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The Elastec X150 Grooved Disc Skimmer System is put to the test in Port Fouchon, Louisiana. Elastec's robust and well-designed spill response equipment can be found in myriad spill response equipment kits, around the globe. See Elastec's latest offerings in this edition, starting on page 40.

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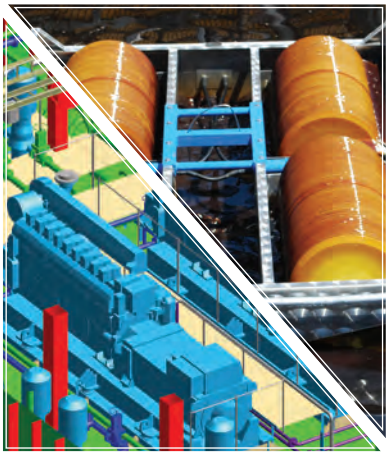

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I hesitate to use the words 'timely' in terms of this edition's focus on salvage and spill response, but it is an unfortunate coincidence that we highlight these sectors in the midst of one of the worst hurricane seasons seen in many years. Those storms, so far including *Irma, Harvey* and others which have not yet played out, serve as a grim reminder as to just how important our response capabilities are to the collective waterfront. As this edition goes to press, these folks are hard at work responding to myriad crises wrought by the storms.

As much as stakeholders are loathe to make that inevitable call to their salvor, qualified individual and/or spill contractor, I would suggest that the best time to get to know them is well before the next casualty strikes, and not immediately after. To that end, ASA President and accomplished salvage master Todd Schauer this month weighs in on the sector, current events and the regulatory and business drivers that impact the business model. It is tempting to take the salvage and response sector for granted. Mr. Schauer aptly shows us why we should not.

Even the best responders would be impotent in the face of any casualty if they aren't first provided with the proper tools to do the job. The spill response game is a perfect manifestation of that reality. As we found out after the Exxon Valdez grounding, and then later after the Gulf of Mexico Macondo tragedy, the research and development sector sometimes doesn't keep pace with the needs of a particular assignment. ***MarineNews*** contributor Tom Ewing's look at the U.S. Coast Guard's ongoing efforts to make sure that we are ready for potential casualties related to rapidly developing commerce in the Arctic shows promise, but also that there is still much to be done. That story begins on page 36.

It should come as no surprise that all of the above depends on rugged and reliable workboats. Indeed, the salvage and response sector, as a business necessity, sometimes leverages idle assets in many different missions. At the same time, cash-strapped municipalities, as well as federal and foreign governments must do the exact same thing. As the era of the 600-foot warship goes by the boards, the littoral approach of crowding SAR, firefighting, patrol and response capabilities (among others) onto one hull, as opposed to three, is suddenly very much in vogue. Susan Buchanan's snapshot of this sector, starting on page 26, is therefore an eye-opener.

The fourth quarter of 2017 starts at an incredibly brisk pace, with the domestic waterfront dealing with many issues; hurricanes, elusive CapEx financing, and Jones Act waivers prominent among them. For many stakeholders, it is likely to get harder before it gets easier. On the other hand, staying out in front of the issues can be as simple as keeping ***MarineNews*** at the ready. Just like you, we'll still be here tomorrow, doing what we do best. Come aboard for the ride.

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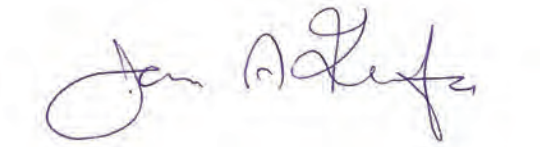

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All stats from 02/14/2017

2016 Recreational Boating Statistics: *a deeper look*

The U.S. Coast Guard's 2016 Recreational Boating Statistics report contains statistics on recreational boating accidents and state vessel registration. The annual numbers are a grisly reminder that it is dangerous out there. Commercial and gray hull operators should also take note: no one is immune to the issue of safe navigation and related practices on the water. Arguably, the record from the two latter sectors requires just as much improvement.

For 2016, the Coast Guard counted 4,463 accidents, 701 deaths, 2,903 injuries and $49 million dollars of damage to property as a result of recreational boating accidents in 2016, but the commercial sector and U.S. Navy have also seen their share of mishaps. That said; as the number of domestic recreational hulls decrease, the accident and death rate is inexplicably on the rise. As a whopping total of 11,861,811 recreational watercraft navigate (some more successfully than others) the 95,000 miles of U.S. coastline, ***By the Numbers*, the 2016 Recreational Casualty Report looks something like this:**

The fatality rate was 5.9 deaths per 100,000 registered recreational vessels, up 11.3% from last year
The number of accidents increased 7.3%, deaths increased 12%, & injuries increased 11.1%.
During the same time frame, the number of registered boats decreased by 5,238 hulls, or 0.04%.
80% of fatal boating accident victims drowned.
83% of drowning victims were not wearing a life jacket.
Eight out of every ten boaters who drowned were using vessels less than 21 feet in length.
Alcohol use is the leading contributing factor in fatal boating accidents (15% of all deaths)
77% of deaths occurred on boats where operator had no safety instruction.
Top five Reasons for Accidents: Operator inattention, inexperience, poor lookout, speed, & machinery failure
The vessel type with the highest PCT of deaths: open motorboats (47%)

Trying very hard to somehow reverse the worrisome trend on the water, the National Association of State Boating Law Administrators (NASBLA) is a national nonprofit organization that works to develop public policy for recreational boating safety. NASBLA's mission is to bring marine education to the recreational boater, to help standardize that training across 50 states and 6 U.S. territories and to bring reciprocity to that training on a national level. It is a very difficult job.

A NASBLA table lays out the boating education standards (or lack thereof) on a state-by-state basis. It is shocking to realize what is not required. Requirements that do exist can extend to certain age groups (typically a three year span for teenagers) after which (whether you've taken a course or not), you can plunk down $50,000 and drive out into the harbor without so much as knowing the pointy end from the stern. Some states are phasing in training requirements by imposing a "born on or after" date, whereby anyone born after a certain date must receive training, but those already on the water and older, do not. A NASBLA spokesperson characterized the Balkanized, state-by-state effort to educate recreational mariners as "a shallow effort to capture youthful mariners" in the hopes that as they mature into adult boaters, and that they will someday have at least the basis for what safe boating entails.

On the other end of the spectrum, today's commercial mariners chafe under the yoke of the current STCW regime. Mariners spending more than three months at sea come home to orders for another two weeks of training during their 'off-time.' No doubt someone up at IMO or at Martinsburg, WV is right now cooking up a new STCW requirement. Some stakeholders insist that there is no proof that STCW has made anything safer on the water. Incidents such as the USS Fitzgerald collision give credence to that kind of thinking.

Separately, the Government Accounting Office (GAO) recently took a look at the Navy's efforts to educate its mariners. The report, entitled GAO-17-798T, looks at Actions Needed to Address Persistent Maintenance, Training, and Other Challenges Facing the Fleet. What GAO found is arguably no more encouraging than what the U.S. Coast Guard or NASBLA report about the recreational sector.

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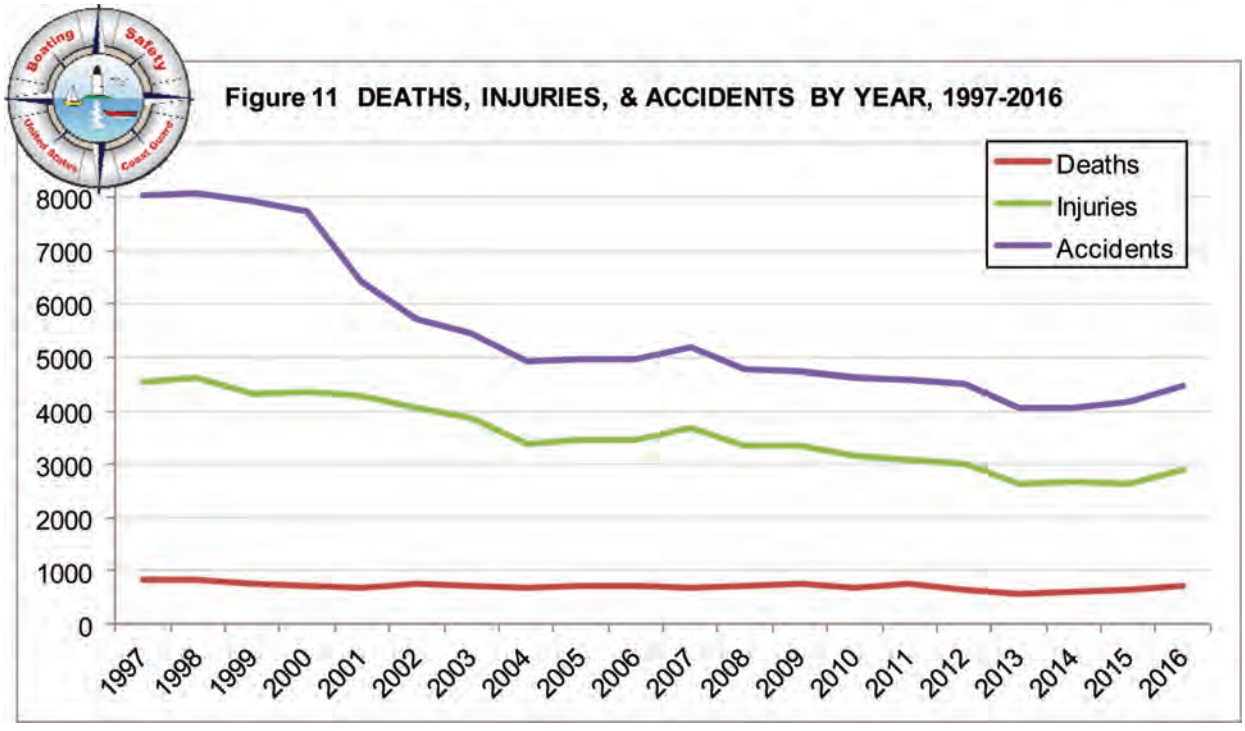
GAO says that the Navy's increased deployment lengths, shortened training periods, and reduced or deferred maintenance to meet high operational demands has resulted in declining ship conditions and a worsening trend in overall readiness. As the Navy doubled the number of ships based overseas, training was not built into operational schedules, and as a result, the crews don't have the needed training and certifications. Indeed, 37 percent of the warfare certifications for these Japan-based warships – including certifications for seamanship – have expired. U.S. Navy crew size reductions – *stop me if any of this sounds familiar from the commercial side of the equation* – contribute to sailor overwork and safety risks. Some sailors are working over 100 hours a week.

Retired Coast Guard Commandant Thad Allen put it best, a long time ago, when he said, "the general public understands that driving an automobile is a privilege, but at the same time, they consider being able to drive a boat as a basic right." That hasn't changed much, over time. In any event, and as you sign on board your next hull, remember that the person in the other boat may not be qualified to drive a riding lawnmower, never mind the 45-foot outboard motorboat that is rocketing towards you at 30 KT. And just because someone has taken the watch on a large, deep draft commercial vessel or naval warship doesn't necessarily mean they'll get it right, either. Too much training, inadequate training, and/or no training at all – it all apparently adds up to the same thing. Let's be careful out there.

A Look at Recreational Boating Statistics for Highest Casualty States

State	Casualties	Deaths	Damage ($)	Hulls (U.S. Rank)
FL	684	70	9.7 million	905,298 (1)
MN	96	17	0.2 million	817,560 (2)
MI	125	38	0.6 million	794,137 (3)
CA	386	47	4.4 million	697,412 (4)
WI	103	20	0.9 million	611,240 (5)
TX	176	53	1.0 million	573,425 (6)
SC	136	23	1.0 million	518,269 (7)
OH	113	12	0.9 million	505,082 (8)
NY	188	22	1.3 million	448,480 (9)
LA	112	24	1.6 million	306,689 (13)
WA	98	18	1.8 million	234,035 (17)
U.S. TOTALS	4,463	701	49.0 million	11,861,811

Source: U.S. Coast Guard (2016 data)



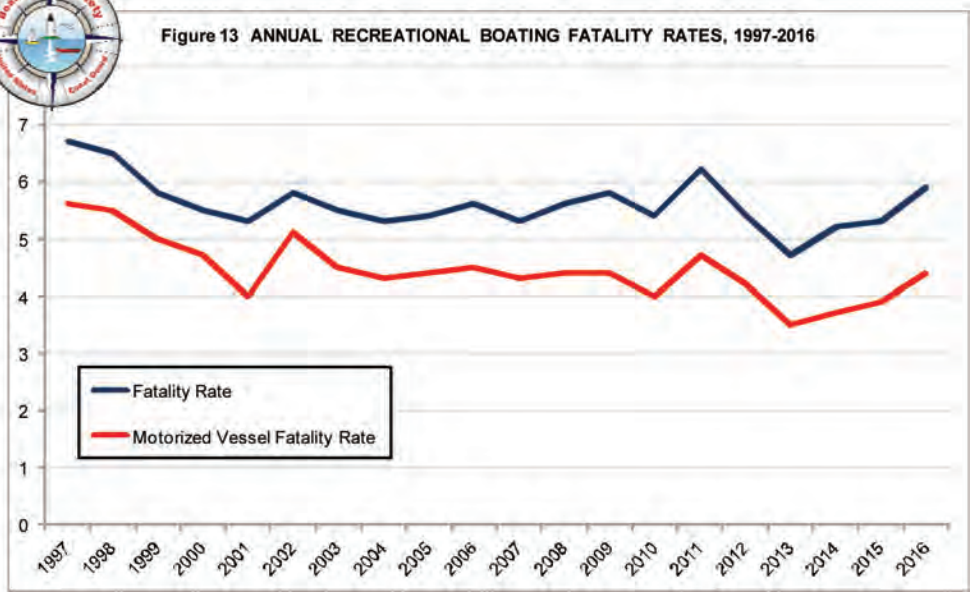


Table 29 • DEATHS, INJURIES, & ACCIDENTS BY YEAR, 1997-2016

Year	Deaths	Injuries	Accidents
1997	821	4555	8047
1998	815	4612	8061
1999	734	4315	7931
2000	701	4355	7740
2001*	681	4274	6419
2002	750	4062	5705
2003	703	3888	5438
2004	676	3363	4904
2005	697	3451	4969
2006	710	3474	4967
2007	685	3673	5191
2008	709	3331	4789
2009	736	3358	4730
2010	672	3153	4604
2011	758	3081	4588
2012	651	3000	4515
2013	560	2620	4062
2014	610	2678	4064
2015	626	2613	4158
2016	701	2903	4463

* On July 2, 2001, the Federal threshold of property damage for reports of accidents involving recreational vessels changed from $500 to $2000.

Table 36 • RECREATIONAL VESSELS REGISTERED BY YEAR, 1980-2016

Year	Registered Vessels
1980	8,577,857
1981	8,905,097
1982	9,073,972
1983	9,165,094
1984	9,420,011
1985	9,589,483
1986	9,876,197
1987	9,963,696
1988	10,362,613
1989	10,777,370
1990	10,996,253
1991	11,068,440
1992	11,132,386
1993	11,282,736
1994	11,429,585
1995	11,734,710
1996	11,877,938
1997	12,312,982
1998	12,565,930
1999	12,738,271
2000	12,782,143
2001	12,876,346
2002	12,854,054
2003	12,794,616
2004	12,781,476
2005	12,942,414
2006	12,746,126
2007	12,875,568
2008	12,692,892
2009	12,721,541
2010	12,438,926
2011	12,173,935
2012	12,101,936
2013	12,013,496
2014	11,804,002
2015	11,867,049
2016	11,861,811

The U.S. Coast Guard's 2016 Recreational Boating report: *http://uscgboating.org/statistics/accident_statistics.php*
The GAO's look at U.S. Navy Training Shortcomings: *http://www.gao.gov/assets/690/686996.pdf*

President, American Salvage Association

Todd Schauer is Director of Operations at Resolve Marine Group, as well as President of the American Salvage Association. After graduating from the U.S. Coast Guard Academy with a degree in Naval Architecture in 1991, he followed that up with graduate degrees in Naval Architecture, Marine Engineering and Mechanical Engineering from the University of Michigan. And, while his considerable U.S. Coast Guard experience includes shipboard engineering, marine safety, advanced engineering and emergency response, he is best known for his longtime role in the commercial salvage business. Schauer possesses more than 25 years of success as a Project Manager, Salvage Master, Naval Architect, and Marine Engineer; including 20 years of salvage related experience, underscored by five years of service on the USCG Salvage Emergency Response Team (SERT), including acting as Team Leader. Todd's certification and experience as a Registered Professional Engineer and understanding of Naval Architecture principles bring an added value to his ability in directing complex salvage operations. Beyond this, he served for 9 years on active duty with the U.S. Coast Guard including as an Engineer aboard the Polar Class Icebreaker POLAR STAR. Simply put, this salvage and response professional has done it all. Today, he is directly responsible for Resolve's global salvage, wreck removal and firefighting operations. His most recent major project accomplishments include wreck remediation of the M/V Rena and the Ro/Ro Amadeo 1 wreck removal. The American Salvage Association (ASA) is indeed fortunate to have him at the helm, and *MarineNews* is similarly grateful to have him weigh in on the hottest response topics of the day. Listen in as Todd Schauer schools us on 'all things salvage.'

Give us an overview of the Salvage Industry in 2017 – the good and the bad – domestically and across the globe. What's the number one thing on your plate today?

The salvage industry has been plagued by market woes much like other segments of shipping and oil and gas production. The reported global salvage revenue in 2016 was approximately 50% of the prior year and early 2017 was not much better – that represents a major tightening of the belt for salvage operators and it takes the fun out of maintaining an expensive salvage response capability. We have seen such cycles before that test the long term commitment of the salvage companies. Underwriters should enjoy it while it lasts because the salvors will not soon forget this period.

As we approach the end of this calendar year, what's the latest on the LOF – is it dead, coming back, changing? What is its future? If it goes away – what is the impact on the salvage business?

The LOF is certainly not dead. It remains a very common sense contract for emergency response that has stood the test of time and it is still used frequently in cases of peril. However, market pressures and human intervention have led to a watering down effect. The depressed value of ships has a direct negative impact on the potential for LOF salvage awards. Further, cut-throat market practices have led to a practice of LOF side letters between salvors, owners, and underwriters, modifying the terms, capping awards, etc. The beauty of the LOF has always been its simplicity and thus the ability to immediately contract a salvor without rounds of contract negotiation. Unfortunately, all sides are complicit in taking an otherwise perfect contract and modifying it to imperfection on a case by case basis.

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What's the key difference (if any) between how U.S. salvors operate and the way international operators run their businesses? What can one sector learn from the other?

The key difference is that the US market has taken a big step in the direction of pre-arranged, regulated, retainer based contracts for salvage response under the OPA 90 Salvage and Marine Firefighting (SMFF) Regulations. This represents a marked contrast in how salvors operate in the US compared with the rest of the world. In the U.S., the salvor secures the job well in advance of any casualty by contracting as the SMFF provider whereas most everywhere else, the job is won in a more traditional manner on the merits of the salvor's response capability when and where the casualty occurs. Salvors that can operate and be successful under both systems have the best chance of long term success; however, I believe there will be a steady trend toward more regulated, prearranged salvage contracts including global service agreements in the future.

In 2013, NOAA submitted a report to the U.S. Coast Guard after completing an assessment of known and potentially polluting sunken wrecks in U.S. waters, known as the Remediation of Underwater Legacy Environmental Threats (RULET) project. Has there been any movement on this report on 17 high risk wrecks that were recommended for further assessment and potential oil removal?

I am pleased to report that there is some positive movement on this front. The U.S. Coast Guard has just recently solicited for the assessment of the wreck of the *Coimbra* off of Long Island for total pollution potential. This wreck has been observed to be leaking oil for some time. There are several other WW2-era coastal wrecks that are also persistent leakers that clearly represent a substantial threat of pollution. We are hopeful that these will be acted on as well.

P&I Clubs are concerned about the rising cost of wreck removal. What should salvors say in response? How can both stakeholders work closer and with more effectiveness?

If you look at market trends over the past couple of years exactly the opposite is true! Salvors are very concerned

The Ro/Ro Amadeo 1 wreck removal project off Southern Chile

Credit: Todd Schauer

about the dropping cost of wreck removal and so should the P&I Clubs. The Clubs have taken advantage of the current market that has thoroughly depressed wreck removal prices, but it may well backfire if this forces further consolidation among the salvage majors. The trend of hiring wreck removal contractors, many of which are new in the market, just because they are cheap and will take the most risk is not a good long term business strategy for anyone. The same is true of emergency response contracts. I was involved in tendering for a recent emergency response where underwriters stated up front that they expected a discount of 25% on the internationally accepted SCOPIC rates. That is no way to foster a development of salvage capability and meet the rising demands of modern salvage including mega ship response, etc.

Local and regional salvage companies now think they can compete on the world stage. Increasingly, they bid on jobs that typically would have been bid out to 4-5 companies with the financial wherewithal and proven experience to do the job. Now you may have 10 or more companies bidding on work, and it could cost a half a million dollars or more to do the survey, draw up the plans, do the diving and complete the RFP. At the end of the day, only one company gets the work and the others are out a lot of money. How do you balance the need to participate in the bid process with the knowledge that you might not be the "winner" on a given day?

As I stated above, the trend is exceedingly frustrating to the major salvors that have made huge investments over the decades in personnel, equipment and overall capability. Our members don't mind competition but the tender process must be managed professionally and fairly. All too often underwriters and their chosen representatives ask for professionalism, experience and quality but in the end they succumb to price pressure or hold a risk auction. I am comforted by the belief that time has a way of sorting things out and that we are due for a market correction to the positive for our members.

What is the salvage response (as early as it may be) to Harvey on Gulf Coast?

ASA salvors are busy responding to numerous vessel and waterways issues in the aftermath of Hurricane Harvey. While most of the media focus has rightfully been on the tragic flooding event in the Houston area, the Category 4 hurricane made landfall north of Corpus Christi and the wind and storm surge damage is primarily in that area. ASA members took the lead on channel clearance operations in Port Aransas and Port Mansfield to remove vessel casualties. There are numerous other salvage projects underway in this zone including sunken tugs, stranded barges and many displaced fishing and recreational vessels. Despite the fact that several of our member companies are based in the Houston area and directly affected by the storm, the ASA responders mounted a rapid and effective response. As I write this Hurricane Irma has just strengthened into one of the strongest hurricanes on record and is bearing down on the Caribbean and towards the US. Undoubtedly, the aftermath of this storm will be major news by the time this is published and our members will be heavily involved in the response operations.

Understanding the Complicated Business of Marine Construction Worker Claims

The Right Insurance Policy Could Help You Stay Above Water After a Workplace Incident.

By Mark Engel

Engel

The day-to-day job of marine construction workers has many potential hazards. While restoring shorelines, dredging harbors, repairing bridges and building docks, they often operate heavy machinery. Manning cranes, forklifts and excavators day or night, it is not uncommon to work in sweltering heat, freezing cold temperatures and an array of other challenging weather conditions. With all of this in mind, it's safe to say the risk of danger is greater for people in this profession than your average line of work.

When injuries happen, workers and employers, already bound by regulatory red tape, are thrust into a dizzying maze of laws and jurisdictions to file a claim and collect payment for hospital bills and missed paychecks. This convoluted process is particularly daunting for smaller companies and the many marine construction workers classified as independent contractors who are responsible for meeting their own insurance needs.

Too Many Acts to Follow

For starters, there are multiple laws that govern maritime worker protections, and they overlap in many respects. This creates gray areas that can take time – and lawyers – to interpret. Each state has its own workers' compensation statutes that govern who can file for benefits, the amount of benefits available and how long the benefits last. On the federal level, the Longshore and Harbor Workers Compensation Act (LHWCA) applies to those who work around navigable waters in or adjacent to the United States at piers, docks, harbors, sea terminals and the like. Then there is the Jones Act (or P&I), which applies to "seamen" – employees who work at least 30 percent of the time on barges, oilrigs, shipping boats and other sea vessels. Even the interpretation of a "seaman" can be broadened, depending on the circumstance.

On paper, these three categories of law look distinct. In reality, they are separated by very thin lines, causing headaches for employees when getting reimbursed for injury or damages suffered on the job. For example, a marine construction worker and seamen share several job duties and workplace descriptions. Depending on the job, an employee could spend several days on a boat or repairing a bridge. A seaman, who is captaining a work boat, could jump off and help secure the seawall adjacent to a pier.

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The Murky Waters of the Claims Process

With fuzzy boundaries between laws, a lot can go wrong. Suppose a dockworker is injured by a crane while working on a barge; is he covered under LHWCA as a longshoreman or under the Jones Act because the incident took place on an owned barge? What if this is a third-party barge, could this be a Maritime Employee Liability claim, also under the Jones Act?

Similarly, what happens when a residential construction worker, normally covered under a state workers' compensation scheme, is injured while moving a barge to a coastal jobsite?

Unfortunately, the claims process is confusing for the many marine construction workers who fall into these ambiguous situations. With maritime insurance spending on the decline, carriers and agents are often staffed with generalists who don't wield the intricate knowledge needed to provide proper coverage. Quite frankly, insur-

With fuzzy boundaries between laws, a lot can go wrong. Suppose a dockworker is injured by a crane while working on a barge; is he covered under LHWCA as a longshoreman or under the Jones Act because the incident took place on an owned barge? What if this is a third-party barge, could this be a Maritime Employee Liability claim, also under the Jones Act?

ance companies haven't focused on the maritime industry. Few have found a way to make carrying all-inclusive offerings available, bridging the gaps and improving customer experience. So, many marine related companies, especially in the marine construction area are forced to go to multiple companies to meet all of their insurance needs.

So, when a maritime incident happens, the company needs to figure out which kind of claim to file – workers' compensation, USL&H, P&I, maritime employee liability, etc. Chaos ensues as the carrier's agents and attorneys decide which jurisdiction applies. It can take weeks of sorting through separate policies to determine the applicable jurisdiction and law. In the meantime, the injured worker is left to cover these exorbitant medical bills out-of-pocket.

When the arduous process is complete, the claimant may not get a fair payout. Each statute yields different types of awards. Under the LHWCA and state workers' compensation plans, both the percentage of average weekly wages and the total amount of money one can collect are capped. Plus, the injured party only gets funded for the duration of the injury. Claims made under the Jones Act work more like personal injury cases. Filers can also recover wages and medical expenses, but they can win additional awards for pain and suffering, depending on the claim. Too often, the defendant has the means and the connections to steer a claim to the policy with the smaller payout, depriving an employee of sorely needed funds, even though he "won" his case.

Anchors Aweigh: the Right Insurance Policies Make for Smoother Sailing

How can marine contractors in the longshore business make the claims process work better? Here are some tips for selecting insurance coverage that will put you in a better position should you need to file a claim.

- ***Leave the legal wrangling to the experts***

Marine construction companies and their workers aren't expected to have a deep legal background. So, why should the onus be on them to comb through insurance policies and laws to figure out which ones apply? Amazingly enough, claimants are often tasked with bridging insurers' knowledge and product gaps.

Claimants, and their employer, will need to be involved in the process, but the folks with the insurance and legal background should be doing the heavy research to determine under which policy and statute a claim should be filed. Workers should only be brought in to evaluate the suggested course(s) of action and provide feedback. Your insurance carrier should then handle the details of settling the claim quickly and efficiently.

- ***Make sure your insurance company carries all lines of coverage***

If you rely on more than one insurance carrier to fulfill your employee injury and maritime coverage needs, then that is too many. An insurance company that offers all relevant employee injury and marine lines of coverage—workers' compensation, USL&H, maritime employee liability, Marine General Liability, P&I and Hull in addition to traditional property casualty lines, contractor equipment, auto, property and excess/umbrella delivers peace of mind. The marine construction workers and business owners know they won't be left in the lurch due to a gap in coverage. That company should also have the expertise on staff to deal with claims that originate onshore, offshore and anywhere in between.

- ***Demand deep maritime industry expertise***

In addition to a reliable insurance background, your insurance company should have first-hand knowledge of how the maritime industry works. An insurance company that employs maritime professionals and experienced marine insurance agents is more likely to steer your claim in the right direction than a traditional P&C carrier.

- ***Talk to an agent***

Insurance is a complicated business, so shop around and talk to a couple of insurance agents about your workers' employment status and job duties. They should have an idea of the scenarios to prepare for and the most appropriate coverages for them. You, in turn, should confirm they supply all lines of coverage and take on the bulk of the claims process for you.

After all, insurance is supposed to prevent a workplace calamity from sinking you.

***Mark Engel** is ProSight's Program Executive for Ocean Marine, Cargo and Offshore Energy. He's been in maritime insurance since 2002. He graduated from the Birmingham University, UK in Economics and Politics and holds an Associateship of the Chartered Institute of Insurance.*

A Legal Limbo:

Risk Management in a Modern Marine Economy

By Benjamin Ford

Ford

Technology helps maritime companies do more with less. But today, technological advances are outstripping legal developments. As a result, many marine-based businesses operate in a legal limbo with many lawyers and insurance professionals confused about what laws will apply to what claims. While sometimes philosophical, the problem of what law will apply becomes stark and very real when a worker is injured.

Changing Seascapes

We live in a golden age of maritime technological development as we learn to use our oceans, lakes, rivers, and coastlines in new and unique ways. With new contraptions entering the water every year, lawyers and insurance professional are constantly asking themselves: what is this thing under the law? Is it vessel? Is it a port? Could it be both a vessel and a port? What if it is fixed to the seabed? Any wrong answer to those questions can result in a firm-ending lawsuit in the event an employee is injured on the job.

The U.S. waterfront is controlled by a mishmash of state and federal laws. States have sovereignty over their own territorial waters, generally within three miles. Outside of three miles, the feds claim dominion. But federal law also extends to anything that could be considered a vessel. Federal law also extends to elements of locks, dames, harbors, and piers. This distinction exists only on paper and in the minds of lawyers and politicians. In reality, workers and equipment transit these imaginary boundaries constantly throughout the day. As a result, a complex bouquet of worker protection laws has evolved to ensure that no worker is left without a remedy in the event they are injured at work. But figuring out which remedy might apply can sometimes be a challenge.

Maritime Worker Coverage 101

There are three basic ways maritime workers are covered in the U.S. The most common is worker's comp, a state-based program, in which the employer buys insurance. If and when an employee is injured, that employee's sole remedy is to bring a claim against the policy. The claims are administered through a state agency, and the employer sees little direct exposure from the liability. People working loading and unloading ships are covered by a federal program called the United States Longshore & Harbors Workers Compensation Act ("USL&H"). Similar to state-based worker's comp, workers injured on the docks bring a claim against the USL&H policy and that claim is processed through a federal agency. The final coverage scheme is the Jones Act which covers seamen working as crew of a vessel. Unlike worker's comp and USL&H, the Jones Act allows injured employees to sue their employers directly in federal court rather than administering the claim through a government agency. This gives potential plaintiffs a little more leverage in negotiating settlements.

On the Waterfront

Imagine an aquaculture company that has a processing plant on a working pier, plus two net pens, one in a shallow bay close to shore, and another four miles out to sea. This company has a very unfortunate and accident-prone employee. We'll call him Mr. Bill.

©Adobestock credit: Currahee Shutter

> *The U.S. waterfront is controlled by a mishmash of state and federal laws. States have sovereignty over their own territorial waters, generally within three miles. Outside of three miles, the feds claim dominion. But federal law also extends to anything that could be considered a vessel. Federal law also extends to elements of locks, dames, harbors, and piers. This distinction exists only on paper and in the minds of lawyers and politicians. In reality, workers and equipment transit these imaginary boundaries constantly throughout the day.*

One morning, Mr. Bill drives his company pickup to a feed distributor located 5 miles inland. On his way in, he trips and breaks his ankle. In that situation, there is no question that Mr. Bill's injuries would be covered by the state's worker's comp scheme. The next week, Mr. Bill is on the pier and walking to the processing facility. Focused on his first cup of coffee, Mr. Bill is hit by a forklift driver who was unloading a ship. Mr. Bill's injuries would then be covered by USL&H. The next week, Mr. Bill takes the company skiff out to the in-shore net pen. While checking his social media accounts, Mr. Bill hits a reef and is thrown into the console of the skiff. Because he was the crew of a vessel in navigation, Mr. Bill's injures would be covered by the Jones Act.

Each of these injuries involve fairly typical marine related activities and so it is easy to buy insurance products to cover them. However, things get confusing when you move into non-traditional marine industries.

Our illustration continues as Mr. Bill steps from the skiff to the in-shore net pen and steps on a rusty nail. Is that injury covered by worker's comp because it is in state waters? Is it covered by USL&H because the net-pen could be considered a harbor? Or, might it be covered by the Jones Act because the net pen could be considered a vessel? USL&H has a specific exception for aquaculture, meaning that it only cover's aquaculture injuries when they are not covered by the state worker's comp system, but that distinction may not be clear enough to close out an argument by a clever Plaintiff's attorney.

Finally, Mr. Bill has recovered from all of his injuries when he stepped from the skiff onto the open-water net pen. Mr. Bill trips, falls into the net pen, and is nibbled on by hungry salmon. We do not know what will cover that injury. Can it be worker's comp? Probably not because the injury occurred in federal waters. Can it be USL&H? Perhaps, but it is tough to argue that the net pen is a harbor floating many miles out to sea? Can it be Jones Act? Maybe, but a net pen does not look like a vessel.

Managing Risk by First Understanding Exposure

An employer can only claim the protection of the worker's comp and USL&H laws if they have insurance. In other words, the only way an employer can avoid being sued is by having a policy that covers the employee's injury. Here is the scary part: If an employer only has a worker's comp policy and an employee gets injured in a marine related activity, there is a chance that the policy will not cover the injury. Plaintiff's attorneys can, and often do, choose the type of claim they want to bring.

There could be any number of tactical reasons why a Plaintiff's attorney would want to bring a USL&H claim over a worker's comp claim and most insurance policies do not overlap. If the attorney brings a claim for which the employer has no coverage, the employer will be exposed

for the entire injury.

For most traditional businesses, gaps in coverage are rare. Lawyers and insurance professionals understand the risk profile of traditional businesses and can recommend products to ensure good coverage. But as we find new ways to utilize our oceans, lakes, rivers and coastlines, we begin to blur the lines between the traditional definition of terms like sailor, vessel, and stevedore. Companies working on the front lines of technology risk working themselves out of insurance coverage, or spending money insuring against risks they do not have.

Returning to our example, would it be necessary for the aquaculture company to have coverage under all three schemes? Might they save money by not purchasing Jones Act coverage? The answer to this question will require a searching inquiry into the nature, location, and configuration of the equipment and who will be operating that equipment. Because of this, it is extremely important for companies working on the front lines of marine technology to consult with a lawyer or an insurance professional who understands BOTH the law and the industry.

A growing population will look to the sea for energy, food, and transportation. As the demand on our waterways grow, scientists and engineers will find new ways to reap the benefits and business people will find new ways to bring those benefits to market. As technology outstrips the law, marine businesses can find themselves exposed to legal risks they never knew existed. It is therefore critical that businesses regularly check in with lawyers and other insurance industry professionals who understand both the law and their business.

***Ben Ford** is an attorney at Verrill Dana, and serves as a board member of the Maine Marine Trade Association. As a member of both the firm's Maritime and Labor & Employment Groups, Ford provides a unique perspective to his clients in the marine industry, helping them to mitigate risks and overcome business challenges for success.*

Act Now To Avoid BWMS Compliance Risks

By Steven Candito


Candito

Lately, I have been reading reports regarding the United States Coast Guard's (USCG) escalating enforcement of ballast water discharge violations. In the first case, the USCG initiated a civil penalty proceeding against a bulk carrier for discharging ballast water in Washington State without using a USCG Type Approved Ballast Water Management System (BWMS) or other approved means. The USCG proposed the maximum penalty of $38,175. In a more recent case, the USCG issued a $5,000 fine for a similar unauthorized ballast water discharge in Oregon. In both situations, the violations were discovered during routine port state control (PSC) BWM examinations.

Beyond the obvious fines or delays in vessel schedules, there are imminent risks to the shipowner associated with the USCG's current focus on BWMS violations. First, there are many BWMS currently onboard vessels that either do not work at all or are so temperamental that the ship's crew has not been able to operate them properly. ABS recently issued a report indicating as many as 45% of installed BWMS are not operating as intended. Factors such as ballast water salinity, temperature and turbidity can adversely impact the performance of some systems, particularly if the crew is not experienced enough to make the necessary operational adjustments for the system to meet the regulatory requirements.

Perhaps more importantly, there is the risk that the vessel's crew becomes so frustrated with a BWMS that is difficult to operate that they simply stop using them. In a worse-case scenario, a disgruntled crew member may believe there is the potential for a monetary windfall as a "whistleblower" by reporting a malfunctioning system or the discharge of untreated ballast water to the USCG PSC inspectors. The maritime community is all too familiar with the huge awards some crew members have obtained by reporting oil discharge violations in "magic pipe" cases. In April 2017, a cruise line was ordered to pay more than $40 million for illegally discharging oil and falsification of records. The engineer who reported and turned over evidence to the USCG was awarded $1 million.

Fortunately for vessel owners, the same whistleblower regulations used in "magic pipe" cases do not apply in the ballast water context. More specifically, the *Act to Prevent Pollution From Ships* (APPS, 33 USC 1905-1915) only applies to MARPOL violations, not ballast water discharges. Interestingly, and although many may not be aware, the specific whistleblower statute, 33 USC 1908 (a), applies to more than oil discharges, including chemicals, garbage and sewage, but clearly not to untreated ballast water.

In light of the above, my advice to shipowners performing research for their BWMS installations or retrofits is to look for systems that both work well and are easy to operate. If the crew is not properly operating the BWMS and keeping up-to-date records of ballast water discharges the USCG will likely hold the vessel for an extended period and also penalize it with a substantial fine. Shipowners should also ensure that their crews are properly trained to operate their BWMS and not just at the first commissioning. Are you choosing a BWMS manufacturer that has training programs or centers that are set up to train future crews at each level of technical ability needed, from crew to chief engineer? Owners don't want to repeat the difficulties of the past related to oil water separators, which led to crews bypassing systems with magic pipes, resulting in whistleblowers and ultimately large fines.

Thankfully, the whistleblower risk is remote, but the risk of lengthy delays and fines from the USCG, as evidenced by the two recent cases in Washington and Oregon, is becoming more common. Further, the fines or delays at port can be substantial and may not be covered by Protection and Indemnity (P&I) insurance. Vessel owners should understand that P&I cover for fines involving non-compliance with BWM regulations, except for accidental discharges, are discretionary (similar to MARPOL magic pipe violations). In such cases, to obtain coverage for the fine, the shipowner is required to satisfy the P&I Club that all reasonable steps were taken to avoid the BWM violation.

Even with today's generally poor freight rates, I urge shipowners to start the process of choosing a BWMS now. While the installation of systems on the global level has been delayed due to the ruling at MEPC 71, this delay is not the case for ships sailing in U.S. waters. The USCG regulations specifically require compliance at the first scheduled dry-dock after January 1, 2016 for existing ships, and at delivery for newbuilds. Before any type approved systems were available, the USCG allowed shipowners to apply for an extension on a blanket basis. Now, as of September 2017, there are five USCG approved systems with varying technologies. Fortunately, the USCG has not removed the extension option completely, but obtaining an extension due to the lack of approved systems is no longer an option. Further, the extension process is now more difficult and less straightforward; shipowners must demonstrate that none of the approved BWMS are suitable for their vessel, as per 33 C.F.R. § 151.2036. An extension may only be granted where the shipowner can clearly document that "despite all efforts," compliance is not possible.

Fortunately, the current regulations do not allow whistleblower windfalls for ballast water violations. However, that benefit does not offset owners' current time sensitive dilemma. They are going to need all the time available to evaluate and select (including preparing engineering drawings and obtaining class approval), as well as install an easy-to-use, cost effective USCG Type Approved BWMS. Even with the MEPC 71 extended implementation schedule and the USCG's possible, but amorphous extension program, complying in a timely fashion is no easy task. The best advice for owners struggling with the BWMS issue is simply to act now. There really is no time to wait, it is simply not worth the risks, and particularly considering the USCG's recent stepped up enforcement.

Steve Candito *is the CEO of Ecochlor, Inc. Prior to joining Ecochlor, Steve was Founder, President and CEO of Foresea Consulting where he provided various advisory services including strategic planning, regulatory compliance and crisis management to the maritime and environmental communities. Before Foresea, he was President and CEO of National Response Corporation (NRC). During his 20+ years at NRC he grew the business from a start-up to a leading global emergency response and environmental services firm. Steve graduated from Hofstra University School of Law and the United States Merchant Marine Academy.*

THE 'AG COAST' OF AMERICA

St. Louis Region's Agriculture Freight Network Poised for Growth as Handling Capacity Increases along a 15-mile section of the Mississippi River.

Located in the heartland of America, one 15-mile section of the Mississippi River in the St. Louis, Missouri, region delivers the highest level of grain barge handling capacity anywhere along the Mississippi River. Known as the "Agriculture or Ag Coast" of America in terms of barge transfer facilities for agricultural products, local stakeholders also know that in order to sustain and grow this impressive market share, ongoing and future infrastructure investment in multimodal interconnectivity is critical.

As production and demand for commodities like corn and soybeans increase, the St. Louis region is strategically positioned to handle a significant portion of the expected increase in freight volume along this waterway. Those findings were revealed during a recent meeting hosted by Bi-State Development, St. Louis Regional Freightway and America's Central Port, further underscoring the positive outlook on the bi-state region's role as a national and global freight hub.

To be sure, the amount of river business in the St. Louis region has disproportionately increased over the past three decades. That's in no small part because the bi-state region's barge transfer facilities are earning recognition as a more cost-effective and efficient means to transfer products by barge for shipment to the Port of New Orleans as compared to other areas north of St. Louis. That recognition comes on the heels of investment of more than $200 million in the region's agricultural product barge transfer infrastructure facilities since 2005.

As the freight cost to ship large cargoes through places like Davenport (Iowa) or Peoria (Illinois) to and from New Orleans has increased significantly, the freight cost to ship through St. Louis to New Orleans has not increased, and in fact, is coming down. That's because the St. Louis region is blessed with more efficient infrastructure and handling capacity, delivered via the region's open waterways and barge transfer facilities. Railroads have also offered cheaper rates to large barge-loading facilities that can turn unit trains – carrying 110 to 125 railcars of grain and agricultural product – in just a few hours.

"Barge loading and unloading capacity has expanded in the St. Louis area to take advantage of these train rates and barge freight rate adjustments," said David Jump, president of Illinois-based American Milling. He added, "The four highest capacity grain barge loading facilities in the entire inland waterway are in Cahokia, Illinois. Three of the four were built in the past five years. As a result of increased handling capacity and favorable barge freight values, the St. Louis region has become a very significant destination for these trains."

China has become a large buyer of soybeans with 35 percent of soybeans grown in the United States being exported to China. China National Cereals, Oils and Foodstuffs Corporation (COFCO International) never owned a grain/agriculture barge transfer facility in the interior of the United States until last year when it invested in the St. Louis region. And, China will begin buying grain coming into Cahokia this fall.

The frequency of unit trains along Illinois Route 3 has increased since 2016 and is expected to increase again this fall. In 2016, fluctuations resulted in as many as two unit trains crossing Route 3 a day, with each unit crossing Route 3 twice a day. In early 2017, the fluctuation reached four unit trains per day. In the fall, CGB will complete unit train rail improvements, which will increase the amount of unit trains that cross Illinois Route 3 to potentially six. According to Jump, COFCO has the capability for two additional unit trains with the potential to accommodate a four-unit train per day capacity. In addition, Jump said American Milling is planning for an additional barge transfer facility, which would increase the St. Louis region's capacity to handle even more grain and grain products in the future.

The growth in capacity also comes as the demand for

exports continue to increase. Indeed, U.S. soybean exports have increased from 20 million tons to 57 million tons over the past 30 years, and corn exports increased from 32 million tons to 57 million tons.

"In 1985, more than 5 percent of grain barges arriving in the New Orleans Harbors were coming from the St. Louis region, and now, that number has increased to about 30 percent," said Jump. "The factors that are forcing growth in the St. Louis region are not going away. There is nothing on the river like the St. Louis region."

Factors credited with producing barge traffic growth also include excess capacity at river terminals and high concentrations of barges, superior intermodal connectivity that includes six of the nation's seven Class I railroad carriers, easy access to four interstate highways that all provide national access and the geographic advantage of being centered in America's agricultural heartland; a region which naturally provides the northernmost ice-free and lock-free access on the Mississippi River to and from the Gulf of Mexico.

Jump said while cargo handling capacity in the St. Louis region is booming, rail switching capacity is stretched. Demands on barge switching are at or over capacity, and the American farmer is currently growing near-record crops again for corn and for soybeans.

In order to keep up with demand, Mary Lamie, Executive Director of the St. Louis Regional Freightway, said it is vital for the bi-state region to continue to invest in roadway infrastructure as additional rail and truck traffic begin to cross the region. "Infrastructure investment in our multimodal freight network is critical to ensure the United States remains competitive with the global market," said Lamie.

Key regional priorities include improvements to Illinois Route 3, a new bridge to carry traffic across the Mississippi River along I-270 north of St. Louis between Missouri and Illinois, a new interchange at I-255 in Dupo, Illinois and improvements to I-64. As many as 20 infrastructure projects along the St. Louis Regional Freightway have been identified as freight priorities. *www.thefreightway.com*


Tampa Yacht


Swiftships

Economics and Utility Redefine Today's Workboat Output

GoM shipyards are meeting the demand for right-sized, multi-mission boats.

By Susan Buchanan

In the last decade, Gulf Coast shipyards have watched demand for multi-mission vessels grow from foreign governments and U.S. authorities. In particular, local counties and municipalities – pinched by shrinking budgets and expanding mission sets – began the march to leverage a single hull for more than one task. And, since these boats can serve military or civilian needs, the need for boatbuilders to quickly adapt a standard hull form to a particular requirement became a highly desired skill set.

"Interest in multi-mission vessels was seen in 2008 and became increasingly apparent in 2009 to 2010," Robert Stevens, CEO of Tampa Yacht Manufacturing in Pinellas Park, Fla., said last month. "Before that, lots of governments weren't particularly concerned with price. But because of geopolitical considerations, authorities have had far fewer resources to devote to the military and defense."

In this case, the 'geopolitics' that Stevens alludes to highlights the influence of political and economic geography on a government. Globally, the economic recession from late 2007 to 2009 and longer in some nations was among

Silverships

the worst of the post-World War II downturns. And with terrorism on the increase in the past decade and continued piracy, governments have found that agile coastal vessels fit their tight budgets.

Closer to home, municipalities pooled their precious resources by using a single platform for SAR, patrol, command centers, firefighting, fish and wildlife management, spill response and much, much more. Cities and counties have had to watch their spending while protecting residents, and that's boosted demand for multi-tasking vessels. This month, ***MarineNews*** looks at how three Gulf Coast shipyards are meeting a growing appetite for these flexible, multi-mission workboats.

Tampa Yacht chooses materials and equipment carefully

"Our main focus is the design, engineering and construction of high-performance, multi-mission military vessels, with platforms offered from 10 to 21 meters in length," Stevens said. "They're custom configured for interception; interdiction; take-down; and VBSS--visit, board, search and seizure."

Tampa Yacht produces the following boats, among others, represented by length in feet: 50MMP- Multi-Mission Platform; 44FCI- Fast Coastal Interceptor; 41MMP- Maritime Police Patrol; 40RHIB-EC- Rigid-Hull Inflatable Boat, enclosed; 36RHIB; 35SPC- Swat Patrol Craft; 35RHIB-EC; 34CCR- Combat Craft Riverine; and 73FCP- Fast Coastal Patrol.

In today's economic arena, yards designing multi-mission military and paramilitary craft grapple with two basics – materials and equipment. "Cost, product history and worldwide availability guide our selections," Stevens said. "We look to use commercial, off-the-shelf or COTS materials and equipment. We employ commercially available products, with proven quality history, and COTS equipment that can be serviced anywhere in world."

Tampa Yacht uses a three-tier, product-sourcing policy for just in-time arrival of equipment and materials to meet its contract delivery promises. "Reliable and reputable materials and equipment provide a commonality to all our vessels and limit warranty exposure and equipment downtime," Stevens said. Drawing from an established vendor base helps the company custom-configure mission needs for each client. "The challenge is to engineer each mission's

Tampa Yacht

"Our main focus is the design, engineering and construction of high-performance, multi-mission military vessels, with platforms offered from 10 to 21 meters in length. They're custom configured for interception; interdiction; take-down; and VBSS--visit, board, search and seizure."

– Robert Stevens, CEO of Tampa Yacht Manufacturing

requirements, using commercial, off-the-shelf equipment and standardizing choices of materials to guarantee a quality product through repetitive manufacturing methodologies," he said.

In 2015, Stevens had the privilege of meeting the First Sea Lord in England, the Royal Navy's professional head and board chairman Admiral Sir George Zambellas. "In our meeting, he explained that, given the geopolitical environment, governments were confronted with severely curtailed military budgets, Stevens said. "That, coupled with the aging of the fleet's legacy craft, would mean they'd need three boats now for the price of two, and each new vessel would have to carry out the missions performed by five craft previously."

Swiftships: on cutting edge with its Corvette

"In years past, larger vessels were required for endurance, seakeeping characteristics, weapons platforms and advancements in technology," Shehraze Shah, CEO at Swiftships Inc. in Morgan City, La., said. "More recently, a reduction in the footprints of major systems has enabled builders to construct smaller, more capable vessels." Foreign militaries are moving to smaller platforms because of shrinking budgets and a need to save on fuel. "Demand has shifted from 5,000-ton ships to 1,500- to 2,000-ton vessels," Shah said.

For over 50 years, Swiftships has built naval platforms, ranging from 25 to 55 meters. Vessels like its 75-meter, all-welded steel Corvette offer a user-friendly, multi-mission platform that can be scaled to meet a client's needs for weapons,

Tampa Yacht

navigation-communication-sensor integration and crew size, Shah said. Unveiled last year, the 1,640-ton Corvette reaches a top speed of 26 knots and can be at sea for 25 days. Alternatively, it can be built with an aluminum superstructure, with a weight under 1,000 tons and a speed of 30 or more knots.

"Our Corvette, in the smallest class of rated warships, offers foreign government clients the most bang for their buck," Shah said. "Taking its name from the Chevrolet model, this high-speed vessel can meet the needs of littoral and blue-water environments and can overcome conventional and asymmetric warfare challenges." Its capabilities include coastal patrol, countering piracy and illegal trafficking, protecting EEZ resources, and conducting naval diplomacy." The Corvette can accommodate a 60-member crew.

EEZs are exclusive economic sea zones, as prescribed by the United Nations Convention on the Law of the Sea. In these zones, a state has rights regarding the exploration and use of marine resources, including energy output.

"The Corvette offers a very low Total Ownership Cost or TOC of operation and sustainability," Shah said. Middle Eastern and North African navies are eyeing the platform because of its flexibility, scalability, modularity and affordability. The vessel contains anti-air intelligence and reconnaissance with anti-surface missiles, and medium and small-caliber stabilized guns with a high rate of fire. It can carry a multi-role helicopter and unmanned aerial vehicles.

"Swiftships is working with the U.S. Department of

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"Not many U.S. shipyards want to get involved in building for foreign clients under FMS. These projects typically have a range of 24 to 40 months from the start of client discussions to the detailed-design award. The build time frame is about 36 months after design completion, with long lead items, particularly in the weapons and sensors suite."

– Shehraze Shah, CEO at Swiftships

Swiftships

State's "Pol-Mil Bureau" to determine which weapons, sensors and multi-mission packages are releasable for clients to complete our final design," Shah said. Under the Foreign Military Sales program, a country contracts with the U.S. Department of Defense for an American-made vessel. The State Department must approve the deal.

Silver Ships supplies patrol-fire response boats

In the U.S. market, multi-mission vessels are typically designed for any combination of fire-fighting, law enforcement, search and rescue, or emergency medical response. "Their effectiveness in service relies on the unique considerations of each mission in the build's design phase and how well they're merged together, without compromising the craft's capability," David Hunt, government business development manager at Silver Ships, Inc. in Theodore, Al., said.

Vessels built by Silver Ships include a delivered, 39-foot patrol-fire response boat for East Hampton, NY; an in-production, 45-foot patrol-fire response boat for Baton Rouge, LA.; and a delivered, 34-foot fire-emergency response boat for Islip, NY.

"The primary design challenge with these vessels is balancing the customer's varied mission requirements and the equipment needed to perform those missions within the space and weight-carrying constraints of the craft," Hunt said. Silver Ships liaises with its customers and end-users to see that all mission needs are integrated into a boat's design and construction.

Multi-mission market: Highly Competitive, Domestically & Overseas

For Gulf Coast builders, the multi-mission business is full of contending yards from around the nation. "Competition to land any contract is often stiff," Hunt said. Shah said for clients overseas, U.S. shipyards can end up competing with foreign companies that have no government scrutiny, but are eligible for government subsidies. "Foreign yards can offer designs and coinciding builds within about two years only," he said.

"Not many U.S. shipyards want to get involved in building for foreign clients under FMS," Shah also said. "These projects typically have a range of 24 to 40 months from the start of client discussions to the detailed-design award. The build time frame is about 36 months after design completion, with long lead items, particularly in the weapons and sensors suite." But, U.S. vessels are still considered top quality in the international market, he said.

Gulf yards are capturing multi-mission business in a competitive arena. And with growing sales to diverse customers, they've moved well beyond supplying boats to offshore oil operators and the U.S. Navy and Coast Guard. As they do, builders are encountering a more diverse and savvy buyer, one with an increasing laundry list of mission requirements. That reality exists here at home, as well as across the 'big pond.'

Finally, and like the U.S. merchant marine which to-

"The primary design challenge with these vessels is balancing the customer's varied mission requirements and the equipment needed to perform those missions within the space and weight-carrying constraints of the craft."

– David Hunt, Government Business Development Manager at Silver Ships

Silverships

day finds itself largely comprised of workboat sized tonnage (albeit for different reasons), the global market for military and law enforcement craft is steadily moving away from the previously ubiquitous 600-foot warship platform and instead embracing the smaller footprint of a faster, shallower draft, more versatile and capable hull. As they do, customers everywhere are discovering that U.S. quality in this sector is second to none, pricing is competitive, and the choices for models and missions; endless.

***Susan Buchanan** is a New Orleans-based business writer, specializing in energy, maritime matters, agriculture, the environment and construction. She holds a master's degree from Cornell University in agricultural economics and an undergraduate degree from the University of Pennsylvania.*

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Marine Finance for BROWN WATER OPERATORS

A primer for navigating the 'ups and downs' of marine money for domestic stakeholders.

By Barry Parker

Vessel financiers are resourceful and adaptable to changing markets. On the domestic side, financiers of Jones Act and "brown water" assets have continued to serve their customers through shifting shoals in both broader capital markets and in the marine markets – both known for their ups and downs. Marine finance can take many forms. In the broadest sense, funding can be done through loans, where the vessel is owned by the borrower, or through leases, where an institution owns the equipment and charters out it out to the customer (sometimes for the life of the equipment).

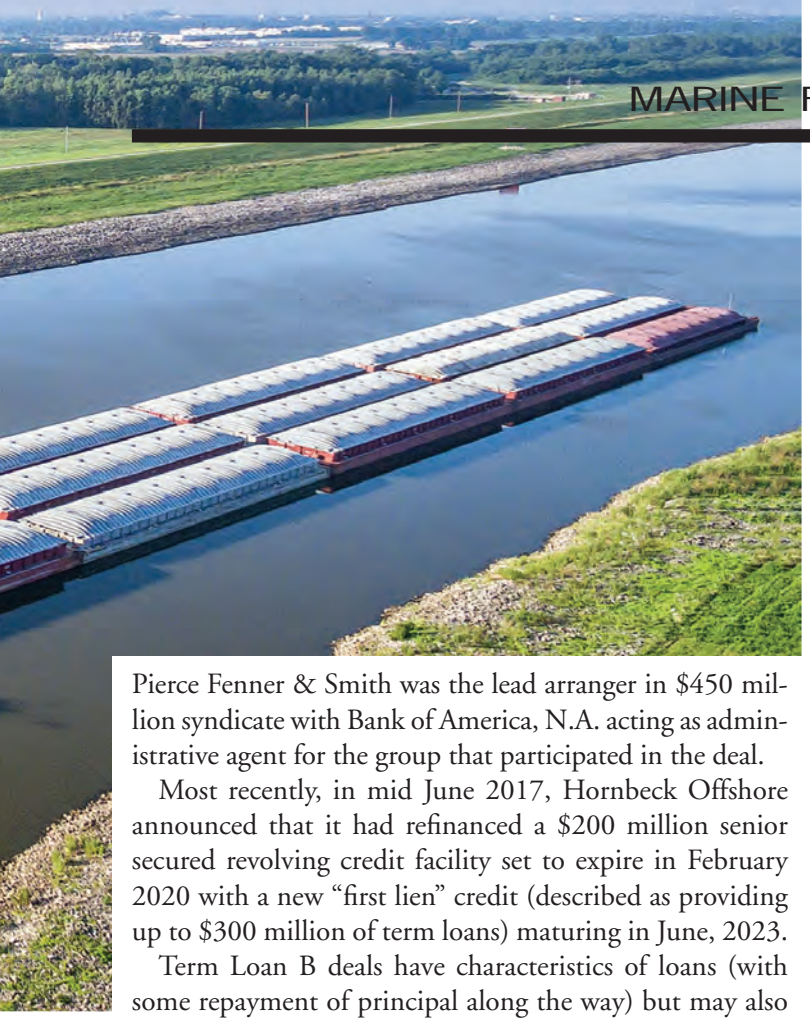
Marine Money & its Origins

Companies with larger balance sheets, approaching $1 billion of asset values, and more, are able to tap into money center bank credit markets through syndicated loans (which might be term loans or revolving credit), from syndicates of major banks, or, more recently from institutional investors (these are called "Term Loan B").

For example, Kirby Corporation, a public company, reveals in a 2017 regulatory filing: "The Company has a $550,000,000 unsecured revolving credit facility ("Revolving Credit Facility") with a syndicate of banks, with JPMorgan Chase Bank, N.A. as the administrative agent bank, with a maturity date of April 30, 2020 ... As of March 31, 2017, the Company … had $177,535,000 of debt outstanding under the Revolving Credit Facility." Kirby has also been able to tap debt capital markets, and its filing notes that: "The Company has $500,000,000 of unsecured senior notes ("Senior Notes Series A" and "Senior Notes Series B") with a group of institutional investors, consisting of $150,000,000 of 2.72% Senior Notes Series A due February 27, 2020 and $350,000,000 of 3.29% Senior Notes Series B due February 27, 2023. No principal payments are required until maturity."

Another well publicized loan deal in recent years, this one with equipment providing security, was Moran Towing & Transportation's senior secured revolving credit facility, which closed in mid 2014. Investment bank Merrill Lynch

Image: Credit AdobeStock / Merek



Pierce Fenner & Smith was the lead arranger in $450 million syndicate with Bank of America, N.A. acting as administrative agent for the group that participated in the deal.

Most recently, in mid June 2017, Hornbeck Offshore announced that it had refinanced a $200 million senior secured revolving credit facility set to expire in February 2020 with a new "first lien" credit (described as providing up to $300 million of term loans) maturing in June, 2023.

Term Loan B deals have characteristics of loans (with some repayment of principal along the way) but may also exhibit bond-style "bullet" amortization (where much of the principal is repaid at maturity). During a 2013 expansion phase, Harvey Gulf International Marine refinanced existing loans and raised approximately $1 billion of credit- that included $600 million of Term Loan B debt.

Larger (balance sheets of $1billion+) non-listed outfits may also seek capital from Private Equity (PE) investors. Harvey Gulf went this route in 2008, when a "middle market" PE house Jordan Company (packager of the "Resolute" private funds), took a majority position in Harvey Gulf to help fuel its transition from a towing outfit to an offshore service provider. Paducah-based Marquette Towing has benefited from multiple investors from the PE sector. In early 2015, KRG Capital Partners, a middle market specialist with a liking for "platform" companies, sold its interest in Marquette, onward to another investor – in this case, BDT Capital Partners, LLC, a private equity arm of Chicago-based BDT & Company, LLC. At the time of the deal, BDT pointed to a long term horizon to fund growth, alongside the Eckstein family, for Marquette Towing. In a theme which runs throughout this article; industry expertise really matters, and it is here where the Richmond, VA office of Harris Williams & Co. (a boutique investment bank with a specialty in transportation, logistics and distribution companies) was instrumental in structuring this deal.

Smaller Companies

Key Equipment Finance, part of Cleveland based KeyBank NA, has been in business since the early 1970s. Paolo de Alessandrini, Senior Vice President at KeyBank, based in the Great Lakes region, told ***MarineNews*** that his team: "knows the industry and the equipment, we are experts." Asked about the longevity of the equipment finance business – Key Equipment Finance (KEF), he said: "We are very careful about our client selection. Credit metrics are critical; they drive the risk profiles." KEF's Director of Commercial Marine Finance, Ronnie Evans, based near Baton Rouge, emphasized this point, saying "Credit is the driver behind today's market, and amortization [the length of time in which a loan is paid back] drives many credit decisions."

Separately, Walter Rabin, President and CEO of Signature Financial (wholly owned by Signature Bank), a veteran of the business, explained the trade-offs between the asset and the corporate side of lending. Active in the finance of inland, coastal and equipment used in harbors, Signature Financial provides both loan and lease finance. They are "…guided by what our customers want," according to Mr. Rabin. Five years after moving over with a team from another bank, his group now numbers more than 100 people.

In a practical rather than legal sense, the lines between leases and loans may blur; for example, a term loan for an asset's entire value (or nearly), over a lengthy time period, may have similar impacts as a lease transaction. KEF's Evans emphasized the point, saying, "Most clients would like to finance for as long as they can; on new assets, we typically see tenors of 7 to 10 years. But the amortization profile, which determines the balloon to be repaid at the end, is also important. It's a big part of the credit underwriting."

Signature Financial's Rabin offered some insights into the considerations that go into lending decisions. He explained, "Similar to other types of equipment finance, we need to think about the financial profile of the client," with the latter touching on issues of corporate credit. Cautioning that each deal has its own wrinkles, he continued, "We start by looking at the value of the asset, considering the structure, the term, amortization profiles, and of course, we look at exits; asking ourselves what steps we might take if something goes wrong." But banking is all about relationships – knowing the customer and its business, as well as the industries they serve. Rabin adds, "We look at borrower, how long they've been in business, and, if there's a charter, we look at the relationship with the client's customer."

"Similar to other types of equipment finance, we need to think about the financial profile of the client. We start by looking at the value of the asset, considering the structure, the term, amortization profiles, and of course, we look at exits; asking ourselves what steps we might take if something goes wrong ... We look at borrower, how long they've been in business, and, if there's a charter, we look at the relationship with the client's customer."

– Walter Rabin, President & CEO, Signature Financial

One Size Does Not Fit All

Cookie cutters don't have a place in marine financing. Evans told ***MarineNews***, "Each deal is a little different." Paolo de Alessandrini chimes in, "As we look at deals, we see increasing opportunities for structured transactions which may go beyond regular credits. These transactions are more complicated than plain vanilla loans between a borrower and one bank and there could be an asset finance component. That's where you need knowledgeable people."

Citing deals where a Signature Financial client's newly constructed equipment might be on a lengthy charter to a utility (or similar), Mr. Rabin said, "We may look through to the credit of the end-user customer, and ultimately get an assignment of the contract. Sometimes we are able to work with a client to create a sounder transaction structure, which may include being paid monthly first through an intercept payment … not always, and it's not a hard request, but sometimes it makes sense." He reminded ***MarineNews***, "Of course, this won't work on a three-year contract on an asset with 10-year life."

Signature Financial's Walter Rabin continued on: "On newly constructed equipment for a good borrower, we might lend with a 10-year term, with up to 20-year amortization," which would leave a balloon payment at the end of the loan term. On advance rates, he said, "For the strong borrower, we could typically lend up to 100% on new asset. If the credit is not so good – we may ask for 10 percent down." Asked about financing second-hand equipment, he mused that, "There is art mixed in with science here; while we are much more cautious on used equipment, we have plenty of industry knowledge that we have leveraged to make appropriate decisions on these types of deals. We may finance based on a 20-year amortization profile for very long-lived assets, and we'd rarely advance more than the orderly liquidation value, which would likely be less than the fair market value (FMV) from a recorded sale."

As far as trends in the marketplace, the KeyBank team pointed to caution related to vessels serving the oil industry. Evans said that banks were closely monitoring deals that had been inked in that sector. He also said that leasing is not as common as it used to be but he noted that customers were increasingly showing a preference for lease deals in situations where their business was in the red. "If they are experiencing losses, they can't really use the depreciation. So they can pass the tax benefits of depreciation off to a lessor, and benefit from a lower interest rate in the form of lower lease payments."

KeyBank's Paolo de Alessandrini highlighted an additional advantage of leasing, telling ***MarineNews***, "Leasing may also be advantageous for compliance with covenants on existing loans."

Signature Financial's Rabin stressed the need to be prepared for the unexpected, citing unanticipated turning points in market cycles which could influence asset values." He pointed out that estimates from expert surveyors who provide estimates of future asset values always include the caveat of being "subject to market conditions."

Ship finance lawyer Mark Lowe, currently counsel at New York based Hill, Betts & Nash, has seen the business from all angles, with stints on the owning side earlier in his career. He told ***MarineNews***, "Where U.S. finance transactions are concerned, the documentation is similar to that of foreign deals. The one exception is where U.S. government guaranteed financing, the Title XI program,

is involved. There, the documents are totally different and considerably more complex and voluminous."

Amy Kyle is a partner in the Boston office of Morgan, Lewis & Bockius. The firm represents financial institutions with a specialty in transportation deals. She told *MarineNews*:, "The corporate structures favored by shipping companies (individual vessel owning subsidiaries) impacts lending structure, calling for a co-borrower or guarantor structure, since the lenders will want to have claims over the asset owning entities (and related collateral). Jones Act citizenship rules continue to have an impact on lending. While a lender can mortgage Jones Act vessels without proving citizenship, restrictions on Non-citizen equity ownership of Jones Act companies can add to complexity."

Who is Active? Where to Look

Where non-listed companies (unlike Kirby, OSG and Hornbeck) are involved, all parties are tight-lipped. A recent deal is the exception. Privately held VanEnkevort Tug & Barge, an operator on the Great Lakes, used $53 million of funding from Key Equipment Finance, plus additional funding from Key Bank's capital markets and syndications group, to acquire a tug/barge combination that had been built by DonJon in 2011, for DonJon's joint venture with Seabulk. The ATB hauls bulk steelmaking commodities around the Lakes, including into Cleveland (where Key Bank is headquartered).

Who else has been active in the market? The United States Surface Transportation Board (which deals primarily with rail transportation) requires that certain debt obligations be recorded. A sampling of recent "recordations" provides a very unscientific window into who is doing what in the world of equipment finance. The database is online at **https://www.stb.gov/recordations.nsf**

Eyes on the Oil Patch

All eyes are on vessels serving the oil patch, particularly in the Gulf of Mexico. Earlier this summer, Hornbeck Offshore Services announced that it had "… refinanced its existing $200 million senior secured revolving credit facility (the "Old Credit Facility") with a new first-lien delayed-draw credit facility providing for up to $300 million of term loans (the "New Credit Facility"). The six-year term of the New Credit Facility extends the maturity of the Old Credit Facility from February 2020 to June 2023." These deals are complicated, but, in essence, Hornbeck – in the grip of a terrible market – has gained more liquidity, and (if you read the fine print) must no longer comply with certain financial ratios that were crafted in better times. Interestingly, the fine print also hints at an intention to use the financing (not cheap, at interest rates of ranging from Libor plus 600 in year 1 to Libor plus 750 in year 5 and beyond, if not prepaid) to pick up downtrodden competitors' distressed assets. The lenders are part of a syndicate administered by Wilmington Trust, NA. One hint of possible participants can be found in the Collateral Agreement, Hornbeck maintains deposits at Capital One, DNB, and Whitney Bank.

https://www.sec.gov/Archives/edgar/data/1131227/000113122717000026/ex-101_06152017.htm
http://hornbeckoffshore.com/company/news/hornbeck-offshore-announces-new-credit-facility-2017

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

2017 Arctic Research Explores the 'Roomba' Approach

By Tom Ewing

The pace and quality of oil spill research in the United States typically ebbs and flows as a function of two, if not three important variables. First, after the 1989 *Exxon Valdez* grounding, there was a flurry of activity to ramp up oil spill research because it had been dormant for so long. The need was recognized, with plenty of money made available. Primarily, this research centered on conventional spill remediation techniques – for example, a tanker or barge spilling oil – and not much else. Predictably, when memory of the spill faded, so did interest in research and funding followed.

A new era of heightened focus on spill response research and testing started with the so-called *Deepwater Macondo* spill. Stakeholders quickly lamented the dearth of recent research. Even those who could point to what had been done since the *Exxon Valdez*, also couldn't deny that much of this work was not well aligned with events and situations then happening in the U.S. Gulf of Mexico. Research had largely stopped a decade before. A new call went out for robust research, and this new commitment is delivering results.

Today, the chances of oil spills become more likely as previously permanent sea ice diminishes in the Arctic and as maritime activity in the region increases. To be ready, the U.S. Coast Guard places a high priority on developing options for recovering oil in the Arctic. To that end, an important research project took place this August during the Coast Guard's annual science patrol aboard the cutter Healy, the United States' newest and most technologically advanced polar icebreaker.

Arctic West Summer 1701

'Arctic West Summer 1701' started July 20 and concluded August 17 when the Healy returned to Seward, AK. The research agenda was extensive, including autonomous surface, underwater and aerial vehicles, an electrically powered shore transfer craft and a passive millimeter wave camera.

Critically, in addition, the research agenda included testing the capabilities of a self-propelled oil skimmer – the Aqua-Guard Triton RotoX – designed and built by Aqua-Guard, based in Vancouver. The Healy team wanted to evaluate the skimmer's maneuverability, buoyancy and ability to move among broken ice. Ice floes present a fragmented and scattered seascape, adding a dangerous variable to an already challenging environment. In these conditions, oil that could otherwise be recovered may be inaccessible to crews and equipment.

"Recovering oil in broken ice is the challenging part," Chief Petty Officer Angela Vallier, a member of the strike force team, said in a CG report. "We have proven technology in open water and proven technology in packed ice, but those technologies would be inefficient in broken ice." During the trials, the skimmer easily propelled itself through the ice floes and its thrusters provided ample power, the CG reported. However, ice-cutting teeth, designed to chop the ice into small pieces, did not work as well as expected.

"The testing of these technologies is extremely important to ensure the capability to deal with an incident is available in the future should one occur," said Scot Tripp, the chief scientist aboard the Healy during the skimmer trials. "Each time we test a technology, we get a better handle on its capabilities and its limitations."

The testing was a joint effort between Coast Guard RDC, Coast Guard National Strike Force, Navy Supervisor of Salvage and Diving, the Oil Spill Recovery Institute of Cordova, Alaska, and Coast Guard Cutter *Healy*.

The Aqua-Guard RotoX Skimmer

Importantly, Aqua-Guard's RotoX skimmer was not originally designed for Arctic operations. The Arctic equipment was a modification; an advancement of Aqua-Guard's RBS-TRITON, or rotating brush skimmer, technology. The RotoX is designed to macerate (soften or separate a mixture); in this case, large oil solids, into constituent elements, then recovering the slurry and pumping it out of the water. Company co-founder and principal, Nigel Bennett, explained that the system is designed to break up and recover ultra-heavy oil/sludge floating islands.

Bennett said that his company became part of the Arctic West Summer 1701 expedition after Coast Guard staff from the Research & Development Center (RDC) viewed a video of the RotoX, operating in ultra-heavy oil. That video was presented at the International Oil Spill Conference in Long Beach, last May.

"RDC had solicited companies," Bennett explained, "with the request to get an operational skimming system with thrusters to Alaska by mid-July for the 2017 Arctic Technology Evaluations, but no entity was able to fulfill the deadline request."

Subsequently, Coast Guard personal contacted the Aqua-Guard team in Vancouver. Bennett said Aqua-Guard's team "jumped on the opportunity to have a RotoX tested in ice" and they built and tested a skimmer modified for Arctic operations in time for the Healy's departure. He said that given the machine's history of successful operations in heavy oil, the next step was testing in ice. Regarding operations, company officials said "as long as it is safe for operation crews to be on deck, then our skimming system can be used." RotoX recovers a complete range of oils, from light diesels to ultra-heavy crude. The system can be deployed from a trailer, skid or from a ship or barge.

Broad Based Coast Guard Research

To be fair, this is not the Coast Guard's only ongoing ice-oil research. Other projects include a cage-management system that separates ice from oily water. Work is also ongoing in the Great Lakes, started in 2010. Coast Guard staff said that tests by the Bureau of Safety and Environmental Enforcement (BSEE), in a controlled facility, indicate that skimmers can be effective in up to about 30-40% ice *if the system can get to the oil*. After that, performance declines quickly with 60-70% of ice, again due to accessibility to the oil. Mobility – getting to the pollution – is critical.

As most mariners likely know, in the United States, oil cannot be deliberately spilled or discharged into open waters even for research and testing and, accordingly, the AWS 1701 expedition did not include actual oil recovery. And, the *Healy*'s 2017 expedition was in US waters. (Norway, reportedly, is the only country that allows such tests, but under strict controls.)

For this mission, the primary goal was to demonstrate the ability of the skimmer to (1) maneuver around larger icebergs and (2) using the dual onboard thrusters to displace smaller icebergs. Indeed, this up-close navigation worked as the skimmer moved itself into small pockets of water where oil would pool in the event of a spill. Actually, and to demonstrate how closely this natural environment was reviewed, the Healy team did find a tiny sheen of oil. They concluded it came from a hydraulic fitting. Quan-

Nigel Bennett, Cameron Janz (CEO) and Lee Marshall (production manager) accepting the RBS TRITON business excellence award.

ROTOX working in heavy oil in a pit in Venezuela several months ago.

tity: a few drops only.

In an ice-strewn environment, the independent mobility of the oil recovery equipment is critical, so the cutter or icebreaker does not need to move, reposition or otherwise control the skimmer. When the icebreaker moves it changes the seascape, pushing the surrounding ice and potentially eliminating the chance to recover pockets of oil. Similarly, by remaining stationary, an icebreaker does not move itself into contamination. A remote skimmer can keep the icebreaker farther away from oil so the ship's propellers or bow thrusters do not pull oil into the water column.

Summing Up & Looking Ahead

The initial Arctic RotoX mobility tests were encouraging. A Coast Guard news release on the project reports that "during the trials, the team discovered that the skimmer easily propelled itself through the ice floes and the thrusters provided ample power." Aqua-Guard personnel were not aboard the Healy for the 30-day voyage. However, a technician did participate in installing the RotoX on the Healy and for training CG operators. Bennett said the RotoX system "met and exceeded expectations" regarding tests for maneuverability.

Coast Guard personnel prepared an "After Action Report" detailing the RotoX's strengths and weaknesses, but the full text is not yet available. Initial reports noted some problems with the ice-cutting teeth designed to chop ice into small pieces. This part of the equipment requires further work. But in the Arctic, this could be a challenge of scale. Bennett noted that the "ice cutting mechanism is not intended to macerate icebergs." Rather, current equipment is intended to "chop up smaller ice chunks into slush with the intention of positioning the skimmer into pockets of spilled oil."

In the meantime, Bennett said that R&D continues, focusing on improving the ice cutting functionality. He said the data collected during the Arctic tests is invaluable for

further development. Without saying when, Bennett predicted that "the system, with a few minor adjustments, will be ready for market with regards to arctic oil spill response as the standard RotoX is already on the market."

Today, as in the post-*Exxon Valdez* and post-Macondo eras, there is a heightened state of awareness about environmental contamination in the undisturbed Arctic. This new awareness has propelled a quicker pace of research into better and more site-specific spill response techniques. Stakeholders understand that a spill in the Arctic would be catastrophic unless the tools are available to combat such an unwelcome crisis, should it come. To that end, efforts are underway in many sectors to ensure that spill equipment is viable, available and – critically – proven to work.

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

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Elastec's Grooved Skimming Technology

A Turning Point in Oil Spill Recovery.

By Linda Henning

Cleaning up marine oil spills can be a challenge as there are various types of oil spilled but only a few effective recovery methods. The three main technologies for oil spill recovery for inland and offshore waters are mechanical, insitu burning (ISB), and dispersant application. Absorbent booms and pads may also be used, but they are more effective for small fuel spills.

Mechanical recovery, usually an oil skimmer, is a device that skims contained floating oil and transfers the recovered oil to a storage container or vessel. Selecting the appropriate oil skimmer depends upon the oil's viscosity, slick thickness, adhesive characteristics and weathering properties. Sea states and the ability to access and encounter the oil are also important factors, among others. It is possible that more than one type of skimmer may be needed on a single spill.

No "one-size-fits-all" skimmer

Since there are various types of oils, from crude to refined, as well as various types of environmental conditions, there is no "one-size-fits-all" skimmer. Oil viscosity is one of the most critical parameters affecting a skimmer's recovery performance. At opposite ends of the viscosity spectrum are light and heavy oils. Gasoline and diesel fuel as well as Bakken crude are light oils. They spread and evaporate quickly. Heavy oils, such as bunker and bitumen, are more viscous and can cause more environmental harm as they linger longer and may even sink. Medium viscosity oils are, well, in the middle and are somewhat easier to recover mechanically.

Oil skimmers come in all sizes, configurations, combinations and materials: drums, discs, ropes, brushes, belts, weirs, suction, aluminum, steel, polymer, pneumatic and hydraulic. Oleophilic polymer skimmers generally recover a higher ratio of oil relative to water and are also effective in recovering medium viscosity oils. In 1990, Elastec, an environmental equipment manufacturer in Carmi, Ill., perfected the oleophilic smooth drum skimmer which remains an industry standard today due to its high oil recovery rate and recovery efficiency (oil-to-water ratio).

***All images courtesy Elastec**

Grooved Drum Skimmer

In 2005, at the University of California's Bren School of Environmental Science and Management in Santa Barbara, a graduate student with an interest in oil spill recovery and Dr. Arturo Keller were theorizing that by adding grooves to the surface area of a drum skimmer, the volume of oil recovery could possibly be increased.

Working with Elastec, the team tested both smooth and grooved drum surfaces in oil at the National Oil Spill Response Test Facility (OHMSETT) in Leonardo, NJ. The results concluded: "The use of a proposed grooved pattern can increase the recovery efficiency up to 200%. The grooved pattern was proven to be efficient even on diesel, which is a challenging product to recover due to its low viscosity. The recovery efficiency of a grooved surface can be additionally improved by tailoring the groove dimensions to specific oil properties for a particular region and climate."

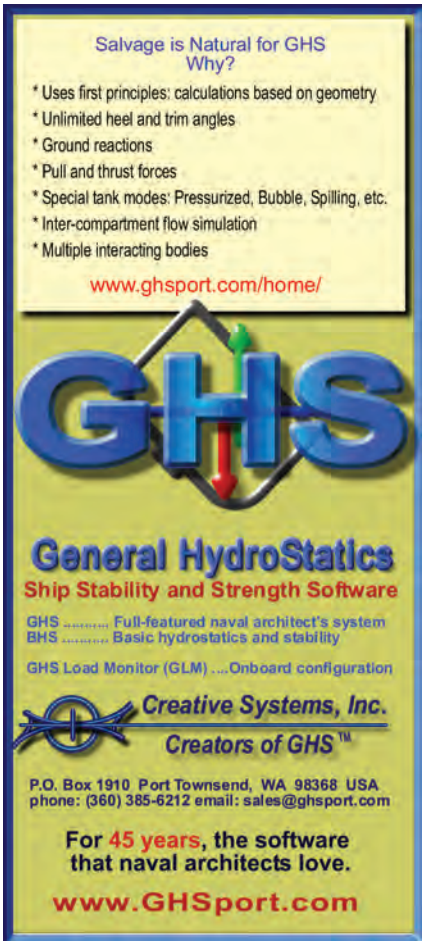
Armed with research, testing and a patent, Elastec developed a commercial version of a grooved drum skimmer which proved to be effective with both light to medium oil types.

Award-Winning Grooved Disc Skimmer

On April 20, 2010, a violent explosion occurred in the Gulf of Mexico approximately 42 nautical miles offshore from Southeast Pass, Louisiana. The fiery blast was caused by an underwater blowout from the Deepwater Horizon drilling rig, gushing millions of gallons of Louisiana crude into the Gulf. Eleven lives were lost and numerous others were injured. It was the worst offshore oil spill in U.S. history.

Elastec's Hydro-Fire Boom and American Fireboom systems were two of the most effective Insitu Burning (ISB) technologies in the Gulf Spill. However, it was noted that mechanical oil spill recovery techniques in the Gulf had not changed significantly since the 1989 Exxon Valdez spill in Alaska.

Elastec had been contemplating transferring its grooved skimming technology from a drum to a disc to recover even higher volumes of oil before 2010. However, the demand for such a high-volume skimmer was non-existent; therefore, the research and development investment did not have an attractive return potential – until the Deepwater Horizon incident.



Philanthropist Wendy Schmidt and the X Prize Foundation also saw the need for an improvement in mechanical oil spill recovery in the aftermath of the disaster and developed the Wendy Schmidt Oil Cleanup X CHALLENGE with a one million dollar first place prize. The Challenge was "designed to inspire a new generation of innovative solutions that will speed the pace of cleaning up seawater surface oil resulting from spillage from ocean platforms, tankers, and other sources." Elastec saw the prize as an incentive to recoup R&D expense and developed a prototype skimmer with 64-grooved discs. The effort paid off as Elastec won first place by recovering 4,670 gallons of oil per minute with an 89.9% efficiency.

Scalable Grooved Disc Skimming Technology

Elastec's award-winning and patented Grooved Disc Skimming technology was scaled to develop several commercial skimmer models to accommodate a range of realistic spill scenarios. Its workhorse, the X150 Grooved Disc Skimmer, has ten discs offering a high oil encounter and recovery rate in advancing or stationery modes. Tested at Ohmsett, the X150 has an oil recovery rate (ORR) of 660 gallons per minute (150 cu m per hour) and an oil recovery efficiency (ORE) of 87.6%.

For offshore and open water spills, the X150 Launching System is a turning point in mechanical oil spill recovery technology with its fully integrated remote controlled X150 skimmer launcher, complete with boom and reel, BoomVane (for one vessel towing), power unit and hydraulics – a turnkey operation to quickly load onto service vessels for rapid high volume spill response.

The X30 and X45 Grooved Disc Cassettes have two and three discs, respectively, for bow and side skimming operations. The X30 configuration was recently tested at Ohmsett in light oil in advancing mode, up to two knots with impressive results. The Grooved Disc Cassettes are more effective than brush skimmers in picking up light oils such as Bakken.

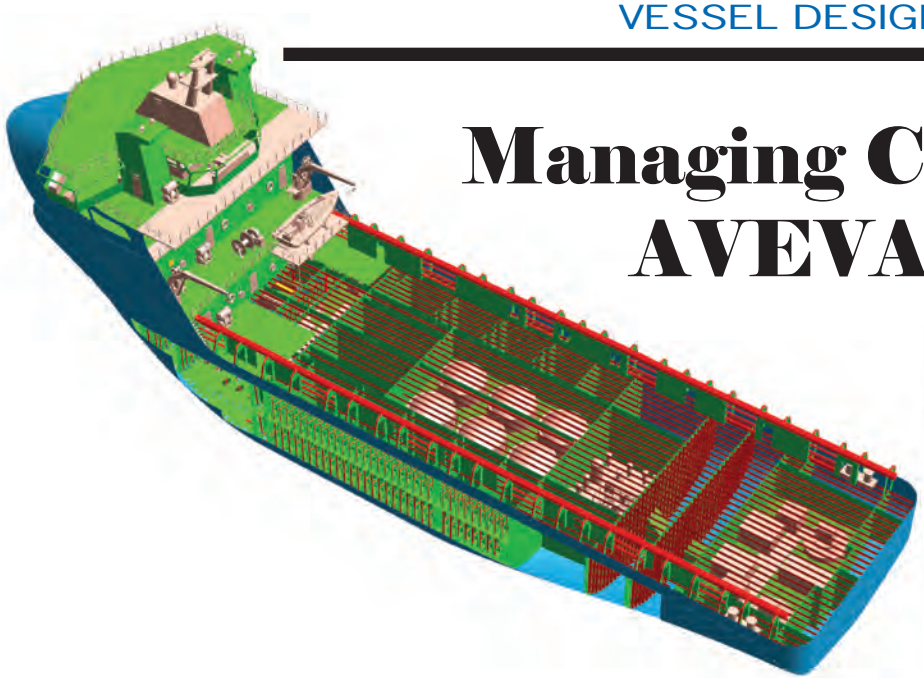
An evolution in skimmer technology, Elastec's grooved discs complement its grooved drum skimmers as they both have their advantages. Additional performance tests were conducted at Ohmsett recently on Elastec's Magnum 200 grooved drum skimmer. The 4-drum device can recover a wide range of oil types. Even with its larger design for inland, harbor, open water and offshore recovery, it is lightweight and easy to deploy, as are all Elastec skimmers.

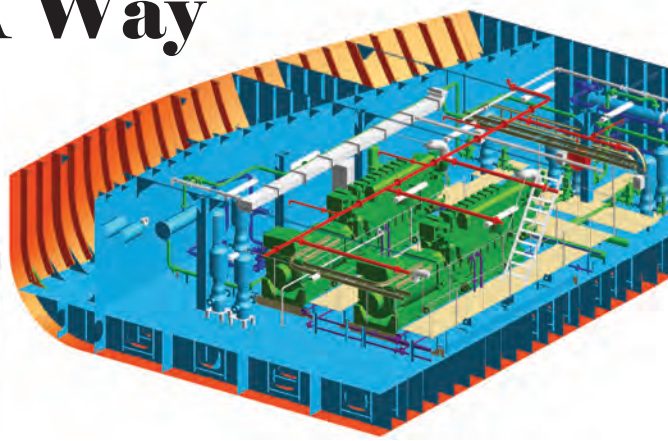
Verification of Nameplate Claims & System Performance

Although simulated testing (such as at Ohmsett) to verify skimmer nameplate oil recovery rate is important, the overall skimmer "system" performance should be evaluated as well. Oil encounter rate, throughput efficiency, pump capacity, water volume collected, storage capability and even how much oil was not recovered are critical to the complete mechanical oil recovery process. The Bureau of Safety and Environmental Enforcement (BSEE) provides an Estimated Recovery System Potential (ESRP) calculator for evaluating mechanical skimming systems.

Linda L. Henning *is Elastec's Marketing Director. She can be reached at lhenning@elastec.com*

Managing Change the AVEVA Way





Addressing the Need for Better Efficiency When Managing Change

By Stéphane Neuvéglise and Gabriel Powell

In today's marine-scape of declining newbuild activity, many boatbuilders are seeking to buoy up productivity by reducing time to market. But how do you go about contracting intricate concurrent design and production flows without loss of quality, let alone the risk of production spiraling out of control?

The general tendency is to overlap design phases. However, this potentially creates a greater number of uncertainties. Ship design includes multiple disciplines and specialties in spiraling activity cycles. Interaction between these cycles is not always made simple, especially when teams are spread across the globe. Indeed, accelerating these spirals can leave teams out of sync when upstream design amendments are carried out. For example, if a new engineering constraint is integrated into the design phases, it will inevitably have a knock-on effect on the choice of material and production techniques. And what if the design update arrives too late? The consequences in terms of material cost and delay can be disastrous.

This is why, in a context of accelerated cycles, there is an even greater need to facilitate rapid interaction between engineering and design phases, to ensure that production teams can be provided with higher quality designs. To this end, shipyards need to incorporate design and flow management tools to populate adjustments of the various design phases in a synchronized manner.

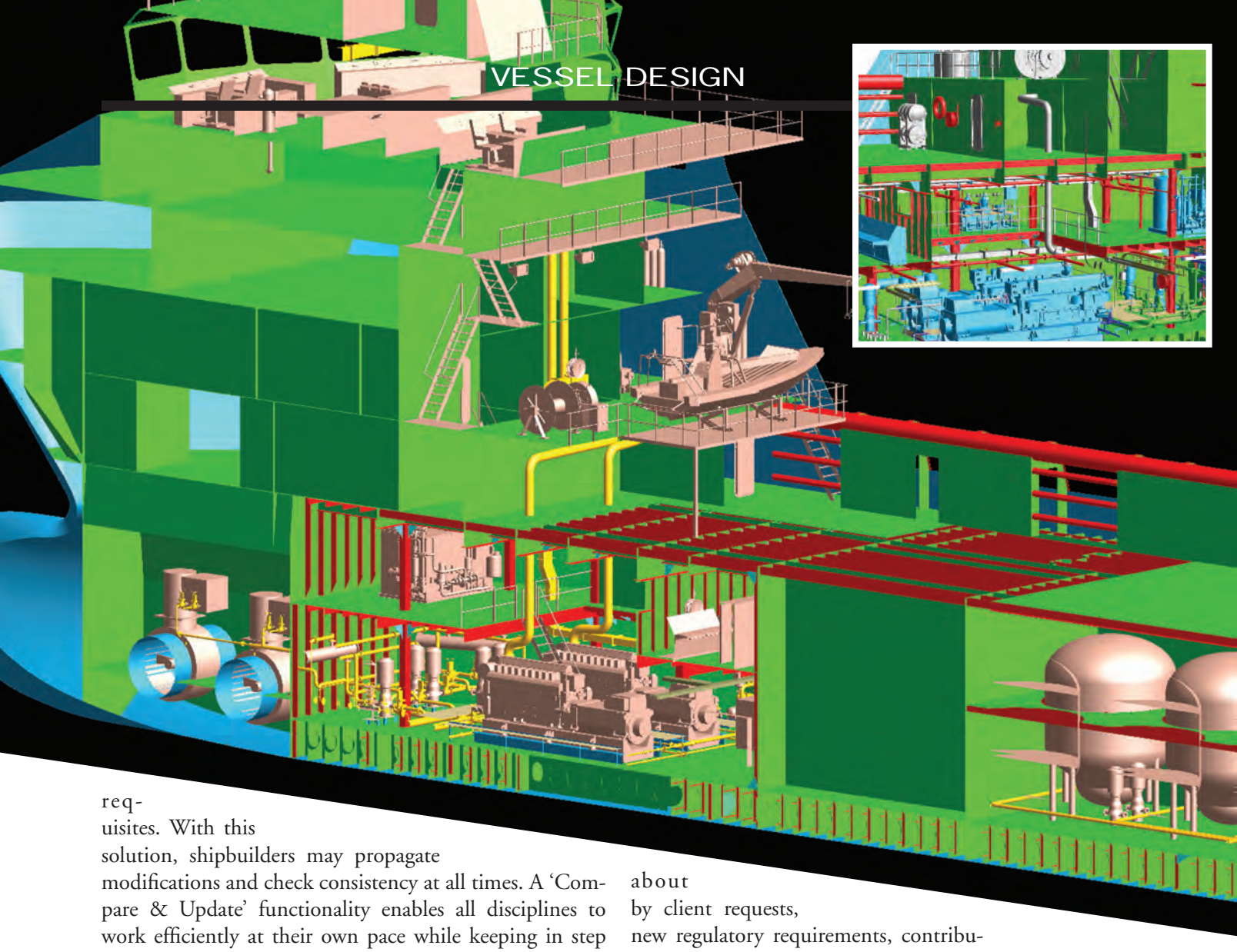
According to Semih Zorlu, General Manager of SEFT, "You have to be confident that all the systems are correctly integrated in the hull and that clashes have been eliminated before you start building the vessel." And it is essential to allow a rapid propagation of such changes before production boosts. This means tracking modification effects across the board from engineering to design phases without affecting production or the quality of the input to production.

AVEVA's Answer

The solution to achieving a synchronized and efficient integration of engineering and design information requires three essential capabilities. These are:

- *enabling engineering and design information to be shared collaboratively by all disciplines*
- *enabling that information ownership and changes are robustly controlled*
- *enabling information maturity status clearly visible.*

AVEVA Marine has developed a unique Integrated Engineering and Design solution that brings together these



requisites. With this solution, shipbuilders may propagate modifications and check consistency at all times. A 'Compare & Update' functionality enables all disciplines to work efficiently at their own pace while keeping in step through periodic, controlled comparisons of their work.

Changes are highlighted, enabling effective prioritization of effort by each discipline to eliminate inconsistencies in a controlled manner. For example, when designing an OSV, a process engineer will develop the schematic design of the water ballast system. This is translated into a 3D pump and piping layout by the outfitting designer, who must also provide cableways for the Electrical & Instrumentation engineer's needs and negotiate bulkhead penetrations with the hull designer. Each of these specialists has their own uncertainties to eliminate and, in doing so, will make changes that can impact the work of the others.

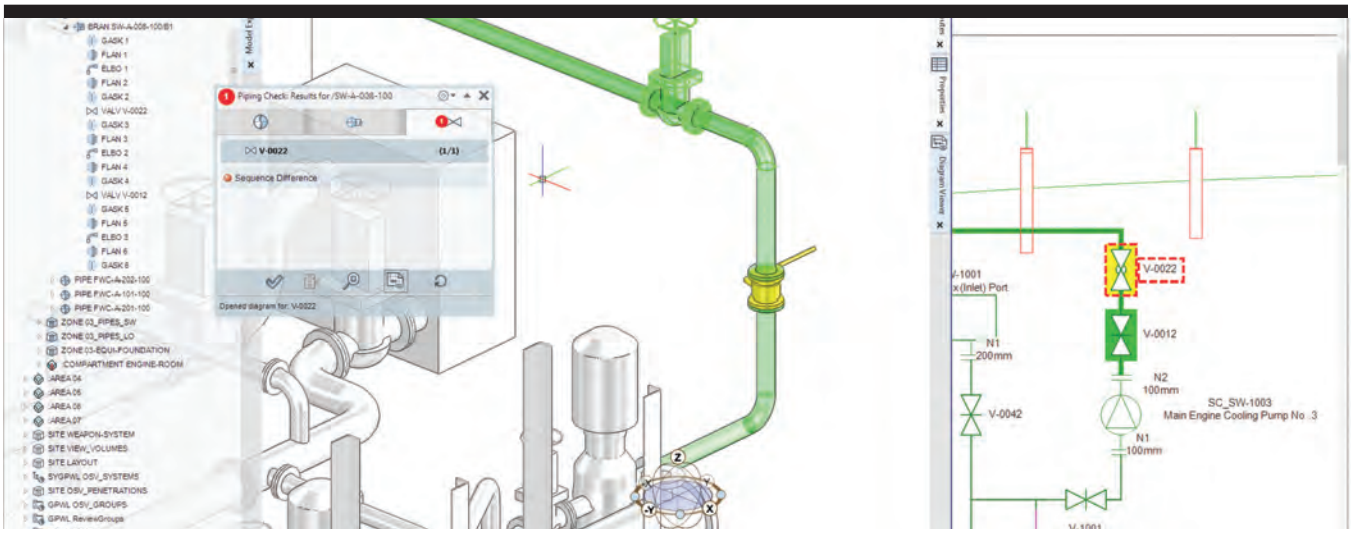
Better Design Spiral with Greater Consistency

AVEVA's Integrated Engineering & Design solution allows shipbuilders to maintain full control of their design implementations and to manage amendments quickly and efficiently. The synchronized design phases make it possible to easily manage punctual changes – changes brought about by client requests, new regulatory requirements, contributor divergence and supplier defaults.

Increased overall visibility and improved change management results in compressed design integration time, while at the same time improving end design quality. Zorlu adds, "It was very easy to implement revisions and create new drawings when needed and, as a result, production costs were controlled. AVEVA Outfitting enabled us to efficiently create all the machinery and propulsion elements in the vessel."

Compare and Update

Unlike design tools that rigidly impose rules at every step, the flexibility provided by the Compare & Update function – included in the Integrated Engineering & Design solution – enables provisional, non-compliant design information to be created and revised in a controlled manner. This facilitates response to change, whatever the cause. For example, a late-emerging requirement to use different engines can be assessed for impact by inserting 3D models imported from



the vendor's CAD system. The various clashes with hull structure and outfitting will be immediately apparent but will not prevent the new engine models from being added. Design revisions can then be carried out efficiently with all affected disciplines able to see the necessary changes.

'Compare & Update' provides the necessary functionality for a design-spiral workflow that embraces all project participants. It can be extended to multisite projects by the use of AVEVA Global, and is delivered with practically all modules within the AVEVA Marine suite of applications. In this way, design departments can provide results of higher quality and consistency to production teams more quickly.

Case Studies

VARD operates nine shipbuilding facilities, all of which use AVEVA Marine for the design and production of every type of vessel. VARD chose the full AVEVA Marine solution, because it was considered to be the best option that could address their requirements. The solution, combining AVEVA Marine and AVEVA Global, supports efficient multi-site engineering and design processes from early and basic design, through detailed hull and outfitting design, to the automatic creation of manufacturing data and drawing documents.

VARD offers a wide range of offshore and specialized vessels, especially in the high-end, complex vessel sector with significant customer-specific adaptations. Senior Vice President of Technology & Engineering, Stig Sandanger Riise, said, "Our designs for complex projects offer a flexible configuration which makes it possible for the ship owner to make a late final selection of on-board equipment and systems for the vessel's specific mission. We cooperate closely with shipowners and we often have to meet demands from them for late modification in the design stage and often even during the fabrication stage."

Vard managed to reduce the calendar time needed for design by 30%. Stig Sandanger Riise added: "By implementing the AVEVA Marine software solution we have started a process of creating structured ship model data that can be used throughout the VARD group for efficient design and production."

Separately, AVEVA's Integrated Engineering & Design software is helping Canada-based shipbuilder Chantier Davie turn a container ship into an auxiliary oil replenishment vessel for the Canadian Navy. Using AVEVA Global they are able to concurrently plan, design, construct and deliver the vessel in just 24 months.

The pace of the project is such that no individual could manage on their own without the help of AVEVA ERM, which made it possible to easily identify and solve problems. Integrated procurement and job card planning, along with tracking using AVEVA ERM, increases the efficiency of production teams. It also provides better visibility of warehouse priorities when critical items are received.

"We are making use of the AVEVA system […] to prevent silos of information forming," said Lindsey Kettel, Vice President Business Processes. "This enables us to anticipate problems earlier and resolve them faster, to limit impacts to production activities. The result is a more cost-effective program being delivered on schedule."

Stéphane Neuvéglise *is a Product business Manager at AVEVA. He holds a degree in Marine Engineering & Naval Architecture from Ecole Nationale Supérieure de Techniques Avancées in Paris, France.*

Gabriel Powell *is AVEVA's Business Development Manager. He is a graduate of Texas State University with a BBA in Marketing, and received an MBA from the University of Houston.*

RIBCRAFT DELIVERS NEW 41' MODEL

Robust, Multi-Missioned, and All-New.

RIBCRAFT recently introduced the all new 41' RIBCRAFT 12.5 with the recent delivery of a specialized USCG Sub Chapter T Certified tour boat to a customer in New England. At 41', the RIBCRAFT 12.5 is the newest and largest model in the RIBCRAFT model line. The ultimate offshore platform for tour operators, security and patrol operations, military applications, and discerning recreational boaters, the 12.5 combines RIBCRAFT's signature deep V hull and bow sheer with an extended waterline and generous beam. Designed for offshore passages and operations requiring large crew and payload capacities, this flagship model offers incredible flexibility to meet the specialized needs of every customer. The most recent 12.5, configured for passenger-for-hire operations, was built to United States Coast Guard Sub Chapter T standards for passenger vessels.

Delivered to a tour company in New England, the boat will run whale watching expeditions, sightseeing tours and thrill rides. The new 41' USCG certified vessel can accommodate up to 34 guests through the combination of 29 jockey-style pod seats and a large aft bench. Outfitted for adventure tours, this RIBCRAFT 12.5 features an eye catching heavy duty yellow Hypalon tube, extended canopy top with an integrated swim ladder, bow thruster, and a marine head. Powered by triple 350HP Mercury Verado outboards, the RIBCRAFT 12.5 reaches speeds in excess of 50 mph while still providing responsive and agile handling that customers expect. The 12.5 is also available with twin inboard diesel I/O or water jets. With an optional thruster, the 12.5 delivers tight quarter maneuverability. The all new RIBCRAFT 12.5 is available in multiple configurations to suit both commercial and recreational customers. Whether as a USCG Inspected vessel with passenger seating, an open center console layout for commercial diving and sailing support, or a fully enclosed cabin for all weather protection and overnight accommodations, the all new RIBCRAFT 12.5 performs well in any role. ***In other words – the ideal multi-missioned workboat.***

The 41' Ribcraft 12.5 at a glance (as delivered) …

Fuel Capacity: 450 gallons	Marine toilet with holding tank	Pod seats: 29
LOA: 41'-00"	Triple Mercury Verado 350HP	12V outlet
Beam: 11'6"	T-top electronics box and courtesy lights	AIS, Radar, VHF
Internal Length: 36'1"	Forward tow post	Vetus bow thruster
Internal Beam: 8'2"	Service: USCG subchapter	Passengers (Max): 34
Tube Diameter: 22°	Garmin GPS with sounder	Transom bollards
Air Chambers: 11	Maximum Speed: 50+ mph	Max HP: 1050

USACE's High Speed Survey Vessel

Technology Associates, Inc. (TAI), a New Orleans, LA based Maritime Solutions Company, has completed the contract for the Design and Construction of a High Speed Foil Assisted Hydrographic Survey Vessel. The US Army Corps of Engineers (USACE) Baltimore District accepted delivery of the vessel on August 11, 2017. The all-aluminum foil assisted catamaran has been named "S/V Catlett" and measures 61'-4"length overall, 24 ft beam. It is designed to serve its primary mission to conduct hydrographic surveys using sophisticated multibeam and single beam sonars. The Hydrographic Survey Vessel was fabricated jointly with subcontractor Aluma Marine at its facilities in Harvey, LA. Built and designed and built to Lloyd's Special Service Craft rules, it is equipped with 1,970 BHP MAN V8 propulsion engines which turn two Hamilton waterjets allowing for quick mobilization and response at high speeds in excess of 38 knots and survey speeds up to 10 knots.

The vessel's Hydrographic Survey capabilities features SONIC 2024 Multibeam sonars and single frequency sonars mounted inside a retractable survey pod. The vessel has a galley, mess, and sleeping accommodations. The Foil Assisted Catamaran system offers high speeds with minimal installed BHP and fuel consumption. This configuration with a 400 NM range and swift speed capability makes such a craft a perfect application for Near Coastal and Harbor Patrol, Interdiction and Search and Rescue. TAI has a patrol boat variant design of this vessel.

Final of Three Foss Ice Class Ocean Tugs Christened

The final of three state-of-the-art Arctic Class tugs, the Nicole Foss, was christened earlier this summer at the Foss Waterway Seaport in Tacoma, WA. Built at the Foss Rainier, OR. Shipyard, the Nicole is designed to operate in the extreme conditions of the far north, and will enter service this summer. Foss President and CEO John Parrott made opening remarks, praising the hard work and dedication of the people, designers, and customers that made the project possible. The Nicole Foss is ice class D0, meaning the hulls are designed specifically for polar waters and are reinforced to maneuver in ice. The first of the three Arctic tugs, the Michele Foss debut in 2015, and in her first year of operation lead the way in safely pioneering a new route across the North Slope, while operating in extreme conditions of first year ice a meter thick. The Denise also returned to the far north this summer. The Nicole Foss complies with the requirements in the ABS Guide for Building and Classing Vessels Intended to Operate in Polar Waters, including ABS A1 standards, SOLAS and Green Passport. She includes

two environmentally responsible Caterpillar C280-8 main engines; a Nautican nozzle and rudder system to provide superior bollard pull and maneuverability; and Reintjes reduction gears. Markey Machinery supplied the tow winch. The tug has a bollard pull of 221,000 pounds. The vessel incorporates several environmentally focused designs and structural and technological upgrades, including:

Elimination of ballast tanks, so there is no chance of transporting invasive species
Holding tanks for black and gray water to permit operations in no-discharge zones
Hydraulic oil systems compatible with biodegradable oil
Energy efficient LED lighting
High-energy absorption Schuyler fendering

ESG Hosts Steel Cutting Ceremony with NYCDOT Staten Island Ferry Division

Eastern Shipbuilding and the City of New York Department of Transportation (NYCDOT) Staten Island Ferry Division and Eastern Shipbuilding Group, Inc. (ESG) cut steel in late August, starting the construction of the first of three new Staten Island Ollis Class Ferries. The steel cutting ceremony of the 320' Ollis Class Ferry took place in Eastern's steel processing and pre-fabrication building at its Allanton facility in Panama City, Florida. This indoor facility supports both of Eastern's new construction facilities with state of the art numerically controlled equipment, and a highly skilled workforce. The project engineering staff from the firms of Elliott Bay Design Group and Glosten Associates were also in attendance. Eastern selected Guido Perla & Associates to produce the detailed design work. Eastern will construct and deliver three (3) new Staten Island Ollis Class Ferries to NYCDOT and the Staten Island Ferry Division. The three (3) Ollis Class double-ended 4500 passenger ferries, are from a preliminary design provided by Elliot Bay Design Group, with each ferry featuring four (4) Electro-Motive Diesel (EMD) 12-710 Tier 4 compliant propulsion engines with two (2) engines powering one (1) Reintjes DUP 3000 P combining reduction gears and one (1) 36 RV6 ECS/285-2 Voith Schneider Propellers at each end of the vessel.

The Ollis Class Ferries at a glance …

Length Overall: 320'	Minimum Seating Capacity 2	Draft to DLWL: 13'-0"
Beam, Molded: 70'	Maximum Passenger Capacity: 4	Installed Horsepower: 9,980 HP
Beam over Guards: 70'	Fuel Oil Capacity: 30,000 gallons	Propellers: Voith Schneider
Light Ship Weight: 2	Displacement Subdivision 3: 380 LT	Crew: 16
Gross Tonnage: 4	Depth at Main Deck at Side: 21'-6	Class: ABS / Subchapter H

Bollinger Delivers 25th FRC

Bollinger Shipyards has delivered the USCGC Jacob Poroo, the 25th Fast Response Cutter (FRC) to the U.S. Coast Guard. The Coast Guard took delivery on the 5th of September 2017 in Key West, Florida. The vessel's commissioning is scheduled for the 8th of November in New Orleans, Louisiana. The 154 foot patrol craft USCGC JACOB POROO is the 25th vessel in the Coast Guard's Sentinel-class FRC program. The FRC has been described as an operational "game changer," by senior Coast Guard officials. Bollinger used a proven, in-service parent craft design based on the Damen Stan Patrol Boat 4708. It has a flank speed of 28 knots, state of the art command, control, communications and computer technology, and a stern launch system for the vessel's 26 foot cutter boat.


Blanchard


Bekkenes


Cernak


Buzby (L) & Chao (R)


Busch

Port of Stockton's Blanchard Named APP President

The Port of Stockton announced that Port Commissioner **Dr. Elizabeth Blanchard** has been named President of the Association of Pacific Ports (APP) for 2017-18. Blanchard has been involved with the APP since she was named Port Commissioner at the Port of Stockton in 2008. The APP is a trade association that provides education and information to promote the efficiency and effectiveness of Pacific Ports.

President of Palfinger Marine Steps Down

Styrk Bekkenes, President of Palfinger Marine, has stepped down from his position, leaving the helm to his successors. Coming from the role of CEO of Harding Safety, Styrk has been the President of Palfinger since January of this year. Styrk spent most of his time as the firm's President integrating the company's several acquisitions in order to create one strong supplier of deck equipment.

Port Everglades' Cernak Elected Chairman of Florida Ports Council

Port Everglades Chief Executive/Port Director **Steven Cernak** has been elected chairman of the Florida Ports Council. Port Tampa Bay Director **Paul Anderson's** term ended as of this meeting. PortMiami Port Director and CEO **Juan Kuryla** was elected as vice chairman and Port of Palm Beach Executive Director **Manuel Almira** was elected secretary/treasurer. Cernak joined Port Everglades in March 2012, previously serving as the port director and chief executive officer for the Port of Galveston, Texas.

Buzby Sworn In as Maritime Administrator

Secretary **Elaine L. Chao** has sworn in Rear Adm. **Mark H. Buzby**, USN, Ret. as the Administrator of the Maritime Administration. A career Naval officer with over 34 years of service, Buzby also served as the Commander of the Military Sealift Command (MSC). A 1979 graduate of the U.S. Merchant Marine Academy, Buzby earned his Bachelor of Science in Nautical Science and U.S. Coast Guard Third Mate License.

Crowley's Busch Joins Sea Machines' BoD

Sea Machines Robotics announced that **Todd Busch**, Vice President & General Manager, Technical Services, at Crowley Maritime, has joined the company's board of directors. Sea Machines is a technology provider in the emerging space of smarter ships, building autonomous control technology for commercial vessels. Busch is responsible for naval architecture and marine engineering, government services, ship management, marine salvage and wreck removal, new-vessel construction and the chartering and operations of Crowley's offshore tug and barge fleet.

Crowley Fuels Names Hall VP in Alaska

Crowley Fuels LLC announced that **Jasper Hall** has been promoted to vice president of highway petroleum distribution. Hall, a 12-year Crowley veteran, will be responsible for overseeing Crowley's fuel sales and distribution business across the interior Alaska highway system. He holds a bachelor's degree in business administration and finance from the University of Alaska-Fairbanks and a master's degree from Multnomah University.

Deschenes Joins Bouchard as VP Maintenance and Repair

Bouchard Transportation announced that **Christopher Deschenes** has joined the Company as Vice President of Maintenance and Repairs. Prior to joining Bouchard, Deschenes served as a Project Engineer with Overseas Shipholding Group and after that, at Ocean Tug & Barge Engineering as Director of Engineering and Projects.

Benoit to Lead WFC's Marine Finance Business Development

John Benoit, vice president of new business development for Wintrust Commercial Finance (WCF), has been selected to lead the business de-


Hall


Deschenes


Benoit


Lawson


Gullickson


Ayres

velopment efforts for WCF's Marine Finance Group. Benoit has been with Wintrust since 2015 and has spent more than 20 years providing financial solutions to the marine industry. The Marine Finance Group brings all aspects of marine finance under one umbrella, with loans and leases for middle-market vessel operators, shipyards and port facilities.

Bristol Harbor Group Welcomes Lawson

Bristol Harbor Group (BHGI) has added **Ian Lawson** to its naval architecture and marine engineering practice. Ian holds a B.S. in Naval Architecture & Marine Engineering from Webb Institute. Prior to interning at BHGI, Ian spent the previous winter working on an LNG carrier. He also interned at Foss Maritime in Seattle where he provided engineering support for a fireboat new-build project and helped with the design of a warehouse barge.

Gullickson Joins EBDG

Stephanie Gullickson has joined Elliott Bay Design Group's Seattle office as the Marketing Manager. She brings 12 years of experience, graduating from California State University Maritime Academy in 2005 with a Bachelor of Science in Business Administration and later received her Master of Science in International Transportation Management from SUNY Maritime College.

RAL Engineers in Motion: Ayres Earns RPE Accreditation

Robert Allan has announced that **Ryan Ayres** has earned his accreditation as a Registered Professional Engineer with the Association of Professional Engineers and Geoscientists of British Columbia). Ryan has been working with Robert Allan Ltd. since 2011 as a Naval Architect where he has been involved in all aspects of tug design. Prior to this, he worked with Burness Corlett Three Quays Australia as a Consulting Naval Architect for the defense industry. He obtained his education from University of New South Wales in Sydney, Australia with a Bachelor of Mechanical Engineering (Naval Architecture).

Sea Machines Welcomes Business Development Director

Sea Machines Robotics has named **Phil Bourque** as Director of Business Development. Along with building the sales & marketing structure of the company he is spearheading a global initiative of engaging in partnerships with commercial marine companies. Phil comes to Sea Machines with a background in International Sales Management, most recently with Seakeeper.

Long Beach Harbor Commission Appoints HR Director

The Long Beach Board of Harbor Commissioners approved the selection of **Stacey Lewis** as Director of Human Resources Services. Lewis joined the Port of Long Beach in 2008. Prior to coming to the Port, she was the president of a consulting firm providing services to several local municipalities and nonprofit organizations, including the Port. Lewis earned a bachelor's degree in psychology from the University of Pacific.

Barone Named VP at PDS

Precisions Drive Systems (PDS) announced that **Bob Barone** has been named Vice President of the company. Barone brings a wealth of experience to PDS, including owning and operating an Architectural Millwork Company, as well as holding product management and sales positions with Michael Weinig, Biesse America, and Benz.

Danos Names Coatings Operations Manager

Danos announces the promotion of **Clay Carter** as coatings operations manager, a position with responsibility for all day-to-day activities of the company's coatings service line. The appointment follows Carter's successful tenure as acting coatings operations manager since 2016. A native of Sugar Land, Texas, Carter attended the U.S. Naval Academy and went on to serve six years in the Navy.

Four Mass. Maritime Cadets Win Crowley Scholarships

Crowley Maritime Corp. has awarded Thomas B. Crowley Scholarships to four Massachusetts Maritime Academy (MMA) cadets based on their academic discipline and demonstrated leadership skills. The funds will allow **Paige Mentuck**, **Summer Cawley**, **Samuel Estes** and **Robert Gross** the opportunity to further their education and pursue career aspirations in the maritime industry. Mentuck is a third-class cadet majoring in marine transportation. She is the first female to have achieved the rank of cadet chief mate. Cawley is a third-class cadet in maritime transportation who sailed aboard the Crowley tanker Louisiana. Third-class cadet Estes is majoring in marine transportation. Gross, a third-class cadet, is majoring in marine engineering. Since 1984, Crowley has provided more than $3 million dollars in scholarship funding for more than 1,000 students.


Bourque


Lewis


Barone


Carter

Balthasar Named Thermamax President

Dirk Balthasar took over the management of Thermamax Inc., succeeding **Markus Pratz** who took the decision to leave the US-based company at the end of 2016. Dirk Balthasar joins from MAN Diesel & Turbo SE, a company producing large diesel engines and turbomachinery for marine and stationary applications.

SUNY's Camenzuli Appointed to Coast Guard Committee

SUNY Maritime College physician assistant **Danielle Camenzuli** has been appointed to the U.S. Coast Guard's Merchant Mariner Medical Advisory Committee. The committee is responsible for advising the Secretary of Homeland Security about medical certifications for licenses and other merchant mariner documents; medical standards and guidelines for physical qualifications; medical examiner education standards; and medical research. She is the only person on the committee from one of the nation's six maritime academies.

Kito Americas Announces C-Suite Changes

Marc Premont, COO of Kito Americas, Inc. and Executive Officer of Kito Corporation, will assume a senior leadership role for business development for the KITO Americas group. **Chris Hess** has been promoted to VP of Quality and Product Development Engineering for KITO Americas. Hess assumes responsibility for advancing the capabilities of both Harrington Hoists and Peerless Industrial Group. He earned his BSME from Lafayette College and is a Licensed Professional Engineer. He currently serves as VP of Hoist Manufacturers Institute (HMI), is a member of ANSE B30.16 and B30.21 committees on hoists and is a Standards Technical Panel member for Underwriters Laboratories. **Jason Said** was promoted to Director Business Development and will oversee marketing and sales strategies for the product development of hoists and lifting and will be responsible to develop and implement growth opportunities for hoists, cranes and below-the-hook products. **Ken Woidill** was promoted from Director of Operations to Managing Director of Harrington Hoists.

Decas selected as IAOTP's 2017 Top Port Director

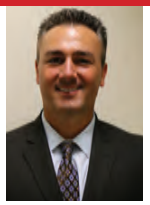
Kristin Decas has been named IAOTP's Top Port Director. With over a decade of professional experience in the Maritime-based Trade, Transportation and Infrastructure Industry, she has demonstrated success not only with the Port of Hueneme but with every position she has ever held. Since beginning her tenure with the Port of Hueneme in February 2012, the Port has seen Tonnage totals have grown every year from 1.3 million tons for FY 2012 to over 1.575 million metric tons in 2015 marking the Port's strongest sustained trade year ever. She also


Balthasar


Abbott

Kito Americas


Hess


Said


Woidill


Decas


Whitebook


Ong

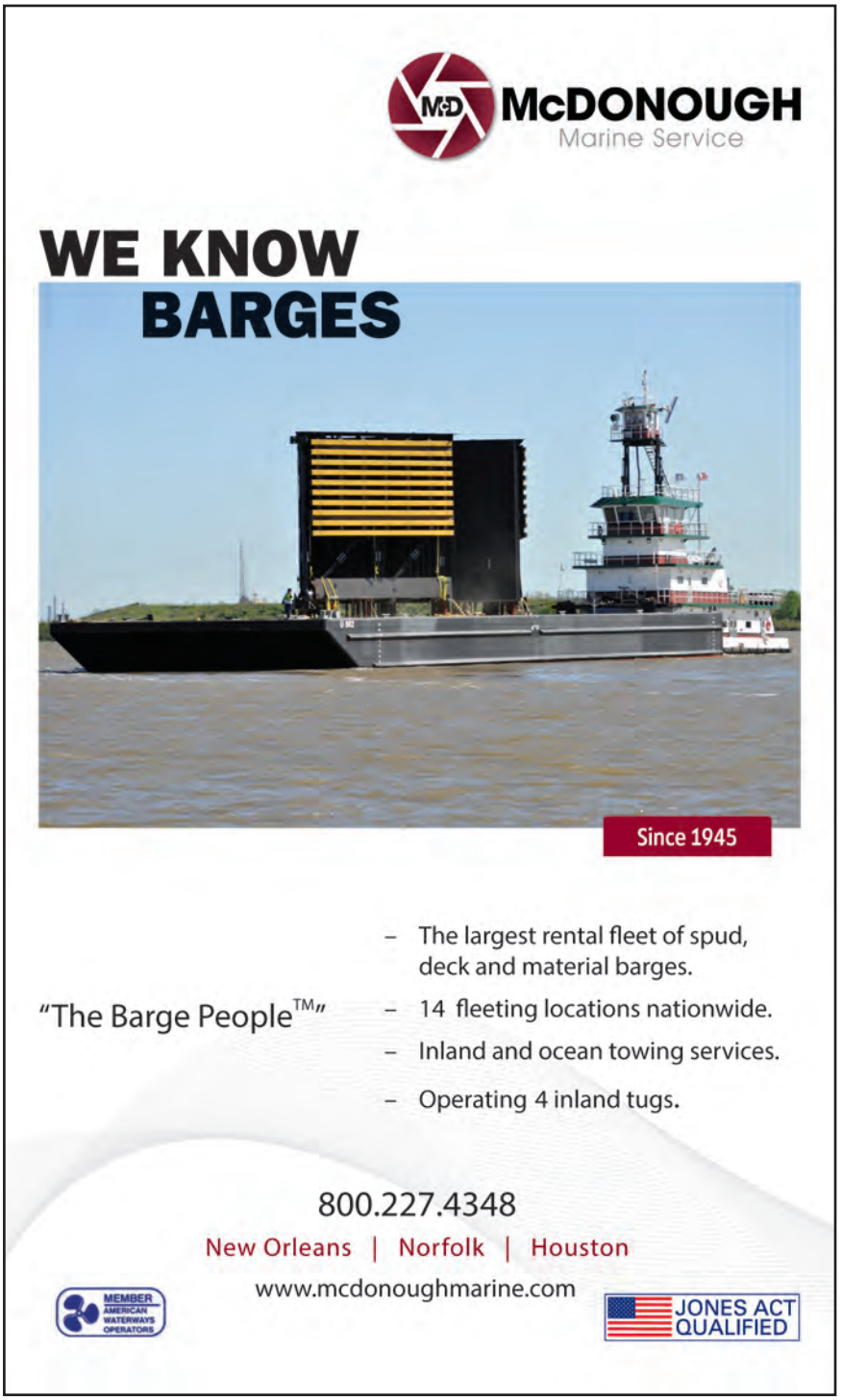
served as CEO and Port Director for the Port of New Bedford, MA. Kristin graduated with her Bachelor's Degree in Economics from the University of Vermont and with her Masters Degree in Environmental Policy and Law from the University of Denver.

Birns Announces New Sales Team Hires

Birns has expanded its sales team with the appointments of **Alan Whitebook** as Sales Applications Engineer and **Jenny Ong** as Customer Service Representative. Whitebook will be responsible for the active sale of the company's advanced deep submergence connectors and cable assemblies to worldwide users. Whitebook holds a Master's degree in business administration and a Bachelor of Science degree in mechanical engineering. Ong most recently served as Senior Customer Service Representative for Power-One and as Customer Service Representative for Sony Electronics. Ong holds a Bachelor of Arts degree in business administration.

T&T Salvage Enters Green Award Scheme

T&T Salvage has been welcomed as an incentive provider of Green Award. T&T Salvage has been dedicated to sustainability and sound solutions for safety for years, and now underlines this commitment through participation in the Green Award scheme. Green Award helps superior ship managers and ships to differen-




T&T Salvage

Elastec


JAX LNG, LLC

tiate themselves demonstrating excellent standards of quality and environmental performance. The Green Award certificate is an indicator of successfully implemented enhanced technologies and commitment to continuous improvement.

Elastec's American Marine Division Marks 50 Years of Service

It was 1967 when the late Jim Pearce, a decorated World War II U.S. fighter ace-turned-test pilot, formed a new company to help control water pollution - American Marine. An early innovator in the development of oil containment booms, fire booms and turbidity curtains, Jim's firm was eventually acquired by Elastec, the Carmi, Ill-based manufacturer of oil spill recovery equipment, and the inventor of the oleophilic drum oil skimmer. Fifty years after American Marine was formed, it remains an integral part of the Elastec mission of providing an array of floating containment booms, trash and debris barriers, turbidity curtains, oil skimmer systems, work boats, portable incinerators and vacuum equipment in use in 155 countries.

JAX LNG Gets USCG Nod for Waterfront Bunkering

JAX LNG, LLC achieved a major milestone by receiving a Letter of Acceptance (LOA) from the United States Coast Guard (USCG) for the operation of their waterfront LNG facility and the approval to conduct ship-to-ship LNG bunkering operations with TOTE Maritime's Marlin Class ships and the LNG barge, Clean Jacksonville. The ship-to-ship LNG bunkering operation will commence early in 2018. JAX LNG, LLC is a joint venture between Pivotal LNG and Northstar Midstream. Expected to be operational by end of 2017, JAX LNG's state-of-the-art waterfront LNG facility in Jacksonville will be outfitted with a marine dock and truck loading capability. Operated by Pivotal LNG, the facility's initial daily liquefaction capacity will be 120,000 gallons of LNG per day and the facility will have 2 million gallons of storage capacity.

Great Lakes Traffic, Seaways Volume Both Up Sharply

U.S.-flag Great Lakes freighters moved 10.1 million tons of cargo in August, an increase of 7 percent compared to a year ago. August's shipments also bettered the month's long-term average by approximately 60,000 tons. Year-over-year U.S.-flag cargos total 50.4 million tons, an increase of 1.3 percent over the same point in 2016. Separately Iron ore, dry bulk cargo and general cargo shipments also remain strong on the St. Lawrence Seaway. The St. Lawrence Seaway Management Corporation reported that overall tonnage up 13 percent over last year. Meanwhile, general cargo shipments (including specialty steel and project cargo) through the Seaway are up more than 35 percent, while dry bulk tonnage has increased 15.5 percent. Salt shipments are 42 percent above 2016 totals. Iron ore, salt and general cargo shipments through the Great Lakes and Seaway have been strong throughout the 2017 shipping season and continue to lead the way.

MARAD Activates SMA Training Ships for Hurricane Response

The U.S. Department of Transportation Maritime Administration (MARAD) has activated two National Defense Reserve Fleet vessels for a FEMA mission to support relief efforts in Texas. The State University of New York Maritime College's training ship, EMPIRE STATE VI, and the Massachusetts Maritime Academy's training ship, KENNEDY, received orders to proceed to the gulf coast of Texas. MARAD also activated the Texas Maritime Academy's training vessel GENERAL RUDDER. Combined, these three vessels can house over 1,200 workers thereby freeing up local hotel resources for displaced individuals. Notably, these vessels have been activated in support of past relief operations with the most recent activation for Superstorm Sandy in 2012. But, these SMA training ships are getting old. The oldest one was originally built as a cargo ship in the early 1960's and has outdated steam propulsion. As such, Herbert Engineering Corp (HEC) was contracted by MARAD to design a new class of training ships,


Credit: Mike Gibby Besko

Great Lakes Bulker

National Security Multi-Mission Vessel

TS Kennedy


Credit: Port of Los Angeles

Port of LA – Liquid Terminals

the National Security Multi-Mission Vessel (NSMV). The Phase 3 design was completed in early 2017, delivering a package that is expected to be sufficient for shipyards to prepare bids to build NSMV as the project progresses. It is hoped the new vessels will be delivered to all five SMA's over time, starting first with the Academies with the oldest training ships. The utility of these training platforms to national security is well defined. That demand won't go away when the current vessels are scrapped.

Los Angeles Port Emissions at Historic Lows, TEU's at Record High

The Port of Los Angeles achieved record clean air gains while moving more cargo than ever, according to the Port's 2016 Inventory of Air Emissions. The report shows the Port surpassed its 2020 goal for reducing the health risk of emissions from port-related activity. Since the Port's baseline inventory in 2005, diesel particulate matter (DPM) emissions have fallen 87 percent, sulfur oxides (SOx) emissions have plummeted 98 percent, and nitrogen oxide (NOx) emissions have dropped 57 percent. During the same period, the Port moved more than 8.85 million twenty-foot equivalent units (TEUs), maintaining its ranking as the Western Hemisphere's No. 1 container seaport and surpassing the Port's earlier record of nearly 8.47 million TEUs set in 2006.

Affordable Luxury When You're Anchored in Boston

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Mobil Serv for End-to-End Marine Lubrication

ExxonMobil's Mobil Serv brand helps marine operators optimize maintenance programs, vessel reliability and operating costs. Under the new brand, ExxonMobil is set to roll out a range of next-generation services for the marine industry. The combination of Mobil Serv and ExxonMobil's portfolio of world-class lubricants will help customers gain critical insights and achieve efficiencies, leveraging the power of cloud computing and big data.

www.exxonmobil.com/marine

3D Printed Ship's Propeller from Damen

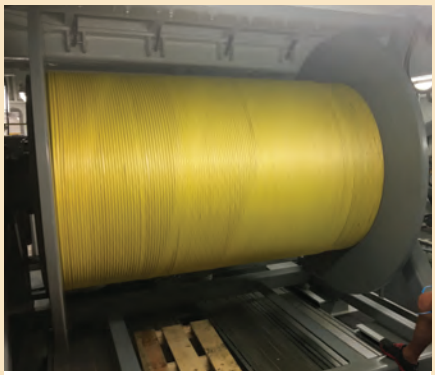
A prototype of the world's first class approved ship's propeller has been produced using 3D printing techniques. The 1,350mm diameter propeller – named WAAMpeller – is the result of a cooperative consortium that includes Damen Shipyards Group, RAMLAB, Promarin, Autodesk and Bureau Veritas. The propeller was produced with the Wire Arc Additive Manufacturing (WAAM) method using a Valk welding system and Autodesk software.

www.damen.com

Mascoat's VBS Isolation Mounts and Rail System

Mascoat's VBS Isolation Mounts and Rail System eliminates vibrations and rattling of ceiling panels that can be disruptive to passengers and crew as they work and sleep, and can also cause vessels to be out of compliance with the IMO Noise Codes. Offered in 3 different rubber densities depending on weight and fire requirements, Mascoat works to find the best fit for each application.

www.mascoat.com/vbs



Cortland's Synthetic Rope

Cortland's Plasma HiCo synthetic rope provides superior breaking strength as compared to wire. HiCo also retains all of the features and benefits of standard Plasma ropes with the added characteristic of an increased coefficient of friction coating to allow for better gripping in applications such as traction winch systems. Synthetic rope is also easier to maintain and handle than wire.

www.cortlandcompany.com

MTU Engines from Rolls-Royce Power Harbor Tugs

Rolls-Royce will deliver eight MTU Series 4000 engines for four new terminal tugs. The tugs will each be fitted with two 16V 4000 M73L MTU engines, each delivering an output of 2,700 kW (at 1,850 rpm). The Robert Allen/ Rastar 2900 SX terminal tugs, with a length of just under 30 meters, will be added to the fleet operated by Svitzer.

www.rrpowersystems.com

ELSA: 35 Years of Escape Protection

Compressed air escape sets were developed by Sabre (now Scott Safety) in the 1980´s who trademarked the name ELSA, meaning Emergency Life Saving Apparatus. The Escape set is carried by the user or is mounted so that the wearer can quickly access it. Upon the user knowing that they need to escape they will open the bag and remove the hood, pull it over their head and make their escape.

www.scottsafety.com

Damen's Free Dredge Calculator

Dredge projects are tendered and changed constantly. Consequently, dredging contractors have to make new calculations, involving various production parameters, when preparing their project quotations. Damen has introduced an online dredge job calculator to unburden contractors of this time-consuming and costly task. With just a few mouse clicks on the online platform, known as Sandy, the contractor enters the defining characteristics of the dredging job at hand.

www.dredgefinder.com / www.damen.com

NOFIRNO Seals for Diesel Power Pack Exhaust

Diesel generators in the form of ready-made power packs in containers are vulnerable to water tightness, particularly around the diesel generator's exhaust. To prevent this, Beele Engineering supplies exhaust sealing systems based on the NOFIRNO sealing system. The NOFIRNO system is a sealing system based on high-quality NOFIRNO rubber, combining water tightness with extremely high fire resistance. The NOFIRNO system has a 50-year service life.

www.beele.com

Corvus Energy Batteries for Hybrid Fishing Vessels

Orca ESS from Corvus Energy has been selected to provide 762kWh of battery power for three new hybrid fishing vessels. The Orca Energy ESS from Corvus will supply electrical power to the fishing vessels' propulsion systems and electrical networks to enable environmentally-friendly and lower cost operations. The ESS units have a capacity of approximately 250kWh, which will be utilized during many aspects of the fishing vessel operations.

www.corvusenergy.com

MagnaShear Motor Brakes for Maritime Cranes

MagnaShear motor brakes from Force Control Industries employ oil shear technology, providing longer service life in demanding applications seen on shipboard or port-side cranes, hoists, winches, and other marine handling equipment. Proven oil shear technology transmits torque between lubricated surfaces. A patented fluid recirculation system dissipates heat, a common problem in dry braking systems. Elimination of the wear increases service life and elongates maintenance intervals.

www.forcecontrol.com

Honda Marine Debuts New Outboard Jet Models

Mariners who explore the shallows now have three new engine choices from which to choose with the launch of the jet-driven Honda 40 Jet, 65 Jet and 105 Jet Honda Marine outboard motors. All three new models offer the same dependable, quiet and fuel efficient operation as the Honda BF Series of propeller-driven models, with the super maneuverability and added benefits of a jet-propulsion system.

http://hondanews.com

Mobile Power from Larson Electronics

Industrial lighting leader, Larson Electronics LLC, has just announced the release of a new mobile power distribution center with a weatherproof portable base. This mobile transformer system provides the ability to safely tap into 120V AC power from generators or direct grid power, making this unit ideal for indoor and outdoor applications that need temporary power. The WALTX-120.1P-2.5KVA-240.1P-50A is ideal for shipyards.

www.larsonelectronics.com

JMP Delivers Replacement Pumps, Impellers

JMP Marine replacement seawater pumps and impellers are competitively priced, deliver superior performance and reliability to keep diesels running in top condition. Manufactured to exacting ISO 9001-certified standards for 100% compatibility, JMP replacement pumps are self-priming with a high volume flow capacity, their bodies are made of cast bronze with quality, corrosion-resistant fittings and O-ring seals for a long, reliable service life.

www.jmpusa.com

PBES Drives Faster ROI for Marine Batteries

Plan B Energy Storage (PBES) has launched a new line of batteries. Harpoon Power 65 and Harpoon Energy 97 energy storage systems deliver faster ROI, and utilize the latest advances in lithium-ion cell technology to deliver a safe, high quality and commercially viable clean technology solution for workboat operators. It is designed and suited for commercial applications, with up to a 90,000-hour calendar life.

www.pbes.com

Fuji's Compact Industrial Grinders, Sanders and Cutters

Fuji Air Tools has launched a new series of compact angle grinders, sanders and a cutter designed to deliver improved productivity in industrial metal working applications. The new FA-45 Series offers a superior power to weight ratio and a lower profile head than previous models, making these tools ideal for deburring, weld bead removal or basic chamfering in the petrochemical and shipbuilding industries.

www.fujitools.com

Chicago Pneumatic's Wrench for Confined Spaces

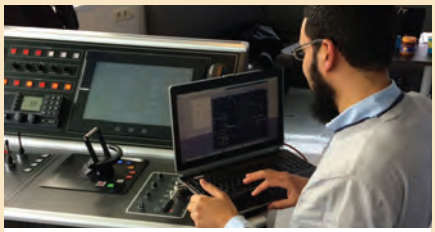
Chicago Pneumatic has developed the world's first, truly compact ¾" stubby impact wrench – the CP7762. The new wrench measures just 6.2" (158.7mm) in length and weighs a mere 6.6 lbs. (3.0 kg) – that's little more than a bag of sugar. Small but powerful, the CP7762 is equipped with a rugged steel motor that delivers a powerful 1050 ft.lbs (1420 Nm) in reverse for high productivity.

www.cp.com

IndraControl XM2201: Robust hardware for extreme environments

IndraControl XM controllers are intended for use in marine and offshore applications and in explosive atmospheres. Rexroth's controller is now certified for use on vessels, offshore installations and in explosive atmospheres. A specially optimized version of IndraControl XM is certified by six classification societies for use on the high seas: ABS, LR, BV, DNV GL, RINA and Federal Maritime and Hydrographic Agency.

www.boschrexroth.com



Rhodium DPT4500 DP for Inland Vessels

RH Marine has successfully commissioned the Rhodium 4500 Dynamic Positioning and Tracking System. Dynamic positioning for inland multipurpose vessels is complex since these ships have to take movements, loading conditions and currents into account. Dynamic positioning is quite new and unexplored in this market. RH Marine integrated the Rhodium DPT4500 system on board to help maximize the operational capabilities together with sister company Radio Holland.

www.rhmarine.com

New Shore Power System for Workboats

Manufacturers such as Catalina Yachts, Fleming Yachts, Marlow-Hunter, Nordic Tugs and over 50 additional OEMs have embraced the SmartPlug system. Not only does it offer a powerful selling feature, but it provides customers with a safer, more modern vessel. It features a pin and clip design that delivers more than 20 times the metal-to-metal contact. The SmartPlug is available in 30 or 50 amp versions.

www.smartplug.com

ANSI-Compliant HI-VIS Workwear

Working around water where ANSI-compliant apparel is required demands tough, functional gear that delivers all-day comfort. This durable, high-performance jacket and vest come in hi-vis yellow with orange reflective tape for increased visibility. Both provide the comfort and fit Kent Safety Products technical workwear is known for, with the added safety of a US Coast Guard approved life jacket delivering 15.5 lbs. of buoyancy.

www.kentsafetyproducts.com

FCI Watermakers Unveils New Website

FCI Watermakers' new website has been updated. Optimized for mobile, it's accessible by a wide range of devices with the same rich user experience. A clean, uncluttered layout and improved functionality delivers easily understandable views of FCI's complete range of watermakers. The revised website and integrated tools enable users to easily and quickly select products most appropriate to an application, whether marine, or offshore oil and gas.

www.fciwatermakers.com

'OSCAR' Water-Rescue Training Dummy

Recovering someone who has fallen into the water is no easy task, especially if the victim is unconscious or lethargic due to cold temperatures. Training is essential to prepare potential rescuers for how difficult it can actually be. The Training Dummy from Emerald Marine Products is used by safety instructors for teaching what it's like to retrieve a lifeless, 180 lb. adult.

www.emeraldmarineproducts.com

Vapor-Tight Light Brightens Wet Environments

The task of lighting chronically wet environments like harbor facilities, yards and vessel engine rooms can be a challenge. The NVX15GHGA incandescent fixture from Hubbell Marine is a USCG approved, vapor-tight, non-conductive light ideal for demanding commercial and recreational marine applications. Featuring a UV-resistant, glass-filled thermoplastic polyester box, this fixture offers long life and trouble-free lighting in harsh, wet conditions.

www.hubbell-marine.com

RSC Bio Solutions' High Performance Biodegradable Grease

RSC Bio Solutions' RSC Enviro-Logic Grease 2 WREP, water resistant, biodegradable grease is a Lithium Complex, extreme pressure EAL designed with polyalphaolefin (PAO) and hydrocarbon related type base fluids. Compliant with the 2013 U.S. EPA VGP, it was formulated to meet or exceed the performance of conventional and biodegradable greases in applications where water resistance is integral to the performance of the equipment.

www.rscbio.com

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Work Phone: (707) 654-1140
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Time base – Full-time
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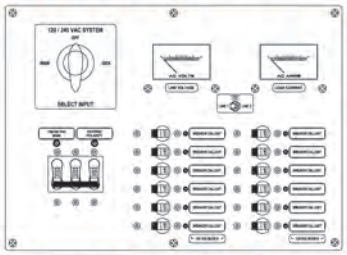

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If you are an advertiser and would like to update or modify any of the above information, please contact: nicole@marinelink.com

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QUESTIONS?

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- **MLS#:** 1182238
- **Contact WSDOT Real Estate Services:**
  Randy Johnson
  johnsora@wsdot.wa.gov | 360-705-7358

BASIN FEATURES:

Built: 2011
Dimensions: 933 feet by 185 feet
Depth: -9 feet mean low-low water (MLLW)
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Washington State Department of Transportation

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Photo courtesy of McAllister Towing

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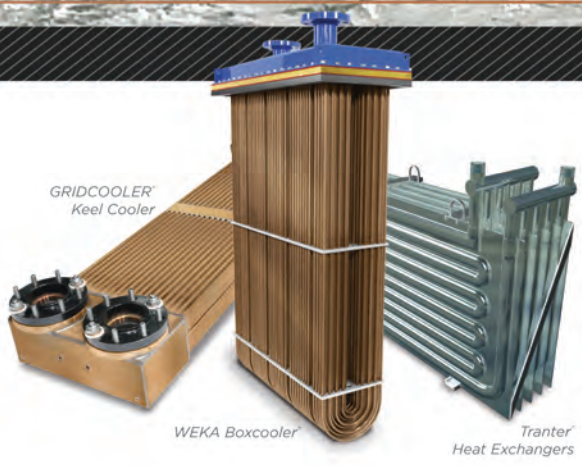

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