys don't want. I think that there will be fewer, better-run companies. And sadly, it will be much more difficult to start a small towing company in the future. The average small towing company is started by a tug/towboat captain who thinks that he can do better if he owns the business, but has little business acumen or regulatory knowledge. The post-Sub M implementation small towing operator will have to know more and spend more. Gone are the days of picking up an old boat and going into business. A Sub M-compliant boat will not be cheap.

What keeps you up at night? What can be done about it?

Attitude. We have great boat operators in the towing industry. Most of them downplay their professional side and that's a shame. Not to disparage deep sea captains, but our inland guys are hands-on operators – 1,100 foot tows in the canal, 40-barge tows on the river – those are highly developed skills. The tanker captains have a pilot to get them to sea, a pilot to get back in to port and a docking pilot to land them. Towing vessel operators do it all, every day. I wish that they would recognize that they are also marine professionals. A lot of guys on towboats and tugs feel that their lack of education keeps them from being true professionals (and they will put down the academy guys for their book knowledge), but it's only their perception of themselves and their industry that keeps them down. If we can get them to view themselves in a new light (as the equal of the deep sea captain) then we would see changes within our industry.

Outside now – looking in – what would be your focus if you were the CEO of a large inland barge & push boat transportation concern?

Training and coaching. Exposure to more men and women from the academies for the hawsepipers and vice versa. We can all learn from each other. My turning point came at a gathering of Mass. Maritime Alumni that I was invited to. I was impressed as they all talked about their lives at sea and the cool places and foreign ports that they had been to. Then someone asked me what I did and when I told them I ran the Erie Canal they all fell silent. That was a "cool, foreign place" that they could never go and they wanted to know more. We shared sea stories for hours after that. There was mutual respect. The brown water/blue water line seems to divide two very different worlds but we have a lot in common and a better understanding of each other would be very beneficial. They have lived through a lot of what the brown water people are about to go through. We should all strive to be the best that we can be and continuously learn about our profession.

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The 2007 Act: "Highways to Waterways"

By H. Clayton Cook

Cook

The Energy Independence and Security Act of 2007 (the 2007 Act) authorized a Short Sea Transportation (SST) program. As passed by the House, the legislation would have authorized $2 billion for the Maritime Administration (MARAD) Title XI program and have extended the Capital Construction Fund Program (CCF or Program) to shipyards and operators building and operating vessels in SST services nationwide. Mr. Oberstar and his Congressional co-sponsors were confident that with their proposals in place, the much-discussed use of U.S. waterways for the transportation of freight and passengers by water ("From Highways to Waterways") would be underway. While retaining the SST terminology for MARAD CFR regulations, MARAD now more generally refers to the SST program as the "America's Marine Highway (AMH)" program.

The 2007 Act gave MARAD the authority to add U.S. citizen shipyards and operators in the SST/AMH coastal and inland waterways trades as CCF Program "qualified vessel" participants. In the decade that has followed, not a single U.S. citizen shipyard, and only one U.S. citizen operator has sought to access this CCF Program opportunity. Why?

MARAD CCF Program

The CCF Program authorized by Merchant Marine Act of 1970 (1970 Act) enables a U.S. shipyard, or ship owner or operator, to defer the payment of federal (and in most instances state) income taxes on the profits from U.S. vessel construction, vessel operations and sales, and vessel leasing, and on investment income on its Program deposits. The Program provides what is in effect an interest free loan (from the federal and state taxing jurisdictions) of the money that would otherwise be paid to settle federal and state taxes, in exchange for the taxpayer's promise to use that money for the construction of vessels for operation in "qualifying trades."

As defined in the 1970 Act these "qualifying trades" were the U.S. foreign and Great Lakes trades, and U.S. domestic non-contiguous (Alaska, Hawaii and Puerto Rico) trades. No other domestic trades were included. The 2007 Act expanded the domestic qualifying trades to include the carriage of "cargoes contained in intermodal cargo containers loaded on the vessel by crane" and "cargoes loaded on the vessel by means of wheeled technology" in all coastwise and inland river services nation-wide.

Now, more than 46 years since its 1970 Act passage, the Program has been highly successful. All U.S. citizen owners of significant Jones Act qualifying trades fleets are enrolled. At 2015 year-end deposits totaled approximately $2.2 billion from 147 Program participants. Particular advantages include:

- *Deferring tax:*

The CCF Program allows a Participant to defer tax by depositing earnings with a MARAD approved financial institution Depository. The Participant commits to a program of vessel construction and MARAD commits the United States to defer tax on monies deposited to finance these projects. Unlike federal income tax benefits under the Internal Revenue Code, the Program tax benefits are contractual, as agreed by MARAD and the Participant. MARAD administers the Program under regulations that provide the rules for participation, the sources and measures for deposits, the timing and accounting for withdrawals, and other Agreement matters. The Internal Revenue Service's role is detailed in the MARAD/IRS Joint Regulations that govern a limited number of filing and accounting issues.

A shipyard may make deposits representing shipbuilding profits, and a vessel owner or operator may make deposits representing chartering and operating income. The Participant's taxable income is reduced by the amount placed in the CCF account. The Participant remains the owner of the deposited funds and manages their investment itself or with an investment advisor. The Participant then later withdraws funds from its CCF account to construct or acquire or reconstruct a qualified vessel. These withdrawals are not subject to income tax liability, but there is a downward adjustment in the tax basis of the vessel for which the monies are used.

The tax benefit begins when the taxpayer's deposit is

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The 2007 Act gave MARAD the authority to add U.S. citizen shipyards and operators in the SST/AMH coastal and inland waterways trades as CCF Program "qualified vessel" participants. In the decade that has followed, not a single U.S. citizen shipyard, and only one U.S. citizen operator has sought to access this CCF Program opportunity. Why?

made, and ends when the money is withdrawn in a "qualified withdrawal" to finance the purchase or construction of a "qualified vessel." Because a vessel owner's cost basis will have been reduced by the measure of these Program withdrawals, the owners will begin to "repay" the deferred tax when the vessel is placed in service. The Program basis reduction will result in reduced depreciation deductions during its years in service, and a lower cost basis when it is sold. On a vessel-by-vessel basis, the taxpayer's deferrals are recaptured in this fashion. However, in a typical vessel fleet context, income from vessel sales will often be deposited and taxes will be further deferred, and vessel basis reductions will be on a fleet basis. In a fleet expansion context, the CCF Program tax deferrals can be both substantial and ongoing.

Shipyards using Program monies for working capital in the construction of qualified vessels will have a corresponding lower basis at vessel deliveries, and will pay more tax than would otherwise be due, or will deposit their proceeds of sale adding them to their Program working capital accounts and continuing their Program deferrals.

- ***Accelerating Depreciation:***

The CCF Program also allows the vessel owner to retire qualified vessel indebtedness with before-tax monies, by first depositing the required measure of vessel income, then making qualified withdrawals to retire the debt, and then making an accompanying offsetting reduction on the cost basis of its qualified vessel. Once the cost basis of this vessel has been exhausted, the taxpayer makes vessel-by-vessel reductions in the cost basis of its entire vessel fleet. This allows a vessel owner to access and use the depreciation deductions of its entire fleet on a current basis. A taxpayer employing this methodology can often materially enhance its current cash and liquidity positions.

- ***Coastal Inland Trades Opportunities:***

U.S. coastal and inland waterways services can only be undertaken by U.S. citizens, operating U.S. built vessels that are owned by U.S. citizens. Any owner or operator engaged in these services, and that has a plan for the purchase of one or more "qualified vessels", may be able to achieve Program deferrals. These deferrals would be available for the taxes on the income from "eligible vessel" operations in all coastwise and inland waterways trades.

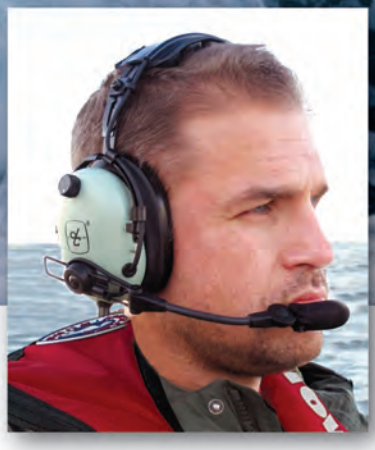
The 2007 Act change was made so that these deferred tax accumulations could be used for the purchase or construction, or the paydown of existing debt, of this entire new class of SST/AMH "qualified vessels." So, since 2007 an existing inland waterways owner or operator has been able defer the tax on income from its "eligible vessel" operations, by agreeing with MARAD that the funds being deposited will be used for the purchase or construction of new qualified vessels.

- ***Inland Shipyard Opportunities:***

MARAD opened the CCF Program to shipyard participation in 1988 with the contract award to National Steel & Shipbuilding Company (NASSCO), which remains a Program participant today. NASSCO is said to have a Program working capital fund in excess of $500 million that it employs in financing transactions. There are no references to shipyard Program participation on the MARAD website or in the 46 CFR Part 390 regulations. The rules of MARAD Program administration are generally similar to those for vessel owners. However, the informality involved with a case-by-case administration without formal CFR regulations has discouraged shipyard participation.

The Program should allow an inland waterways shipyard to defer the payment of the taxes on shipyard profits from its vessel sales, and vessel leasing, and associated investment income. The alternatives for inland shipyard uses in the financing of new "qualified" vessel and tug and barge designs, and in leasing transactions appear significant. Any U.S. shipyard that meets MARAD U.S. citizenship standards, that owns or leases at least one U.S. built vessel engaged in U.S. domestic or foreign commerce, and has a plan for the construction of qualified vessels should contact MARAD to discuss participation in the CCF Program.

How to keep calm when the sea is anything but.



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THE WAY FORWARD

MARAD regulations require that a vessel that has been the subject of Program withdrawals must be operated in "qualifying trades" for the vessel's useful life, and will otherwise incur "liquidated damages." The rules "attach to the vessel (even if ownership changes) for 20 years after construction or acquisition of a new vessel." MARAD imposes the liquidated damages provisions on subsequent purchasers even though the original owner has repaid its Program tax benefits to the U.S. Treasury in a taxable sale. MARAD justifies these "attached to vessel" penalties as if the original deferral benefit has in some way been passed on to the subsequent purchasers. This benefit has not been passed on in fair market value transactions.

The owner of a Program vessel is benefitted by the deferral of the payment of taxes that would otherwise have been due on monies that are deposited. When monies are withdrawn to finance the vessel purchase, or retire vessel debt, the deferral ends. The Program vessel cost basis is reduced by the measure of the earlier tax benefit which is then recaptured through reductions in the Program vessel depreciation, and a larger taxable gain on the occasion of its sale (and the gain attributed to the Program basis reductions will be taxed at ordinary income rates). The combination of the reduced depreciation deductions and the taxation of the additional gain will recoup the original tax advantage received by the seller. No tax benefit is passed on to the purchaser.

When an owner wishes to sell a Program vessel, the vessel is less marketable because of these trading restrictions that remain "attached." The owner may not be able to sell the vessel at what would otherwise be its "fair market value," or the owner may not be able to sell the vessel at all. Where would a shipyard or a vessel owner find a purchaser for a vessel so limited in its employment? If you were an operator that had made such a shipyard purchase, or had entered the CCF program and used CCF monies to pay down vessel debt, to whom would you later sell the vessel?

If a shipyard enrolls in the Program and uses its deposits as working capital to finance customer vessel construction, the customer must restrict the vessel to qualifying trades for 20 years. If the vessel to be purchased might be used in any service other than qualifying services, the shipyard cannot use Program monies in the construction.

The 2007 Act was intended to open the Program to SST/AMH qualified vessel construction. MARAD has received only one application for Program participation under this 2007 enlargement. Asked why there have not been more Program applicants, MARAD staff has responded that the SST/AMH sectors "have been depressed." When I have inquired of MARAD staff about the advice that I have received from U.S. Gulf Coast shipyards and operators that the liquidated damages regulations have discouraged and prevented Program participation, the staff have responded that the regulations "are required" by the 1970 Act and cannot be modified.

The liquidated damages regulations are not required by the 1970 Act in situations in which the Program vessel is the subject of a taxable sale or exchange. It remains uncertain as to whether MARAD will amend these regulations to make the Program useful to the U.S. shipyards and vessel owners that were the intended beneficiaries of the 2007 Act.

H. Clayton Cook *was the MARAD General Counsel who was responsible for the 1970 Act CCF Program implementation. He completed 10 years as U.S. flag counsel for Seward & Kissel LLP in December 2014, and now continues his U.S. flag practice from new quarters in McLean, VA. Contact him at:*
cook@CookMaritimeFinance.com

Mississippi Mishap

Bridge Allision Triggers 2-Year License Defense.

By Randy O'Neill, *Senior Vice President with Lancer Insurance Company*

O'Neill

Professional Captains and Pilots in all sectors of the maritime industry confront daunting challenges and hazards every day on every trip. From piloting ocean-going ships into congested harbors and safely docking them, to navigating ferries, tourist vessels and water taxis through harbors and rivers teaming with other commercial vessels and recreational craft and everything in between, U.S Coast Guard licensed deck officers have one of the most difficult, pressure-packed jobs in any industry.

Arguably, the Pilots and Captains who face the most challenging conditions in their daily duties are the hard-working officers aboard vessels navigating the nation's rivers and their tributaries in the towboat industry. Bridges, dams and locks constantly changing water levels and shoaling and limited space in which to handle all of these shifting challenges while pushing a flotilla of barges are the rule, not the exception. Long periods away from home, constant time pressures and deadlines, all are under the watchful eyes of river-based Coast Guard commands make work in America's inland rivers one of the most difficult career choices in the maritime … or any … industry.

Perhaps not surprisingly, when things go sideways, it seldom involves a minor incident. The following case study demonstrates how a seemingly routine passing arrangement between two towboat Pilots became a nerve-wracking license-threatening mid-river collision – in an instant.

A Perilous Passing

The license-insured river pilot was traveling northbound on the Mississippi River at around 4 knots pushing 15 barges, 7 of which were empty. When approaching one of the many railroad bridges spanning the river, he received radio contact from the pilot of a southbound tow who wanted to make arrangements for a passing to take place near the bridge. The northbound vessel approached the bridge on the portside descending bank with the intent of proceeding through the left descending span. Unfortunately, the river had other plans.

As he closed in on the bridge and the oncoming southbound tow, the swollen river's current slowed his vessel's speed to barely 1.5 knots and slowly began to affect control of the tow. Despite taking immediate and appropriate corrective action, the current's strength prevailed, forcing his towboat and barges into the bridge piers causing the tow to break-up and scatter haphazardly across the river. The Pilot's corrective action, while unable to allow him to avoid alliding with the bridge piers, did prevent a collision with the southbound tow … an event which would have presented a higher probability of injury to the crews of both vessels, oil product discharge into the river and, most likely, a lengthy shutdown of the busy waterway.

The Coast Guard, both companies and bridge authority were all contacted and as the barges were slowly recovered and secured, the Pilot of the northbound vessel was sent for drug testing before meeting with investigators from the regional Coast Guard command. Prudently, in the interim, he reported the incident promptly to his License Insurance Company and was assigned his own maritime attorney who, via cellular telephone prepped him for his initial Coast Guard verbal interview, assisted him in drafting his maritime casualty report (2692) and accompanied him to his formal Coast Guard interview.

Several nerve-wracking interviews and attorney conferences later, the Coast Guard investigators finally decided against pursuing negligence charges against the pilot, concluding that, given the circumstances, he had acted responsibly and did the best he could to prevent a bad situation from becoming even worse; in other words, a collision with the Southbound vessel and its barges. The only hitch: It took two years from the date of the incident for the captain to receive notification that no further action would be pursued against his license. This was perhaps the most agonizingly long 24 months in that professional mariner's long and admirable career.

The legal fees incurred in the defense of this towboat Pilot's license totaled $4,500 as maritime attorney worked long and hard to get authorities to finally render a decision to bring him peace of mind that his Coast Guard license was not at risk. He was also very relieved that all his legal expenses were fully paid by his license insurance company.

While the Pilot passed the incident site dozens of times since losing out to the power of the mighty Mississippi's unpredictable currents without incident, there is also little doubt that the memory of that bridge allision and the two years of legal proceedings and long-awaited exoneration will never be forgotten. Nor will the knowledge that protecting one's ticket before taking last line will always be a smart move, as well.

Understanding Legal Liability in a Subchapter M Environment

There is more to SubM than just attention to safety. Protect yourself accordingly.

By Mark Hebert, Partner at Jones Walker LLP

Hebert

In today's environment, safety management systems for brown water marine operators are standard industry practice, whether they come in the form of the American Waterways Operators (AWO) Responsible Carrier Program (RCP) or the Tanker Safety Management Assessment (TSMA) framework developed by the Oil Companies International Marine Forum (OCIMF) for liquid carriers. However, with the full-fledged implementation of Subchapter M on the horizon, individual company-established Towing Safety Management Systems (TSMS) are expected to be the norm for the brown water industry.

Subchapter M was enacted for the safety and protection of seamen on vessels in navigation. The entire focus of Subchapter M is establishing a "comprehensive safety system ... dedicated to towing vessels." While this safety system, the TSMS, can be tailored to meet the needs of each individual operator, a TSMS serves the purpose of "establish[ing] policies, procedures, and required documentation to ensure the owner or managing operator meets its established goals while ensuring continuous compliance with all regulatory requirements." Because Subchapter M mandates what elements that must be included in a TSMS, questions will arise with respect to a vessel owner's or operator's ability to defend himself or herself in the event of a serious marine incident.

Perhaps one of the greatest challenges that will be faced is that affirmative defenses, once exercised routinely, likely will become limited in both scope and application, and statutes which once afforded protection may be rendered useless. As such, all vessel owners and operators should expect certain legal issues to arise in the context of civil litigation under the General Maritime Law and involving personal injury or death, allisions or collisions.

• *First, Subchapter M requires towing vessels which elect the TSMS option to be "operated in accordance with the TSMS applicable to the vessel." Thus, failing to adhere to the vessel's TSMS may very well equate to a violation of the federal regulation requiring compliance.*

• *Second, if a plaintiff proves the violation of a regulation (or the TSMS) and some causal connection between the violation and the injury, the vessel owner may well be absolutely liable. This principal of law, embodied in the Pennsylvania Rule, has been a part of federal maritime law since the United States Supreme Court's 1873 ruling in The Pennsylvania.*

• *Third, the violation of a regulation which has any causal relationship to the injury can result in the liability of the employer and any contributory negligence on the part of the injured employee will not be considered in the determination of apportionment of fault.*

• *Fourth, a vessel owner will only be able to limit his liability to the value of the vessel and her pending freight under the Limitation of Shipowners Liability Act (46 U.S.C. App. §30501 et seq), if he proves that he lacked privity or knowledge of "the act or condition that caused the injury." Various provisions of Subchapter M, generally under a TSMS, essentially charge the ownership/management with knowledge and require privity in the day to day operations of the vessel under the TSMS. It thus may be argued that, by statute, the owner's or operator's knowledge is mandated and privity may be implied.*

In addition to the above legal issues, vessel owners will need time to adjust to civil litigation in a new system of extensive regulatory requirements. In most cases, they will have until July 20, 2018 to do so. However, we can expect discovery to become even more onerous. With the enactment of Subchapter M, the U.S. Coast Guard and industry hope not only to establish a comprehensive safety program for inland towing vessels, but also to ensure compliance with that program. As a result, with every regulation and requirement of Subchapter M comes an additional "compliance" regulation which mandates that the owner or managing operator document, record, or preserve "objective evidence" of its compliance with the regulation.

A brief overview of the proposed regulations reveals that, at a minimum, vessels opting for the Towing Safety Management System (TSMS) will be required to have and maintain on board the substantial documentation establishing compliance. Much of this documentation will be maintained in electronic format, making discovery easier for plaintiffs. The concern is that the TSMS will be a "roadmap" for plaintiffs counsel seeking to establish a pattern of non-compliance with federal regulation (i.e., Sub M) and a TSMS by a vessel operator or owner.

Finally, there is the issue of use of audits under Sub M for civil litigation. In the time remaining before the deadline for full transition to Subchapter M compliance, more attention should be given to the possibility of extending the protection given to Coast Guard accident reports to the documentation

required to comply with the TSMS option. Reports created by the Coast Guard as part of a marine casualty investigation are protected by Title 46 of the United States Code.

Notwithstanding any other provision of law, no part of a report of a marine casualty investigation conducted under section 6301 of this title, including findings of fact, opinions, recommendations, deliberations, or conclusions, shall be admissible as evidence or subject to discovery in any civil or administrative proceedings, other than an administrative proceeding initiated by the United States.

The marine casualties that require reporting include:

1. *death of an individual;*
2. *serious injury to an individual;*
3. *material loss of property;*
4. *material damage affecting the seaworthiness or efficiency of the vessel; and*
5. *significant harm to the environment.*

Extending the same level of protection to internal audit reports under Sub M would encourage vessel operators to choose the TSMS option. The TSMS option is designed to be a more efficient way of towing safety management than relying solely on Coast Guard inspections, and Congress should provide to internal audits under Sub M the same protection as exists under 6301 for Coast Guard investigative reports to encourage the implementation of an even stronger and more proactive TSMS than a vessel owner or operator would otherwise craft and draft.

These are only some of the legal issues that will likely arise as vessel owners and operators enter into compliance with Subchapter M. Therefore, when crafting a TSMS, owner's and operator's should consider the legal ramifications of this new regulatory regime in order that the TSMS can be properly tailored to their operations, and thus drafted to as best as possible reduce exposure to such risks liabilities imposed upon them under Subchapter M.

U.S. Shipyards: Building for America, Jobs for Americans

By Owen Doherty


Doherty

The shipbuilding and ship repairing industry has always been a core strength of our nation. It has enabled the United States to protect and project its prosperity, power and influence internationally. A book in my office signed by shipbuilder William Webb illustrates the point. Mr. Webb inherited his father's shipyard in 1840 and built over 130 of the fastest clipper sailing vessels; he later built the largest and most celebrated steamships of his era.

Those were glory years for the U.S. maritime industry, an era when the shipping industry was synonymous with American sovereignty. While it is no longer the nation's most profitable export manufacturing industry, U.S. shipbuilding and ship repair continues to be a major economic engine, as critical to our national security and commerce as it was in colonial times. Our founding fathers recognized that our maritime assets enabled us to conduct international trade, protect our shores, and grow the U.S. economy toward independence, and they enacted strong policy to protect it. Today, these vital industries fortify America's ongoing status as a "maritime nation," with capacity to build and maintain a modern, safe fleet to defend U.S. interests at home and abroad.

To underscore this point, the Maritime Administration (MARAD) published ***The Economic Importance of the U.S. Shipbuilding and Repairing Industry in November 2015***, recognizing the hundreds of U.S. shipyards spread across the country engaged in shipbuilding and repair. In 2013, the U.S. private shipbuilding and repairing industry directly provided 110,390 jobs – including naval architects, project managers, riggers, welders, painters and a host of suppliers – $9.2 billion in labor income, and $10.7 billion in gross domestic product, or GDP, to the national economy. These are well paying jobs with opportunity for advancement.

Many of these shipyards build not only commercial vessels but also ships used by the U.S. Department of Defense. Case in point: General Dynamics, NASSCO Shipyard in San Diego recently built the world's first containerships that run on natural gas, and is now building a series of vessels for the Navy's Expeditionary Sea Base program. It is a compelling example of a strong domestic U.S. shipbuilding industry producing vessels for important military and economic objectives.

Unfortunately, a strong domestic shipbuilding and repair industry doesn't translate to success in the international shipping market. Contrasted with many foreign competitors now able to build today's mega-container cargo ships far more economically, America's international shipbuilding presence is shrinking to unprecedented levels. To regain its position as an international maritime power, the U.S. shipbuilding industry must undergo a paradigm shift in how it does business.

At MARAD, our historic role has been to support this industry through a variety of financial programs. The owner of the NASSCO-built vessels mentioned above, TOTE, for instance, benefited from the MARAD-administered Federal Ship Financing Program (FSFP) that guarantees loans to help U.S. shipyards produce a modern commercial fleet.

Another is Eastern Shipbuilding Group (ESG) of Panama City, Florida, a long-time supporter of the oil industry. Following the 2010 Deep Water Horizon disaster, Eastern took a hard hit, yet the very next year MARAD jumped in with an FSFP loan guarantee for five platform supply vessels to be exported to Brazil.

Those guarantees helped Eastern retain its workforce, as did prior MARAD Small Shipyard Grants in 2008 and 2016, which funded equipment to improve efficiency and productivity. That support positioned ESG this past October 2016 to receive the largest United States Coast Guard contract in history, the Offshore Patrol Cutter contract.

Dependent on ongoing funding availability from Congress, the FSPS presently administers a $1.5 billion portfolio consisting of 29 loan guarantees that supported 19 borrowers to build 37 vessels. Most recently, MARAD added to its portfolio with approved loan guarantees of $362.7 million to Crowley ConRo, LLC, for two combination container, roll-on roll-off vessels.

For shipyards employing fewer than 1,200 employees, MARAD's Small Shipyard Grant (SSG) program fosters efficiency, competitiveness, and quality ship construction and repair, while underwriting projects to improve employee skills in communities linked directly to the maritime industry. Congress is also working to protect the U.S. shipyard industry through its Assistance to Small Shipyards, providing 160 grants totaling approximately $177 million between FY 2008 and FY 2016. Collectively, these grant and loan programs have helped domestic shipbuilders modernize, expand, and continue to prosper.

Yet in international trade -- where the U.S. has historically projected and protected its power and influence – American shipbuilding is vanishing. To begin to regain that footprint, a major revolution not only in how it does

business – but in how our nation perceives the value of the maritime industry -- is a must.

The answers are varied and complex, but it can be traced back to the shipbuilders' "order book." To attract orders, vessels need to be delivered on-time, within budget, be well built and competitively priced. In domestic trade, the market remains relatively strong for U.S.-flag vessels, even as shipyards lay-off workers and the market contracts. As of March 2017, only 20 ships, ATBs and ocean going barges are on order, a deeply troubling trend.

U.S. shipyards are competitive when there are favorable "economies of scale," such as when manufacturers recently delivered U.S.- built Offshore Supply Vessels for export. The cost and quality of those vessels were competitive in the foreign market, which translated into profits and prestige. Our ability to build vessels more efficiently reflects well on domestic shipbuilding and pads the order book. It's good for business, but it isn't enough.

The big picture is that U.S. shipbuilding remains non-competitive in international trade. Something must change or it will disappear altogether. The U.S. maritime industry has led every major U.S. economic advance; it has defended our nation in every war and answered the call in every crisis. Today it fuels a renaissance in commercial trade that brings every conceivable product to consumers' doorsteps.

Yet "heritage" will not save our shipbuilding and repair industry. As a nation, we need to rediscover and reclaim our role as a maritime power. Through both public and private investment, we must take the steps needed to help this critical industry compete in an intensely fierce international shipping environment. Our national security and prosperity depend on it, because once it is gone, it won't return.

***Owen Doherty** is the Associate Administrator for Business and Finance Development. Offices under his portfolio manage the Federal Ship Financing program, Capital Construction Fund, Capital Reserve Fund, Small Shipyard grants, Marine Insurance, and Fair and Reasonable Rate determinations.*

*The MARAD FSFP and SSG programs can be found on the MARAD website along with the Program Manager information at **www.marad.dot.gov**. Other MARAD programs include the Capital Construction Fund and Capital Reserve Fund providing deferred tax benefits for U.S. shipbuilders.*

Digital Marine Communications:

Helping to Protect Our Borders

Edited by Joseph Keefe

The U.S. Customs and Border Protection (CBP) Air and Marine Operations (AMO) is responsible for security and facilitation operations at 328 ports of entry throughout the United States. Missions include the pursuit, boarding and searching of suspect vessels, seizing vessels and contraband, and arresting violators. It is a difficult and dangerous job. To that end, CBP recently selected SAFE Boats International to design and build a 41-foot Coastal Interceptor Vessel (CIV) that is up to the task. "The patrol boat market is really a specialty market," said Janice Willis, Vice President Program Management at SAFE Boats. She adds, "It's not a market that a lot of aluminum boat builders can compete in because of the high performance requirements of the vessels."

Among its many innovative features, the CIV utilizes an advanced, stepped hull design that creates less friction on the hull surface, facilitating increased speed and fuel savings for the boat's powerful Quad Mercury 350 HP engines. The vessel also boasts cutting-edge equipment from a myriad of first class vendors. One such OEM firm, David Clark Company, the crew-to-crew digital communication system. David Clark Company, known for its "green dome" headsets worn by private, commercial and military pilots since 1975, has expanded its product line by providing headsets and systems for critical communications in the fire/rescue, airline ground support and two-way radio markets, and has a 15-year track record in supplying wired and wireless communication systems for the marine industry.

The Review Process

"We reviewed three vendor offerings for the CIV communication system and found the David Clark digital intercom system was the best choice based on price, simplicity and specification equivalency," said William Ledger, Program Vessel Project Engineer at SAFE Boats. Willis adds, "When we had the information back, we looked at the differences and evaluated them … looked for features and benefits above and beyond what was requested."

The decision to partner with David Clark was made after two months of rigorous Operation Testing and Evaluation by U.S. Customs on the prototype vessel. During this period, every aspect of the CIV was put to the test – at speeds exceeding 54 knots. "The report encompassed all aspects of mission operations and contract performance specification review. The David Clark Series 9100 intercom system met or exceeded performance requirements," said Ledger.

Image above: The David Clark Series 9100 System provides single or multi-channel programming options for multiple users.

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Series 9100 System headsets, master station and user interfaces allow versatile configuration and programming capability.

The SAFE Boats 41-foot Coastal Interceptor Vessel (CIV) with advanced design and technology reaches speeds in excess of 54 knots.

Series 9100 System Overview

The David Clark Series 9100 Digital system is comprised of noise-attenuating headsets in over-the-head and behind-the-head styles that provide high levels of comfort, performance and durability. Headsets feature an integrated momentary push-to-talk (PTT) switch located at the microphone bracket with M2-H advanced microphones for optimal noise-cancellation and enhanced speech clarity. Other components include the Master Station – the heart of the system – providing high performance Ethernet/IP versatility and a modular approach to system connectivity. The unit accepts a variety of card modules that efficiently and significantly expand interface connectivity and capabilities.

A variety of User Interface products – Wireless Belt Station and Gateway, hard-wired Headset Station – provide connectivity from the Master Station to the headsets, which are compatible with both wired and wireless options. Headsets and components can be configured to create communication system solutions for a wide variety of marine applications. "No two platforms have the same configuration requirements," notes Ledger. "For that matter, often no two missions have the same communications profile. Due to the flexibility of the system, mission-specific configuration is feasible. The mission profiles of our military and first responder customers continue to evolve, pushing the envelope of complexity of command and control requirements. The David Clark Series 9100 Digital Intercom system is simply the next generation technical solution."

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Tomorrow's Mission Profile Demands Today's Comms Solution

The David Clark digital intercom communication system provides benefits not only to end users, but also to boat OEMs. Bob Daigle, Intercom Systems Product Manager from David Clark, underscores the benefits of simplicity, versatility and scalability that the Series 9100 digital system provides. "Our system architecture utilizes industry-leading digi-

tal media networking technology that affords the transport of multi-channel, ultra-high quality voice and data over CAT5e cable. This software-enabled network control provides a quick and simple methodology for system setup, routing and applicable device monitoring, creating the perfect bridge for the David Clark digital crew communication system within its own physical platform and beyond," says Daigle.

Ease of system installation and programming is also important to boat builders and to end users, as well, especially the military and government agencies. Because the system operates on power-over-Ethernet (PoE), all cabling, with the exception of the radio interfacing is Cat5e. This common communications cabling makes for easy installation. Additionally, the system uses a web browser type graphic user interface for programming the system. Configuration of the system can be accomplished by any technician with a laptop and Ethernet cord. Simplified configuration of the David Clark digital system is especially important for in-field service and system updates. Both system hardware and software are built for ease of configuration, with the needs of the user in mind.

In a world where every second counts, SAFE Boats went with the obvious choice. "A common complaint from our military and first responder partners is system configuration complexity. Boots on the ground must be able to quickly understand a system for use, maintenance and repair. The David Clark 9100 system delivers a primarily 'plug and play' system," noted Ledger.

Partnering Together

When it comes to customer relations and support, SAFE Boats and David Clark share a common commitment to responsive customer service. Ledger explains further, "David Clark excels at quick turnaround for documentation, product support and technical requests. Their team has always exceeded expectations," said Ledger. As a result of their ability to work together and the proven performance of the Series 9100 system, SAFE Boats has previously partnered with David Clark on other projects. "We just recently modified our contract to put the David Clark comm system on the U.S. Coast Guard's Cutter Boat-Over the Horizon IV," noted Willis. The David Clark Series 9100 Digital system was also installed on the recently introduced Multi-Mission Interceptor (MMI) prototype, also a SAFE Boats design.

Product Lifecycle Management for Shipbuilding

Tomorrow's high tech fleets will depend on shipyards – long after the christening is over. Siemens PLM software makes that dream possible – today.

By Joseph Keefe

According to global powerhouse Siemens, a major transformation is underway in the marine sector. As operators strive to develop more energy-efficient, reliable and environmentally friendly vessels that also lower operating costs, they will increasingly depend on shipyards to make that happen. That's right: shipyards. Long after the vessel slides into the water and the christening party is but a distant memory, the clean and efficient workboat of tomorrow will leverage a wealth of data that the builder will manage. Before any of that happens, shipbuilders will also need to design and build ships faster and better than ever before.

The two concepts are not mutually exclusive. The yards hoping to be around to serve tomorrow's clients will, says Siemens, require a sea change in the way they operate. In the future, says Siemens, it will no longer be good enough to just build a good vessel. Operators will expect that the yard be an integral part of their vessel's life cycle – from cradle to birth. It isn't just about the ship – it is also about the shipyard itself.

In a nutshell, the Siemens Product Lifecycle Management (PLM) for Shipbuilding solution enables a holistic approach to optimizing shipbuilding. PLM for Shipbuilding improves total enterprise collaboration, synchronization and productivity, as well as lifecycle ship service and support, by optimizing shipbuilding processes. The way forward isn't just a concept; Siemens version is here today.

In the Beginning: Shipyard Optimization

Optimizing shipyard performance means more than implementing a fancy software program. Long after U.S. yards lost the vertical integration advantage of having steel production as a part of their core business, they've had to look for other areas where they can improve their game. Veteran shipbuilder Fred Harris, long an admirer of the Korean shipbuilding model, once told this writer that 'lay down space' – or in other words, ample real estate to work – was also a key component within that Korean model. But, what if a yard has neither? That's where Siemens PLM comes in.

The modern shipyard benefits greatly from technology enhancements. Older legacy yards can gain similar – if not greater gains. In one shipyard in Germany that had been building ships for more than 200 years, a Siemens digital simulation and optimization analysis was able to reduce cycle time by 10% and labor by 20% by achieving a more efficient flow of material through the shipyard.

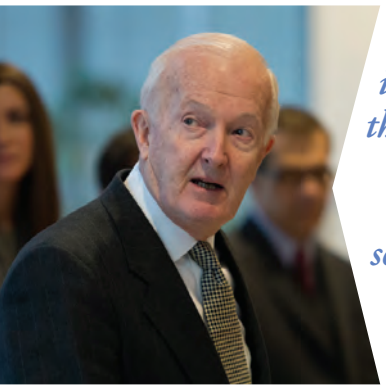
The concept sounds good, but we asked Siemens Director of Global Marine-Industry Marketing Tim Nichols if the solution would scale down to the typical U.S., second and/or third tier yard. "Siemens' PLM Software is designed to facilitate collaboration between design teams and operations regardless of their size with the capabilities to integrate a variety of non-native CAD inputs into a single integrate ship structure from work boats to luxury yachts and cruise liners to 100,000+ aircraft carriers," replied Nichols, adding, "One shipyard CEO indicated that he expects his 'smart shipyard' to achieve a 15% cost reduction, which is significant vis-à-vis ships built before the transformation cost billions of dollars."

The next step involves what Siemens describes as a holistic approach to optimizing shipbuilding. This includes connecting all aspects of the shipbuilding cycle, each existing in stove piped format. Nichols explains further, "Siemens' PLM Software can manage a comprehensive data-base, which includes the 3D models of the structure, systems and compartments, but also the ship system level requirements and relevant design decisions, configuration and change management status … which is crucial over a protracted construction period … as well as process and build procedures. This single source of total insight is available anytime and anywhere and can be accessed in a tablet or other mobile device anywhere in the shipyard."

Supply Chain Management

Because you can't build a vessel in a vacuum, shipyards rely on a global supply chain of partners and suppliers to help design, develop, manufacture and test new ship concepts. Using the ISO-approved JT data format, which supports multi-CAD design content and flexible round-trip supplier data exchange, PLM for Shipbuilding allows shipbuilders to exchange data reliably and flexibly with suppliers and partners, some of whom may use a different authoring tool. As an example, Siemens software provides an open architecture, which eliminates the need for all suppliers to convert to a single CAD system thereby eliminating unnecessary expense and special training for all of the suppliers.

The software also synchronizes supply chain operations by ensuring the right parts are available at the right time. Nichols pegs the cost savings for a shipbuilder who employs a tightly controlled, digitized supply chain at 15% of a vessel's total value.



"Siemens' PLM Software can manage a comprehensive data-base, which includes the 3D models of the structure, systems and compartments, but also the ship system level requirements and relevant design decisions, configuration and change management status … which is crucial over a protracted construction period … as well as process and build procedures. This single source of total insight is available anytime and anywhere and can be accessed in a tablet or other mobile device anywhere in the shipyard."

– Tim Nichols, Director, Siemens Global Marine-Industry Marketing

Building the Ship

Tomorrow's boatbuilding will evolve into something closer to assembly line manufacturing as opposed to the 'industrial revolution' scenes (sometimes) common in some domestic yards today. For example, Bollinger – as reported in the February 2017 edition of ***MarineNews*** – has, with the help of SSI, dipped its toes into robotic welding, something which promises more of an assembly line process for future series-build programs. Ahead of that, Siemens has called for the "digital simulation and optimization of shipbuilding operations and processes." In this way, Siemens' PLM Software can be used by planners and production management to model the flow of material throughout the shipyard and pre-fabrication shops and subsequently to and through final construction to optimize work processes, reduce material lead time, and reduce the time to construct a ship.

The digitalization of ship development provides designers, engineers, suppliers, and production planners the ability to work in parallel with a complete and current representation in 3D models of every system, component and compartment on a ship. Nichols adds, "Now, teams throughout a shipyard can work in parallel with confidence that they are working with latest information that is aligned ship requirements and all regulatory requirements." No longer do shipyard teams in different parts of the yard need to work in 'stovepiped silos.'

And, because avoiding and minimizing 'change orders' in the yard is critical to an on time and on budget delivery, the software suite has built-in workflows that rigorously manage configuration changes by hull number and location. "In at least one program, there were 24,000 changes managed by Siemens PLM Software over one 12-month period for 6,500 engineers, 112 workflows and 31 Integrated Product Teams," said Nichols.

No less important, and as regulations impact the types of equipment required on board, this adds weight to hulls which can ill-afford the loss of space and/or deadweight capacity. The pre-configured shipbuilding catalyst includes best practice guides such as weight and systems requirements management. According to Nichols, Weight management is one of the system level requirements that can be managed in Siemens' PLM Software by component, compartment and/or location.

After the Launch: Ship Service and Support

In the past, shipyards weren't necessarily focused on managing sustainability requirements for their customers. Nor were they necessarily worried about achieving continuous improvement in fleet availability, reliability and overhaul cycle reduction. But that's exactly what the

shipowner of the future will demand. To this end, PLM for Shipbuilding enables shipyards to easily develop and publish all handover documentation included in the vessel specifications and contract.

Helped by PLM Software, fleet owners and repair yards can better manage all maintenance and regulatory reporting requirements, service planning, execution, service processes, and metrics monitoring and reporting in a single environment. And, this will go far beyond the work of the typical 'guarantee engineer.' Nichols adds, "Complete and accurate information to sustain a ship or an entire fleet can reduce repair, maintenance and overhaul cycle times, boost fleet availability and lower total ownership cost." Increasingly, both commercial and government fleets decision makers are now placing equal importance on initial cost and sustainment cost.

Configuration management from Siemens allows shipyards to seamlessly track the configuration of a class of ships or an individual hull number from concept development through production and across the ship's entire operating lifecycle. In essence, this helps to provide greater efficiencies and savings much earlier in a series-build cycle. And, says, Nichols, "This is particularly important when the construction phase can last 4-5 years, the Bill of Material for a ship can exceed more than 1,000,000 parts and changes are continuous throughout the building of a ship."

For large fleet operators, the software can aid the maintenance planning teams to prepare for overhauls and modernizations and track the performance of ships and systems in services.

Looking for the Next Job

Even a busy yard knows that someday, that seemingly fat backlog will evaporate. Siemens aims to give shipyards a leg up on more accurate bid tenders for government and commercial work alike. Nichols explains, "Siemens' PLM Software provides a disciplined foundation to respond to both commercial and government bid tenders including compliance with specific system requirements and regulatory specifications. Moreover, with Siemens' PLM Software retaining the details from successful classes of ships, many systems on future classes of ships need not be re-engineered." Having that archived data in a logically organized digitized format might just be the ticket to your next series-build assignment.

Before, during and long after the next building boom, the shipyard of tomorrow will be involved in how ships are operated; standalone hulls or large fleets alike. Siemens is working to create that reality today.

**All images courtesy Siemens*

DP Training: Expanded Choices and Evolving Methods

Perhaps one the most obscure skill sets in today's rapidly emerging workboat landscape is also arguably its most important. Kongsberg today remains at the cutting edge of DP training and credentialing efforts.

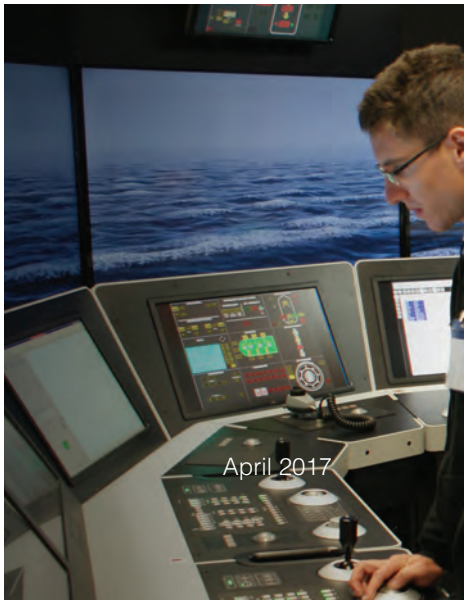
By Joseph Keefe

Not lost in last month's Offshore Service Vessel Dynamic Positioning Authority (OSVDPA) announcement that Kongsberg Maritime's Houston training center had been accredited to conduct OSVDPA dynamic positioning operator (DPO) training courses and assessments was the fact that Kongsberg has been offering DP training for many years. This wasn't Kongsberg first DP training accreditation and probably won't be its last. But, Kongsberg is the first Houston-area center to be accredited by the OSVDPA and that means that mariners and employers alike now have more choices when it comes to where and how mariners can train and eventually become credentialed.

Under the OSVDPA certification system, those wanting to become DPOs must complete two classroom courses, one focused on the theoretical knowledge behind DP operation and the other gaining DP experience via the use of DP simulators. By securing accreditation, Kongsberg can now begin conducting these courses. OSVDPA Executive Director Aaron Smith summed it up best when he said, "We are extremely excited to have Kongsberg seek and secure OSVDPA Accreditation. Kongsberg's expertise and professionalism were very evident through our accreditation process. It is easy to see how Kongsberg has earned a second-to-none reputation throughout the DP and offshore industries, and we're excited to work with them in the near future."

For Kongsberg, the nod from OSVDPA in Houston (soon to be followed for their New Orleans location) was important. That said; there are three training schemes that are currently gaining acceptance in the DP industry, and Kongsberg has experience with all of them. Kongsberg's Houston Training Manager Bryan Hoyem told ***MarineNews*** in March, "The scheme administered by the Nautical Institute has been in place for quite a number of years now and is the most well known. The OSVDPA scheme is another and the third is approved by the DNV. While there are many common elements to the credentialing under each scheme, there are also a number of requirements unique to each and so they each require an in-depth knowledge of the process and verifications required."

The OSVDPA and DNV schemes, for example, have



established procedures that allow someone to transfer in from another scheme. Hoyem says that anyone interested in such a transfer from one scheme to another should research the matter well in advance of the desired course and by working with their preferred training partner.

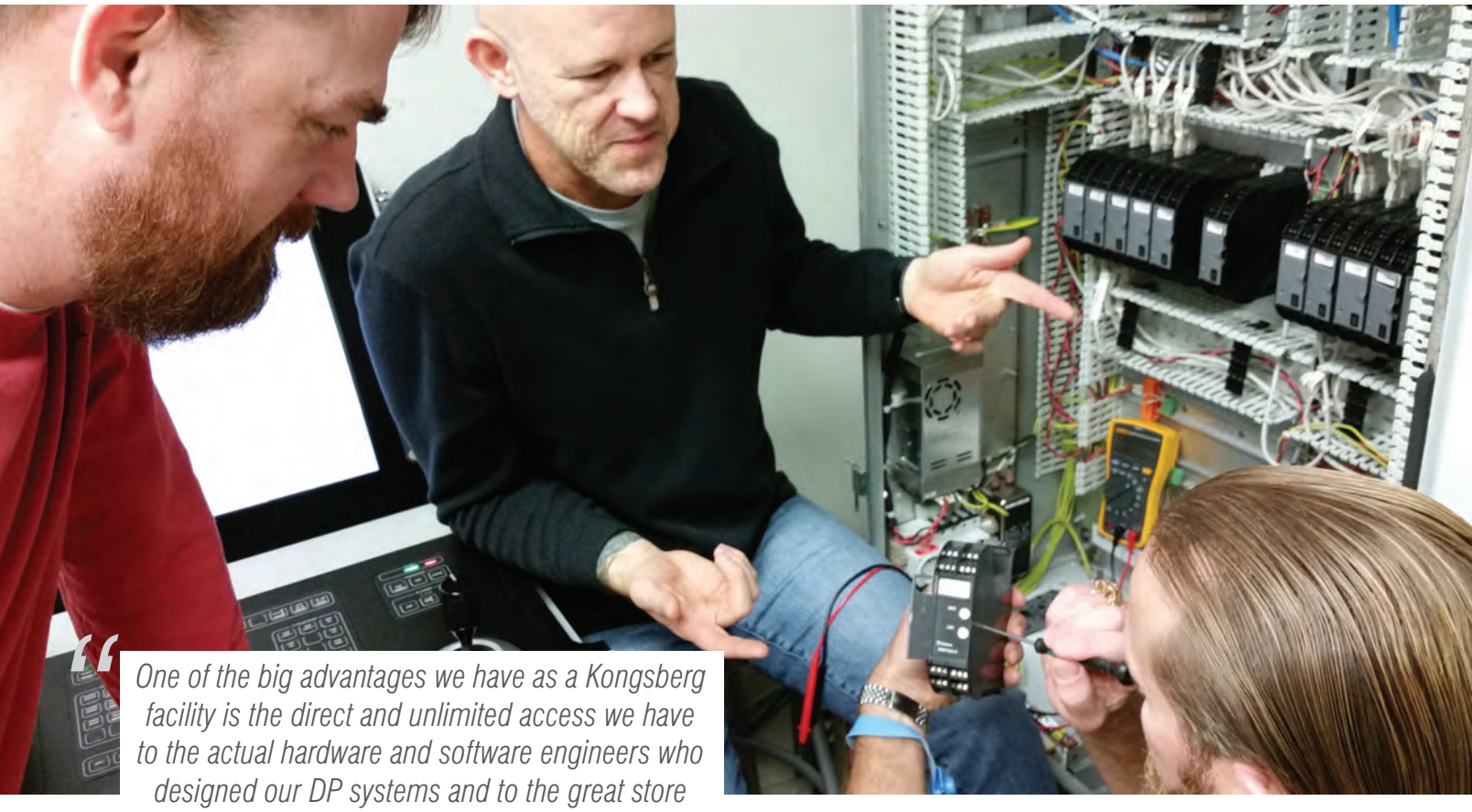
Historically, this area of training and skills has long been murky in terms of greater industry understanding of the equipment, the skills necessary to master that equipment and just as important, who decides who is competent. And today, the U.S. Coast Guard isn't involved with the certification process. Hence, providers like Kongsberg and training scheme facilitators like OSVDPA become that much more important. For its part, Kongsberg operates DP training centers Norway, Aberdeen, Houston, New Orleans and Rio de Janeiro and Singapore.

At the Forefront of DP

Hoyem declined to name specific clients for the purpose of this article, but says that Kongsberg's students come from nearly all sectors of the industry. He added, "Our history in the training of DP Operators began even before there were international standards on the topic and in fact, the program administered by the Nautical Institute was influenced heavily in its creation by Kongsberg. Also, since a high percentage of DP vessels across industry are outfitted with Kongsberg systems, many clients naturally prefer to receive their training directly from Kongsberg Maritime training centers."

Kongsberg has been busy – here and overseas. In Houston alone, the KM Houston Training Center has seen 495 students take the Induction course and 352 students have taken the Simulator course since 2014 alone.

Simulation is maturing quickly on the waterfront and the realism is incredible. DP simulation is a bit different than traditional shiphandling and Kongsberg has its own way of approaching the task. "DP ship handling is fundamentally different than traditional vessel ship handling," says Hoyem, adding, "All the foundational knowledge of laws and good seamanship are still important of course but the very basics of vessel handling are different when you're looking at staying in one position as compared to moving through the water. DP simulator training in many ways, builds upon the set of skills that a person may have already attained from traditional shiphandling but also adds knowledge of the DP system itself which is unique in many ways. One of the big advantages we have as a Kongsberg facility is the direct and unlimited access we have to the actual hardware and software engineers who designed our DP systems and to the great store of information and ex-



> *One of the big advantages we have as a Kongsberg facility is the direct and unlimited access we have to the actual hardware and software engineers who designed our DP systems and to the great store of information and experience our team of service engineers have accumulated through the years. I think it's easy to say that no one can teach about Kongsberg systems better than Kongsberg.*
>
> **– Bryan Hoyem, Kongsberg's Houston Training Manager**

perience our team of service engineers have accumulated through the years. I think it's easy to say that no one can teach about Kongsberg systems better than Kongsberg."

OSVDPA: another dimension to DP training

Although not the first DP certification body to the party, what OSVDPA has accomplished since its inception in 2014 is impressive. Led by a Board comprised of 12 Directors representing the vessel operator community, DP training centers, and DP manufacturers, the OSVDPA scheme has wide buy-in from industry. With Hornbeck Offshore Services, Otto Candies, Kongsberg Maritime, Tidewater Marine, and Harvey Gulf International Marine – just to name a few – all involved in shaping the direction of OSVDPA, the quality of that backing speaks for itself.

According to Hoyem, the OSVDPA certification was important for Kongsberg because OSVDPA has developed a very good training scheme that some companies and vessel owners like to utilize to ensure their DPOs are capable in performing their roles as DPOs. "As a training center, our focus is always on providing quality training to improve safety and efficiency of operations offshore. It was a natural choice for us to seek accreditation by the OSVDPA so that we could provide those classes and that certification option to the companies and DPOs who already look to us for their training needs." And those mariners and operators now comprise a wide(r) swath of DP stakeholders.

At its heart, the OSVDPA scheme has a documented rigorous set of criteria that they audit as part of their accreditation process. There are defined minimum competencies that the course curriculum is verified to include. Also, there are qualifications of the facility, the simulators used, as well as the instructors to ensure that trainees, throughout the program, receive all the desired information in the most effective way.

While the majority of DP vessels are classed because it helps the vessel owner with other aspects such as insurance and bidding for jobs as well as satisfying safety and capability demands for any particular job, it is possible that a vessel has a complete DP installation and its operator has not sought to get classed by a classification society. In this case, the vessel owner may re-

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– OSVDPA Executive Director Aaron Smith

quest approval of their vessel from the OSVDPA (or relevant scheme authority) and will work with the OSVDPA to verify the vessel meets all the requirements of a DP vessel.

Ultimately, it is very important for a trainee to know if their vessel is classed so that they are gaining DP sea time towards their DPO training and certificate. For example, if a vessel is not classed by an IACS society, a mariner can reach out to the OSVDPA to ask if the vessel is on the approved unclassified vessel list. Beyond this, the type of vessel on which the DP sea time is attained will dictate certain limitations on the DPO certificate they ultimately receive. There are many aspects to the redundancy concept incorporated in class 2 and 3 vessels and a trainee without experience on those class of vessels may be missing some of the related knowledge to maximize safety.

The Kongsberg Way

Long involved in the DP training game, Kongsberg is also committed to the process for the long haul. To that end, Hoyem insists, "I think an important part of the training and credentialing aspect of a DPO's professional progression is that the DPO certificate is viewed by some as the culmination of everything needed to be good a DPO. While our goal as a training center is to prepare DPOs to the greatest extent we possibly can, the certificate is really the beginning of a DPOs career. We like to equate it to someone getting their driver's license. From that point, they continue to work as a DPO in earnest and gain the valuable experience that will get logged into their logbooks and be listed on their resumes."

As employers come around to this way of thinking, they also seek training specific to their operations or their vessels. DPOs that get this added insight to their systems and situations stand to gain more knowledge and better experience during their time on board. But, there's more to it than that, says Hoyem. "If all goes well during a DPO's time on board, they do not get the experience of things going wrong. This means that the amount of time accumulated as experience may not be the best preparation for the more unlikely scenarios in which a well prepared DPO can make a world of difference."

The only way to safely gain this type of experience, insists Hoyem, is with training in simulators. And where better to get that training than in a facility that can train to any of three internationally recognized schemes – now to include the OSVDPA scheme – and on equipment that a large percentage of the world's DP-equipped vessels already carry on board? It's a 'safe' bet that this, in a nutshell, embodies the 'Kongsberg way.'

www.km.kongsberg.com / www.OSVDPA.org

HUDSON RIVER: A BATTLE FOR ANCHORAGE GROUNDS GOES VIRAL

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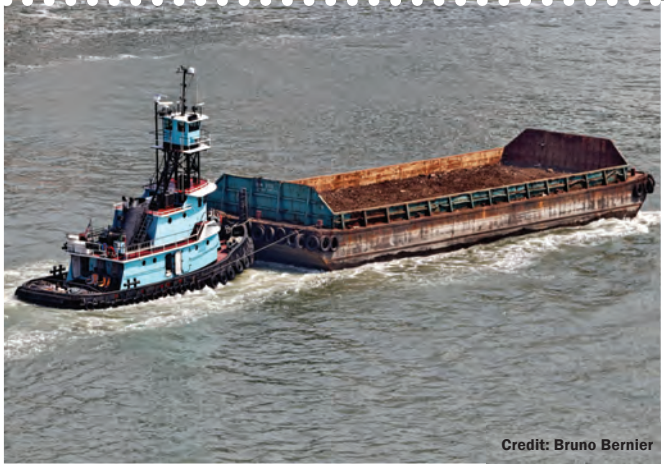

Credit: Bruno Bernier

Where commercial marine and safety considerations allide with recreational and other peripheral agendas, the discussion can sometimes be contentious. One such example of this reality is now playing out on the Hudson River in New York.

By Tom Ewing

On June 9, 2016, the U.S. Coast Guard published a three-page Federal Register notice, seeking public comments on a proposal suggesting new anchorage grounds in the Hudson River, from Yonkers to Kingston, NY. Officially, this was an advance notice of proposed rulemaking; in other words, an action the Coast Guard was more or less thinking about, but, still an idea sufficiently developed to check public interest and concern.

In fact, that three-page notice produced a landslide of concern, much of it critical. When the public comment period closed in December, the CG had received over 10,000 comments. U.S. Rep. Sean Patrick Maloney (NY-18), whose district straddles the Hudson, halfway between New York City and Albany, sent a file with over 400 pages of constituents' comments.

WHAT'S THE BIG DEAL?

Anchorage grounds are not usually contentious. And the river sections referenced within the FR notice have long been


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used as safe harbors, although never formally designated as such. In fact, reports of unauthorized vessel 'parking' are what started this complex mix of issues. In 2015, in response to those reports, CG Section New York, issued a mariners' Bulletin reminding captains that anchorage is only allowed in authorized, federally designated locations.

That Bulletin prompted a January, 2016, request from The Maritime Association of the Port of New York/New Jersey Tug & Barge Committee, the Hudson River Port Pilot's Association and the American Waterways Operators (AWO). The appeal: *we need additional anchorage grounds, since just one exists within the 109 nautical miles from Yonkers to the Port of Albany.* Mariners suggested the customary anchorage sites already in use: 10 sites, providing for up to 43 vessels. The Coast Guard carried these suggestions forward.

For mariners, this was about safety, for crews and vessels and, indeed, the river itself. For critics, the CG's proposal was seen as a cave-in, allowing behind the scenes self-interest to risk an environmental tipping-point in conflict with the broader public interest. Again, anchorage grounds are mostly ho-hum topics. The Hudson River has been an industrial, commercial river for centuries. What happened? Why did a seemingly straightforward proposal go viral?

NIMBY

"Not-in-My-Backyard" NIMBY-ism accounts for some opposition. Critics worry that new anchorage sites mean inevitable increases in river traffic and attendant risks, from spills to accidents to concerns about public drinking water. Some people comment that barge and river traffic are part of a maritime industrial economy that New York should let decline, not seek to advance. Some critics reference "view-sheds" and how barges and tanker operations detract from the value of a more pastoral river. But the mariners themselves introduced the real hot-button issues: oil, particularly, notorious Bakken oil.

In their January, 2016 letter, the Tug & Barge Committee predicted that "trade will increase on the Hudson River significantly over the next few years." Why? Because of ever-increasing amounts of Bakken oil, arriving via rail at the Port of Albany. Stakeholders go on to say, "the great port of Albany (will be) a leading export port for American Bakken Crude Oil and Ethanol." That's potentially unsettling stuff, especially for a general public which traditionally has little sense of the importance of commercial marine commerce.

The issue of oil – its transport, possible spills, and the qualities of Bakken crude – came to dominate and link opponents' concerns. Critics charged that the River's 43 new anchoring zones, all but one listed for "long term usage", could become a logistical tool for oil markets. Rather than just transport significantly increasing quantities of oil, opponents asked whether the new anchoring sites might be used to park and store oil, either waiting for distant terminals to open-up or perhaps awaiting price increases to control when the oil finally moved.

COMMERCIAL STAKEHOLDERS SPEAK UP

Edward Kelly is Executive Director of the Maritime Association of the Port of NY/NJ. Kelly asserts that fears about oil shipments are deliberately exaggerated, since barge transport is the safest way to move crude. He says there are groups who need scare tactics to advance other agendas; climate change, for example. Regarding oil-barge storage, Kelly said that Bakken is a relatively expensive crude; it's not in constant demand from timely price signals. Most importantly, the costs of storing oil on a barge, with a full crew and a tug constantly on duty, completely undercut any economic benefits. For Kelly, the anchorage, first and foremost, is about safety. But he concedes, "Unfortunately, the people in our Tug & Barge Committee possibly 'oversold' the movement of southbound crude oil."

Interestingly, a closer look at the Port of Albany's operations shows that the Port has not handled any crude oil for the last two years. Within Port facilities, there haven't been any moves towards intermodal crude. Some facilities outside the Port have changed their oil operations but much of that work involved safety and environmental upgrades, not dramatic increases in shipments.

A second energy issue bedevils this topic: the Champlain Hudson Power Express (CHPE) – a proposal to build a 320kV electric transmission cable from Quebec to New York City. Cables, of course, commonly cross underneath rivers. The CHPE cable, however, will run length-wise below the Hudson, for 88 miles, mostly buried but held down by cement "blankets" in sections of impermeable bedrock. This is a game-changer where timing is concerned. Mariners need decisions about safety zones now, not after a submerged cable likely ends the discussion.

The CHPE project reportedly links to hydro or maybe nuclear generation – whichever, a rumor of non-carbon, non-fossil electricity. For many anchorage grounds opponents, this (possibly) green power source gives it a pass, gives it precedence over shipments of dirty oil. Green power is the future, asserts this bias; oil is the fading economy. Therefore, many commenters assert, if the Hudson must be impacted, a so-called green power project delivers greater public benefit than a move with links to oil.

Ironically, anchorage grounds critics don't usually include that the CHPE project is a private project. It was not advanced by public sector or public utility commission experts, a policy shortcoming cited by many who oppose new anchorage grounds. CHPE is a merchant project seeking to sell power within New York City's electricity market. In reality, CHPE needs the Hudson for energy transport even more than the mariners need anchorage grounds to help with possible energy transport. Without a private right-of-way through the Hudson River, CHPE stops.

CHPE's permit was approved by the Army Corps in 2015. It is a difficult permit, with demanding terms and conditions, including a "navigation risk assessment" and an "anchor snag manual," neither of which is finished. The permit's initial expiration was 2019, now extended to 2021. In-water work has not started. How that assessment has progressed and where it stands now is difficult to determine.

CAN THIS PROPOSAL BE SAVED?

LT Karen Love Kutkiewicz is the Public Affairs Officer with the First Coast Guard District based in Boston. She said CG officials were surprised that the anchorage proposal went viral. But she adds, "We deliberately sought that wide comment last June. We are aiming for a transparent federal government."

Kutkiewicz said that federal law requires an environmental impact statement. For the Coast Guard, core issues include safety, the environment and the fact that this is a request from a private sector group. Kutkiewicz was not aware of the CHPE cable project and parallel issues, such as the anchor snag manual, for example. She forwarded CHPE questions to a colleague.

Edward Kelly, with the Maritime Association, remains confident that the Coast Guard will vet the matter deliberatively and fairly. He noted that many of the 10,000 comments are just copied, duplicative remarks. And he said, "They [the Coast Guard] are not in charge of converting America to non-fossil fuels." Kelly expects some sort of preliminary finding by April, with public hearings likely in the fall. It's possible that mariners won't get everything they asked for, but Kelly is confident that this will be a set of decisions based on issues pertaining to safe transportation, the central issue for all anchorage grounds.

As a minimum, the process is worth watching closely, as it represents a perfect example of how commercial marine traffic coexists – hopefully – with recreational and non-maritime interests, on the nation's waterways and in its many ports.

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

Point-of-Use Welding Control

Shipyards can gain a competitive advantage with improved technology.

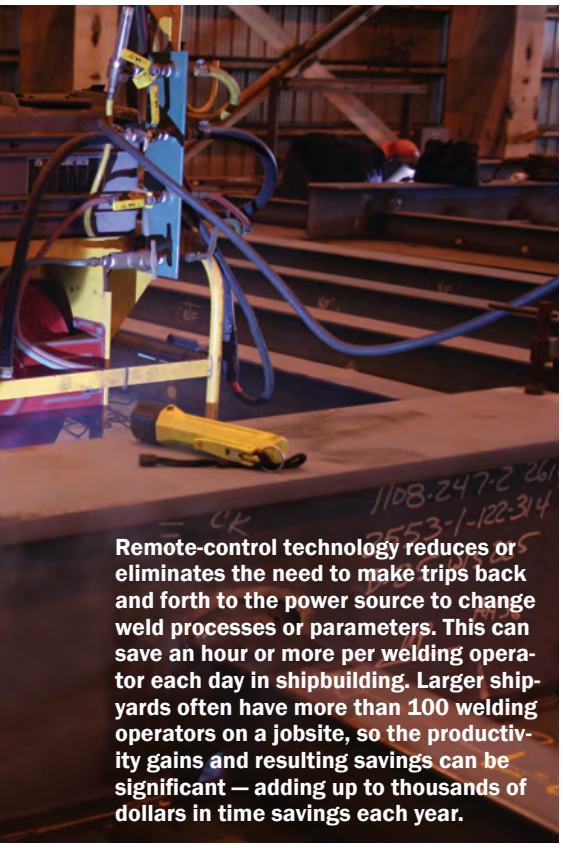
By Clay Byron, Miller Electric Mfg. Co.

As competition for contracts intensifies in the shipbuilding and ship repair industry, shipyards are looking for equipment and technologies that give them a competitive edge. Shipyards are being asked to provide lower costs and meet increasing quality requirements while also delivering vessels on tighter schedules. Technology is one solution to help them meet these customer demands.

In the shipbuilding welding operation, point-of-use controls can save up to an hour or more every day – per welding operator. These productivity gains can have a significant impact on the bottom line. The resulting savings translate into a quick return on investment for shipbuilding operations – sometimes within months – that justifies the conversion to remote-control technology.

Advancements in remote-control welding technology make it more beneficial than ever to implement this solution, especially in industries such as shipbuilding that often involve large vessel erection areas, shop environments

One advanced remote-control solution on the market, Arc-Reach technology from Miller Electric Mfg. Co., provides these capabilities utilizing only the existing weld cables and without the need for a separate control cable. Eliminating the control cable reduces the time and money that shipyards spend on maintenance, troubleshooting and repair of these cables.



Remote-control technology reduces or eliminates the need to make trips back and forth to the power source to change weld processes or parameters. This can save an hour or more per welding operator each day in shipbuilding. Larger shipyards often have more than 100 welding operators on a jobsite, so the productivity gains and resulting savings can be significant — adding up to thousands of dollars in time savings each year.

and drydocks where there is a great distance between the power source and the location of the weld.

The ability for the operator to have complete remote control of welding processes and parameters at the point of the weld helps significantly improve productivity and safety, while also providing benefits that help operations meet critical quality requirements.

Complete Control at the Weld

Many North American shipyards have converted to flux-cored arc welding (FCAW) or gas metal arc welding (GMAW) processes for much of their welding, though shielded metal arc welding (SMAW) is still used for some applications, especially in ship repair. In some cases, such as pipe welding, it's common to use a SMAW root pass and then switch to FCAW for the fill and cap passes. Gouging is also a frequently used process in shipbuilding and repair applications. Having the ability to

switch processes at the point of the work saves time and is extremely beneficial.

All of these processes can be controlled by the operator at the point of the weld with remote-control welding technology. One advanced remote-control solution on the market, ArcReach technology from Miller Electric Mfg. Co., provides these capabilities utilizing only the existing weld cables and without the need for a separate control cable. Eliminating the control cable reduces the time and money that shipyards spend on maintenance, troubleshooting and expensive cable repairs. Eliminating time-consuming cable repairs and maintenance also helps reduce the overall cost of downtime related to these repairs for a shipyard.

The system provides operators will full control of weld settings and parameters at the weld joint — at the wire feeder when using wire and advanced wire processes, and with a remote when using SMAW and gas tungsten arc welding (GTAW) processes.

This reduces or even eliminates the need to walk back and forth to the power source — often up and down ladders or scaffolding — to make welding adjustments. Not only does this deliver significant benefits for productivity, but it also helps improve operator safety by reducing the risk for slips, trips and falls.

In addition, because welding operators can easily make the proper adjustments to produce the best results, it eliminates the need to "get by" with less-than-optimal welding parameters — resulting in improved weld quality as well as productivity.

Saving an hour each day

For many shipbuilding operations, vessel fabrication typically begins in a shop environment before moving outside to the shipyard for completion. In both of these environments, a welding operator could be several hundred feet away from the power source. The point of the weld may be in a difficult-to-reach area of the vessel, or the power source could be on a mezzanine or gantry.

Without remote-control technology, an operator would need to walk back and forth from the power source to make a change to the welding process or to welding parameters. Time studies show that it's common for welding operators to change parameters or processes four to five times per day, and often more than that. Each trip to the power source could take 10 to 15 minutes or more, and involve climbing ladders or stairs, or climbing through manholes.

Reducing or eliminating the need to make these trips to the power source can save an hour or more per welding operator each day in shipbuilding operations. Larger shipyards often have more than 100 welding operators on a jobsite, so the productivity gains and resulting savings can be significant – adding up to thousands of dollars in time savings each year and justifying the equipment investment in remote-control technology.

Choosing a remote-control solution that does not require a control cable also eliminates the downtime and maintenance cost associated with control cords. This cost can be significant and is often not accounted for.

Reducing Jobsite Safety Risk

Slips, trips and falls are among the most common causes of jobsite injuries. Falls were the leading cause of worker deaths in the construction industry in 2015, according to the Occupational Safety and Health Admin-

istration. Most shipyards are sizable operations, and there can be numerous obstacles between the point of work and the location of the power source – sometimes up to 300 or 400 feet away.

Reducing exposure to slip, trip and fall hazards by decreasing the number of trips a welding operator must make to the power source on an expansive jobsite plays an important role in improving safety – and toward reaching the goal for many contractors and shipyards of having zero on-the-job injuries.

Improving safety can also have a financial impact for the shipyard by reducing the cost of worker downtime, insurance or workers' compensation payments when employees are injured on the job.

More Control for Improved Weld Quality

The standards and codes for vessel construction are increasing, driven by safety requirements, regulatory requirements, market changes and other factors. Shipyards must stay ahead of these increasing quality demands.

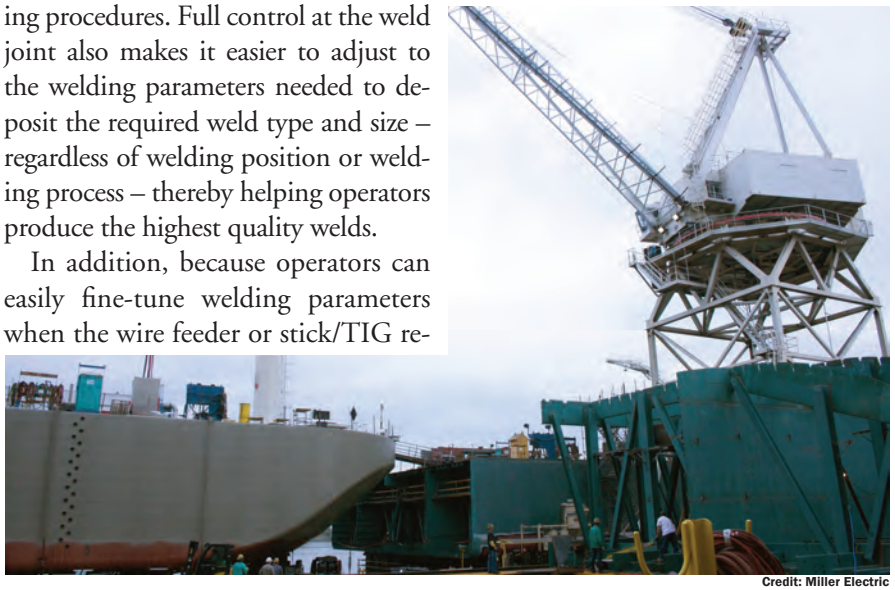
With point-of-use control technology, welding operators can see the exact voltage and amperage and easily adjust welding parameters as needed to ensure they are staying within specified welding procedures. Full control at the weld joint also makes it easier to adjust to the welding parameters needed to deposit the required weld type and size – regardless of welding position or welding process – thereby helping operators produce the highest quality welds.

In addition, because operators can easily fine-tune welding parameters when the wire feeder or stick/TIG remote is nearby, it's less likely that they will "make do" with less-than-optimal parameters. Operators can avoid making compromises with wire stickout, travel speeds and position that could lead to weld defects or rework. And because voltage-sensing wire feeders display the actual voltage and current measured at the arc, the welder can compare the real-time reading to weld-setting presets. This feature lets operators continually monitor parameters to ensure the machine delivers the appropriate power to the arc for more consistent weld quality.

A Solution to Save Time & Money

The maritime industry is vital to security and commerce throughout the world. As competition for contracts intensifies in the industry, shipyards are seeking better tools and technologies to help them improve productivity, safety and quality.

The investment in remote-control welding technology can quickly pay off thanks to significant productivity gains and time savings. In an increasingly competitive industry, such time savings can be critical for a company — helping them complete vessels faster without compromising quality or safety.



Credit: Miller Electric

EAL's Rise Up on Deck

The next critical area of consideration for the use of Environmentally Acceptable Lubricants is on Deck. What's leaking into the water from your cranes and winches?

By George Cook, Senior Applications Project Manager, RSC Bio Solutions

Vessel fleets face an increasing number of environmentally-focused regulations, adding complexity to their operations and creating urgency around compliance. These regulatory requirements, however, do not offset an operator's need for products that perform consistently well. With the right Environmentally Acceptable Lubricants (EALs), marine companies can see performance benefits that can save time and money, while further protecting the environments in which they operate. Nowhere is that important today than on deck.

EALs for Deck Machinery & Cranes

While the primary focus of environmental regulations has been the biggest discharge contributors—stern tubes—and other equipment such as stabilizers, thrusters, rudders, propellers and hydraulic systems, discharges from deck machinery and cranes deserve equal attention. According to a recent research study by Dagmar Schmidt Etkin, Principal Consultant at Environmental Research Consulting, occasional spills or leaks from this type of equipment are easily evident because they result in a sheen on the water surface. As Etkin points out, the oil that is used on deck-based machinery can enter the water through rain runoff or during deck washing activities.

Based on the research findings, it is estimated that about 10% of the oil enters the water through runoff or washoff. The rest would adhere to the deck and equipment. Etkin estimates that bulk carriers and container ships have the highest inputs of deck machinery-sourced discharges and hydraulic deck machinery is the largest source of lubricating oil discharge.

All operators want to avoid fines for improper deck washdowns. While options include holding or treating all deck runoff, it is not always feasible or safe for the crew or the environment. In order to meet operational needs, as well as regulatory demands, operators would be wise to seek high performing products that won't harm coating surfaces, people or the marine environment.

A Conscious Change via Conversion to EALs

One operator – Seaspan Marine – considered a number of factors before ultimately selecting RSC EnviroLogic products. The products are fully compliant with the U.S. Environmental Protection Agency's (EPA) EAL requirements and, as it turned out, compatible with a majority of the systems that Seaspan Marine would convert. Additionally, a minimal amount of cleaning and flushing of the existing systems is required in order to introduce the RSC EnviroLogic EALs. With the conversion of a number of older vessels, the ease and timeliness of that conversion was very important.

As these products are critical to marine operations, distribution plays a large part in ensuring that quality, compliant products are available. Seaspan Marine needed products that would be supported in a location with a readily available supply. RSC Bio Solutions' products were available in Seattle and were likewise offered by regional, national and multi-national distributors.

"Like all marine operators, we're fairly conservative, and we don't change easily with systems that are already operating fine to something that may or may not change the performance parameters," said John Fowlis, Vice President of Fleet Maintenance at Seaspan Marine. He adds, "With a boat, you can't just park it on the side of the road and call somebody. The crew onboard is relying on that machinery for the safe operation of their vessel, and so experimentation has to come in a very measured kind of way."

The quality of performance is always a concern when switching to a new product, but Seaspan Marine has seen equal or superior performance from the EALs compared to petroleum-based products. In fact, they've found that the hydraulic system of the log loader was actually running cooler with RSC Bio Solutions' product, which prolongs the life of the machinery in this demanding application. Based on the quality performance of the loader, Seaspan Marine is now looking to expand the use of RSC Bio Solutions' hydraulic oil into deck-mounted cranes, anchors and other on-ship machinery applications.

EALs: Confusion in the Marketplace

There's no shortage of conflicting information in the marketplace about EALs. A lack of agreed upon definition is one contributing factor, as is lack of awareness of the four different types of EALs that are available. Inconsistent performance claims from manufacturers have also led to the confusion. Let's clarify a few myths:

MYTH: All EALs are the same.

TRUTH: There are four classifications of EALs Recognized by the U.S. Environmental Protection Agency (EPA) and the International Organization for Standardization (ISO) per Standard 6743/4:

- ***Hydraulic Environmental Triglycerides (HETG)***
- ***Hydraulic Environmental Polyalkylene Glycols (HEPG)***
- ***Hydraulic Environmental Synthetic Esters (HEES)***
- ***Hydraulic Environmental Polyalphaolefins & related hydrocarbon products (HEPR)***

That's all well and good – but what does all of that mean? Chart (a.) to the right provides some guidance.

EALs are defined by the EPA as offering these three characteristics. First, they must be "biodegradable" – biodegrading into carbon dioxide and water by ≥ 60% or more within 28 days (according to OECD 301B or ASTM D7373 methods). Next, they must be "minimally toxic," causing only a light impact on the aquatic environment (LC50> 100mg/L for lubricants and LC50>1000mg/L). Lastly, they are "not bioaccumulative," and must have a low propensity to bioaccumulate in organisms. Additionally, the Clean Water Act of 1972 mentions discharges of oils should not exhibit any visible 'sheen' on the water's surface otherwise it is considered a pollutant (according to CFR 40 Part 435 A). All RSC FUTERRA and EnviroLogic products (including HEPR and HETG types) are readily biodegradable.

MYTH: EALs are not compatible with seals or petroleum-based lubricants.

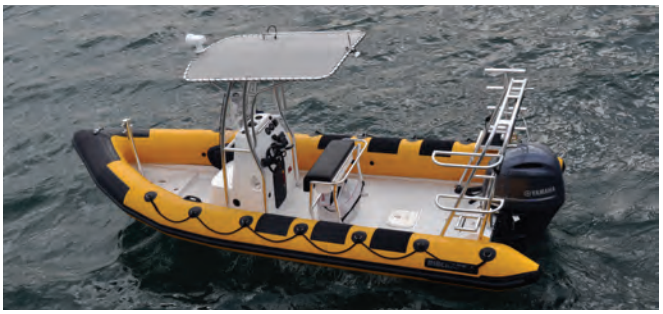
TRUTH: RSC FUTERRA and EnviroLogic products are compatible with seals and petroleum-based fluids, allowing operators to use the seal that is the best choice for their specific needs.

Clean (& High Performance) Sailing

EALs are not only mandated by the EPA, they perform equivalent or better than petroleum-based lubricants. EALs prevent wear and tear on parts, reduce friction (for improved performance), reduce heat and prevent corrosion. EALs don't eliminate spill occurrence and the need to report and clean up a spill or discharge, but they are safer for employees to handle and have less impact on the environment. And, after all – when you combine safety and compliance with increased performance – isn't that what we're all looking for?

Classification	Advantages	Disadvantages
HETG	High viscosity index	Susceptible to oxidation under high temp/PSI
	Very good wear properties	More prone to hydrolysis
	Compatible w/most seals, hoses	Shorter lifespan than other EALs
HEPG	Designed to be water soluble; but solubility may increase toxicity.	Compatibility challenges w/seals, hoses, paints & varnishes.
	Excellent high/low temp. viscosity performance	Incompatible with mineral oils and other EALs
	Fire resistant properties	Typically not derived from renewable resource
HEES	Delivers high performance	Can be prone to hydrolysis.
	Good thermal & oxidation stability	
	Good corrosion prevention, hose compatibility	
	Extended fluid life	
HEPR	Durable & offer extended wear protection	Typically not derived from renewables, although RSC FUTERRA is the first & only EAL from a renewable hydrocarbon.
	Extended fluid life	
	Broad temperature range performance	
	Excellent thermal and hydrolytic stability	
	Excellent seal compatibility	
	Excellent water separation characteristics	
	Good corrosion protection & oxidation stability	

RIBCRAFT Delivers Patrol Boat to Pender County Sheriffs



Located in southeastern North Carolina, Pender County Sheriff formed a joint venture with the County Rescue Squad to provide on water enforcement and rescue operations during the summer months. Their new 21' RIBCRAFT 6.5 meets the county's multifunctional requirements and greatly expands their on water response capabilities. The 6.5 features an innovative stokes basket system with an antenna arch and integrated dive ladder, making it ideal for any search and rescue mission. Powered by 175HP Yamaha outboard, the RIBCRAFT 6.5 will provide unparalleled safety and unsurpassed performance. Extremely durable, stable, and reliable, RIBCRAFT RIBs with their heavy-duty inflatable tube and deep V hull are an excellent platform for law enforcement, search and rescue, and marine interdiction.

LOA: 21'5"	Internal Deck Length: 16'4"	Dead rise Aft: 25o
Beam: 8'5"	Internal Beam on Deck: 5'6"	Max. Capacity: 12
Draft: 16"	Weight (W/O Engine): 1,365 LBS	Dead Rise FWD: 44o
MAX HP: 180	Max Speed: 50 MPH	Tube Diameter: 20"

Moose Boats wins CAT Crew Boats Deal

Moose Boats has been awarded a contract for the construction of multiple 75-foot semi-displacement USCG Subchapter-T passenger catamarans for Westar Marine Services in San Francisco, CA. The first vessel will commence production in the spring of 2017. Twin Volvo D13 turbo diesel engines with Volvo IPS3 drives will provide efficient propulsion for the aluminum catamarans achieving a service speed of 25 knots and exceptional close quarters maneuverability. Engine, steering and joystick maneuvering controls in both the raised pilothouse and the upper level aft steering station will provide captains with optimal visibility for bow and stern operations. The new 75' catamaran crew boats will be capable of carrying 28 passengers and 20,000 lbs of cargo to and from anchorages and piers

within San Francisco Bay, San Pablo Bay and the Sacramento River Delta as well as offshore. Incat Crowther in Lafayette, Louisiana will provide naval architecture services for the final design and USCG Subchapter-T compliance.

New Tug for Vane Brothers

Vane Brothers has taken delivery of Fishing Creek, the 13th Maryland-built tugboat to join the Baltimore-based company's expanding fleet in the last 10 years. Designed by Frank Basile, P.E., of Entech Designs, LLC, Fishing Creek is the latest of 20 Sassafras Class tugboats contracted through Chesapeake Shipbuilding of Salisbury, Md. Construction began in 2007 on the first-in-series tugboat Sassafras, which, when delivered to Vane Brothers in 2008, was considered to be the first tugboat constructed in Maryland in more than 30 years and the first ocean-service tug built in the state in more than a half century. Measuring 94 feet long and 32 feet wide with a hull depth of 13 feet, the Fishing Creek is similar in most respects to the previous 12 tugboats built for Vane as part of the Chesapeake Shipbuilding contract. The vessel is equipped with twin Caterpillar (CAT) 3512 Tier 3 main engines that provide a combined 3,000 horsepower, and operates with a Jon-Rie Series 500 hydraulic towing winch. Soft-core panels and top-line accoutrements are used throughout, offering the crew a quiet, comfortable living environment.

Seaspan Adds Five to C-Suite Team


Hale


Lyle


Pettigrew


Roth


Thomas

Steve Roth has been promoted to President of Seaspan Ferries Corporation (SFC). He is also responsible for ensuring that customer service expectations are met or exceeded while ensuring the safety of SFC's vessels, terminals and people. Steve joins Seaspan's Executive Leadership Team and will participate in establishing Seaspan's overall strategy and direction. **Paul Thomas** has been promoted to Senior Vice President and General Manager – Vancouver Shipyards (VSY). Paul will continue to contribute to Seaspan's Senior Leadership Team and will have overall accountability for VSY operations, engineering, project planning, performance, execution, profitability and client satisfaction. The promotion of **John Petticrew** to Vice President, Engineering was also announced. John serves on Seaspan's Senior Leadership Team and is accountable for engineering and design. Separately, **Andy Hale** has been promoted to the position of Vice President – Program Delivery where he is responsible for the execution and delivery of shipbuilding contracts and programs. **John Lyle** has been hired as Vice President – Operations. John is responsible for the oversight and direction of all operations, manufacturing, ship construction, performance improvement and Accuracy/Quality control in support of new vessel construction.


Thomassen


Koza


Petrea


Chao

Global Maritime Appoints Americas Regional Manager

Global Maritime Consultancy & Engineering has appointed **Espen Thomassen** as Regional Manager for the Americas. Espen will lead Global Maritime's involvement in providing Sub Chapter M compliance services to inland towing vessels. Espen joined Global Maritime in 2012 as the company's youngest-ever marine advisor at only 23 years of age.

Lumitec Adds Koza to Sales Team

Lumitec announced the appointment of **Jim Koza** as Director of Sale at their R&D/manufacturing headquarters in Delray Beach, Florida. Jim brings more than 20 years of sales experience in the manufacturing and distribution sectors. Prior to joining Lumitec Jim held a National Director of Sales position at Chrome Capital.

Safety Components Grows Management Team

Safety Components named **Ana-Maria Petrea** merchandise planning manager. Petrea will manage planning for Safety Components' rapidly growing product lines. Prior to her new position, Petrea worked as a forecast analyst at Toronto-based Grand & Toy. She has a Bachelor of Science in textile engineering.

DOT Secretary Chao Welcomes Liberty Ship to MSP

U.S. Department of Transportation Secretary **Elaine L. Chao** welcomed the newest vessel to the Maritime Security Program (MSP) at Beaumont, Texas. Renamed the M/V Liberty Passion, it is the third ship owned by Liberty Global Logistics to join the MSP fleet. "Today we are celebrating a public-private partnership that is strengthening America's Merchant Marine, as well as America's Armed Forces," said Chao. Built in 2016, the vessel adds more than 165,000 square feet of militarily useful deck area into U.S. sealift service. Managed by the Maritime Administration, MSP guarantees access to commercial sealift and the intermodal capabilities necessary to meet U.S. wartime requirements.

Trojan Battery Appoints Taylor SVP, Chief Human Resources Officer

Trojan Battery has named **Phillip Taylor** as senior vice president, and chief human resources (HR) officer to lead the company's global workforce of more than 1,000 employees. Taylor brings over 30 years of experience to this position. Taylor holds a BA in economics from Newcastle Upon Tyne Polytechnic, as well as a postgraduate diploma in personnel management from Teesside University Management School.

VT Halter Names Socha SVP of Business Development

VT Halter Marine announced the appointment of **Robert A. Socha** as Senior Vice President of Business Development and Estimating. Robert brings to the position deep industry knowledge of the offshore and inland

Seaspan Adds Five to C-Suite Team


DeVivo


Fretz


Griffin


Lionberger


Seipel


Treese

RSC Bio Solutions has announced a new market-oriented organizational structure with two focused teams around the marine and land markets. At the same time, the firm welcomed Damian Seipel in the role of account executive. Seipel has over 16 years of experience working in the chemicals and lubricants industry and has a BS in business administration degree from Arizona State University. **Chris Griffin** and **Mark Fretz** join RSC Bio Solutions as business development managers. Griffin brings 20 years of experience with companies such as Allied Signal, Honeywell, DSM Dyneema and Celanese. He has a BA in psychology and MBA from the College of William & Mary. Fretz has worked in chemical and related industries for the past 17 years and has a BS in biochemistry from Purdue University, along with a MBA from UMass. **Paul Treese** has been hired as regional sales manager. He brings over 25 years of experience in technical sales and sales management, and has a BS in business administration degree from Penn State University. **Lauren Lionberger** joins the team as global commercial director for the marine market. Lionberger brings experience in oil and gas and lubricants markets. She has a BS from Baylor University. **Paul DeVivo** joins the team as an independent strategic


Taylor


Socha


Hatherley


Hubert

Navico Director Named to NMEA BoD

Navico announced that **Sean Hatherley** has been named to the board of directors of the National Marine Electronics Association (NMEA). NMEA board members are appointed to a three-year term where they promote NMEA strategies. Hatherley has been sales director at Navico since 2014, and has an electronics engineering degree and an extensive background in marine electronics sales and support.

BCGP Names Huberthas as Director of Sales

Jeff Hubert has joined Brunswick Commercial & Government Products in 2016, and has been serving as the company's regional sales manager for the Eastern United States. Jeff will be responsible for product development initiatives and worldwide business development. Recently retired as Lt. Colonel of the Florida Fish and Wildlife Conservation Commission, Jeff is a graduate of the FBI National Academy and has 30 years of law enforcement experience.

St. Louis Regional Freightway, Port of New Orleans Sign MoU

The Board of Commissioners of the Port of New Orleans and the St. Louis Regional Freightway have entered into a Memorandum of Understanding (MOU) to exchange market and operational information to grow trade and build upon existing and new business relationships between the two regional ports. The agreement also calls for joint marketing efforts and collaboration, leveraging the intermodal connectivity between the Port of New Orleans and the St. Louis region. The MOU was signed by **Brandy Christian** and representatives of the St. Louis Regional Freightway, an enterprise of Bi-State Development (BSD).

Berger Appointed to Port of New Orleans Board

Gov. John Bel Edwards appointed **Darryl D. Berger** to the Board of Commissioners of the Port of New Orleans. Berger will serve a five-year term, succeeding Scott Cooper on the seven-member board. Berger is President of The Berger Company which he founded in 1972 and is based in New Orleans. Berger earned his bachelor's degree from Vanderbilt University and his law degree from Tulane University.

Inland Marine Service adds Johnson to Management Team

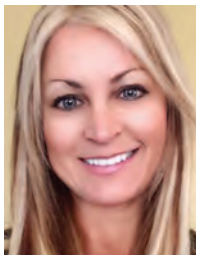
Inland Marine Service announced the hiring of **Lori Johnson**, who will join the IMS team as Business Development Coordinator. With 15 years of experience in the gas & oilfield industry, she began her career in business development and was most recently Sales Manager/Business Developer for Specialty Diving of Louisiana/Specialty Offshore.

Viega Adds Fortuny as Technical Manager

Viega LLC announced **Yasmin Fortuny** as its new technical manager for its shipbuilding and cruise business development division. Fortuny is now responsible for positioning Viega as the primary choice for marine applications within the commercial-


Christian


Berger


Johnson


Fortuny


Coda


Todd

vessel and military markets. Prior to joining Viega, Fortuny worked as a senior commercial account manager for Grainger Industrial Supply and she earned a bachelor's degree in industrial and systems engineering from Florida International University.

Duluth Seaway Port Authority's Coda receives Distinguished Service Award

The Center for Transportation Studies (CTS) presented its 2017 William K. Smith Distinguished Service Award to **Vanta Coda**, executive director of the Duluth Seaway Port Authority. The award was presented at the CTS annual meeting and awards luncheon on February 15. The Distinguished Service Award is named in honor of William K. Smith, who served on the initial committee that established CTS. Coda has been the Port Authority's executive director since October 2013, a career that spans more than 20 years in multimodal transportation and logistics.

ABS Delivers Subchapter M Support to Blessey Marine

ABS has been awarded a Third Party Organization contract by Blessey Marine Services to support compliance with US Coast Guard (USCG) Subchapter M requirements. "Like many in industry, Blessey Marine has spent the past several years preparing for the rollout of Subchapter M," says Blessey Marine President and COO **Clark Todd**. "We chose ABS to be our SubM partner based on their technical understanding of marine vessels and their commitment to industry


Wiernicki


Miller's Tug and Barge


U.S. Coast Guard

safety. We feel confident that ABS will play a role in our continued success."

ABS Advances Safety in Electric Hybrid Innovation

ABS has published the ABS Advisory on Hybrid Electric Power Systems to provide the critical information marine and offshore owners and operators need to make smarter decisions about energy generation and storage. "ABS continues to lead industry safety with the first comprehensive Advisory to address the latest hybrid electric power technologies," says ABS Chairman, President and CEO **Christopher J. Wiernicki**. ABS took a measured approach to evaluating the potential advantages and disadvantages, challenges and level of readiness for the primary hybrid electric power systems and components that are suited for marine and offshore applications.

Miller's Tug and Barge Passes RCP Audit

MarineCFO announced that Vessel 365 user Miller's Tug and Barge has successfully passed its RCP audit. The ability to review checklists and access historical information made the audit process seamless. Miller's Tug and Barge, headquartered in Staten Island, New York, operates 3 tugs performing long distance harbor towing, motion picture work, ship assists, barge assists and marine drilling.

Three Cranes for Crowley's Puerto Rico Terminal

Three new, ship-to-shore container cranes have been constructed and are scheduled for delivery to Crowley Puerto Rico Services' Isla Grande Terminal in San Juan in the near future. The electric-powered cranes will be used to transfer containerized cargo being carried aboard Crowley's two new LNG-powered ConRo ships, one of which is expected to be in service in the second half of 2017 and the other in the first half of 2018. These are the first new, specialized gantry cranes to be received in San Juan Harbor in five decades. Crowley is investing more than $130 million of the $550 million total project cost in infrastructure improvements to its Isla Grande terminal, including a new pier, cranes, container staging areas, reefer plugs, truck gates, container handling equipment and more.

US Coast Guard Awards Polar Icebreaker Studies

The U.S. Coast Guard awarded five firm fixed-price contracts for heavy polar icebreaker design studies and analysis. The contracts were awarded to Bollinger Shipyards; Fincantieri Marine Group, LLC; General Dynamics/National Steel and Shipbuilding Company; Huntington Ingalls; and VT Halter Marine. The combined total value of the awards is approximately $20 million. The contracts require awardees to examine design cost drivers; approaches to address potential acquisition, technology, and production risks; and benefits associated with different types of production contract types. The studies are expected to take 12 months to complete, with study results provided incrementally during that time.

Great Lakes Seaway Ballast Water Management Report Released

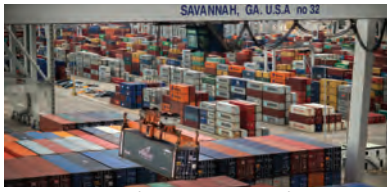
The U.S. Coast Guard has released the Great Lakes Seaway Ballast Water Working Group's 2016 Summary of Great Lakes Seaway Ballast Water Management activities. The Great Lakes Seaway Ballast Water Working Group is a bi-national collection of representatives from the United States Coast Guard, the U.S. Saint Lawrence Seaway Development Corporation, Transport Canada-Marine Safety & Security, and the Canadian St. Lawrence Seaway Management Corporation. This is the seventh consecutive year that BWWG agencies ensured the examination of 100 percent of ballast tanks entering the Great Lakes via the St. Lawrence Seaway. The group anticipates continued high compliance rates for the 2016 navigation season. Read the Report: **http://www.greatlakes-seaway.com/en/pdf/2016_BW_Rpt_EN.pdf**

Georgia Ports Set Tonnage, Box Records in January

The Georgia Ports Authority achieved outstanding January results, with double-digit growth across all business sectors and a 26 percent increase in total tonnage. Containerized trade saw strong growth, with 331,468 twenty-foot equivalent units crossing the docks at the Port of Savannah, up 16.2 percent, or 46,167 TEUs. Loaded containers accounted for approximately 268,000 TEUs, also a record. The increase in loaded containers contributed to an improvement in container tonnage of 22.1 percent (465,710 tons), for a total of 2.57 million tons for the month.

Point Comfort Towing teams up with San Jacinto College

Point Comfort Towing is sending its



Georgia Ports Authority


San Jacinto Training


St. Lawrence Seaway
Great Lakes bulker

mariners to the San Jacinto College maritime program for required job training and recertification, thanks to a 'Skills for Small Business' grant by the Texas Workforce Commission. Capt. James Andrews, president of Point Comfort Towing, identified six courses offered at the College's Maritime Technology and Training Center in La Porte, Texas, to develop technical skills for his engineers, leadership for his captains, and radar and shipboard firefighting training. The San Jacinto College Maritime Technology and Training Center on the Maritime Campus offers a full calendar of USCG-approved professional mariner courses.

Canadian Fleets, Seaway Invest $160M for Coming Season

Canadian shipowners and the St. Lawrence Seaway have spent $160 million on repair and infrastructure projects this winter. An estimated $70 million will maintain and upgrade vessels during the winter months – an annual exercise that keeps their vessels in tip-top shape to safely and efficiently deliver goods for North American businesses. The St. Lawrence Seaway Management Corporation also allocated $90 million for infrastructure modernization and maintenance projects in 2016-2017, the vast majority of which were carried out in the last few months in advance of the Seaway opening on March 20. Vessel projects include engine and generator overhauls, steel and mechanical work, navigation equipment and system hardware and software upgrades, accommodation and safety equipment upgrades and annual inspections. Notable rehabilitation by the St. Lawrence Seaway include reconstruction of the Upper Lock 1 Tie-up Wall in the Welland Canal.

The Boomslinger

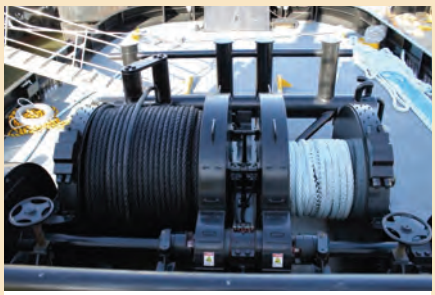
Snow & Company offers 20 ft aluminum containment boom deployment vessels. Snows goal is to develop job specific vessels that are built tough for demanding work conditions. Operator comfort, ergonomic features, and stability when crewmembers are working over the side were all important factors in the development of this vessel.

www.snowboatbuilding.com

JonRie Debuts its Tri-Winch Set

JonRie Marine Winches debuted its new Tri-Winch set on board Seabulk Towing's new ROTORTUG Trident. The 5,750 HP tug with a bollard pull of 78 Tons is the first of three new additions to the Seabulk Fleet. The JonRie Tri-Winch is ideal for Escorting, Terminal Support, Towing and Ship Assist of the new Container Ships to come through the New Canal Expansion.

www.marinewinch.com



Harley's Earl Redd Features Markey winch

The Earl W. Redd, the first Tier 4 tractor tug in the United States is equipped with a Markey Machinery two-winch suite of equipment consisting of a Markey TESD-34B-100HP double drum electric towing winch, and a DEPC-48-50HP electric bow hawser winch with Render/Recover. The TESD winch includes a hydraulically powered emergency "come home" drive motor in the event of electrical failure.

www.markeymachinery.com

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ACE Winches is a global leader in the design, manufacture and hire of winches, marine deck machinery and the provision of associated hire personnel for the offshore oil and gas, marine and renewable energy industries. With a broad range of capabilities, expertise and knowledge, in products and services for the Offshore, Onshore and Subsea markets, ACE Winches is a trusted partner.

www.ace-winches.com

Reduce Crane Accidents and Restore Workplace Safety

Think industrial cranes aren't major sources of workplace accidents? Think again. Larson Electronics' set of red lasers address this issue, shooting out a sharp, red laser beam that can be seen clearly on the ground. The lines serve as boundaries for high-risk areas that are prone to falling objects and debris. This solution is simple to implement and more effective than audio alarms.

www.Larsonelectronics.com

Cranston Eagle Marine Off-Load Hooks

Cranston Eagle Marine Off-Load Hooks provide for safe and reliable launch and recovery of fast rescue boats and other small craft or equipment in the marine environment. These hooks will not open while they are under load and are available in load ranges from two to twelve tons and in deck and cable mounted configurations, including five USCG approved models.

www.deltatsystems.com

Henriksen's Towing Hooks for Small Vessels

A new range of hooks from Henriksen AS introduces a significant level of safety for crews engaged in towing small to medium-sized vessels and loads. The new towing hook has been designed for users at the lighter end of the towing spectrum and it is available in three versions for use with loads from ten, five and two a half tons.

www.hhenriksen.com

Sparrows Group Supplies Wind Farm Cranes

Sparrows Group will supply 103 cranes for installation at Scottish-Power Renewables' 714 megawatt East Anglia ONE offshore wind farm. The wind farm will be capable of producing enough electricity to power around 500,000 homes and is anticipated to be fully-operational by 2020. A crane will be installed on each of the farm's 102 wind turbines with a further crane used for training purposes.

www.sparrowsgroup.com

Hyster Supports Barge Operations

The Hyster RS 46-41LS CH is part of Hyster's range of marine cargo handling Big Trucks, specifically designed for barge handling operations where containers are transferred between the dock and barge.

The "negative lift" Hyster ReachStacker can lower containers to 1.90m/75 inches below ground level and shares most of the same features as the terminal container handling Hyster ReachStacker, which provides low total cost of ownership.

www.hyster.com

AlphaBridge for Workboat Applications

Alphatron Marine's turnkey AlphaBridge tugboat console solution has been installed on board Seabulk Towing's RT Trident. The AlphaBridge for tugboats provides all-round visibility from a sitting position, ensuring uncompromised command and control at all times during intensive harbor operations. This proven and innovative tug bridge concept has been fully equipped with a high quality and ruggedized JRC/Alphatron Marine navigation and communication package.

www.alphatronmarine.com

New Clamp On Line Tensionmeter with Bluetooth App

Straightpoint has launched a new product for measuring tension on static lines—the Clamp On Line Tensionmeter (or COLT)—with a state-of-the-art Bluetooth load monitoring app among a myriad of standout features. The COLT measures tension on wire rope up to 11,000 lbf / 5,000 kgf and up to 1" / 25mm diameter. It clamps onto pre-tensioned wire ropes, eliminating the need for additional sheaves or tooling.

www.straightpoint.com

Cox Powertrain Names its First U.S. Distributor

British diesel engine innovator, Cox Powertrain, has named Texas based Elite Diesel Service as its first U.S.-based distribution partner for the company's revolutionary new marine diesel outboard, the CXO300. As Cox's US distributor for Texas, Oklahoma, and Missouri, Elite Diesel will play a key role in bringing its game-changing technology to market in this region. EDS operates from two Texas based facilities in Kemah and Rockport.

www.coxpowertrain.com

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• Bachelor's degree in Education, or a related field. (Three (3) years service as a deck officer in charge of a navigation watch may be substituted for the Bachelor's degree) or equivalent military experience (Deck Watch Officer).
• A 40-hour approved "Train the Trainer" course which meets STCW requirements OR complete an approved course within 60 days of hire (as a condition of continued employment).
• STCW Basic Safety Training.

Required Experience

• Seven years of maritime industry experience of which one-year is shipboard experience as the officer in charge of navigation watch or equivalent military experience (Deck Watch Officer).

Required Certification

• "Unlimited" Radar Observer endorsement.
• U.S. Coast Guard 100 ton Near Coastal Master's Credential
• Able-Bodied Seaman Credential (or, as a condition of continued employment, pursue and earn the credential within 1 year)

PREFERRED QUALIFICATIONS:

• Previous teaching experience at the post-secondary level.
• U.S. Coast Guard Master's License, 500 Gross Tons or more with Oceans endorsement.

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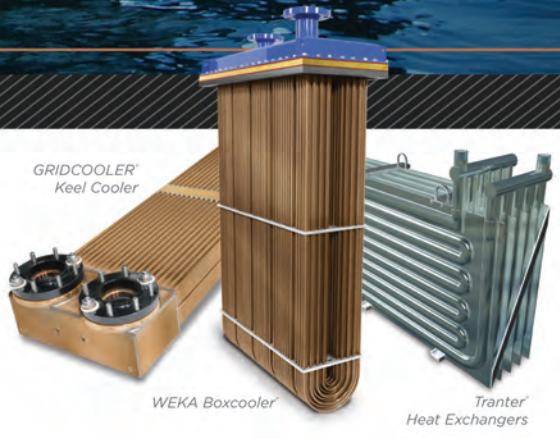

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