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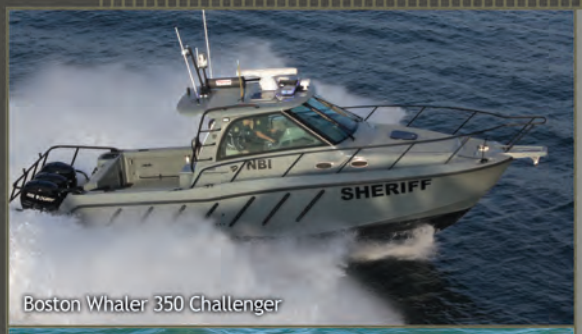

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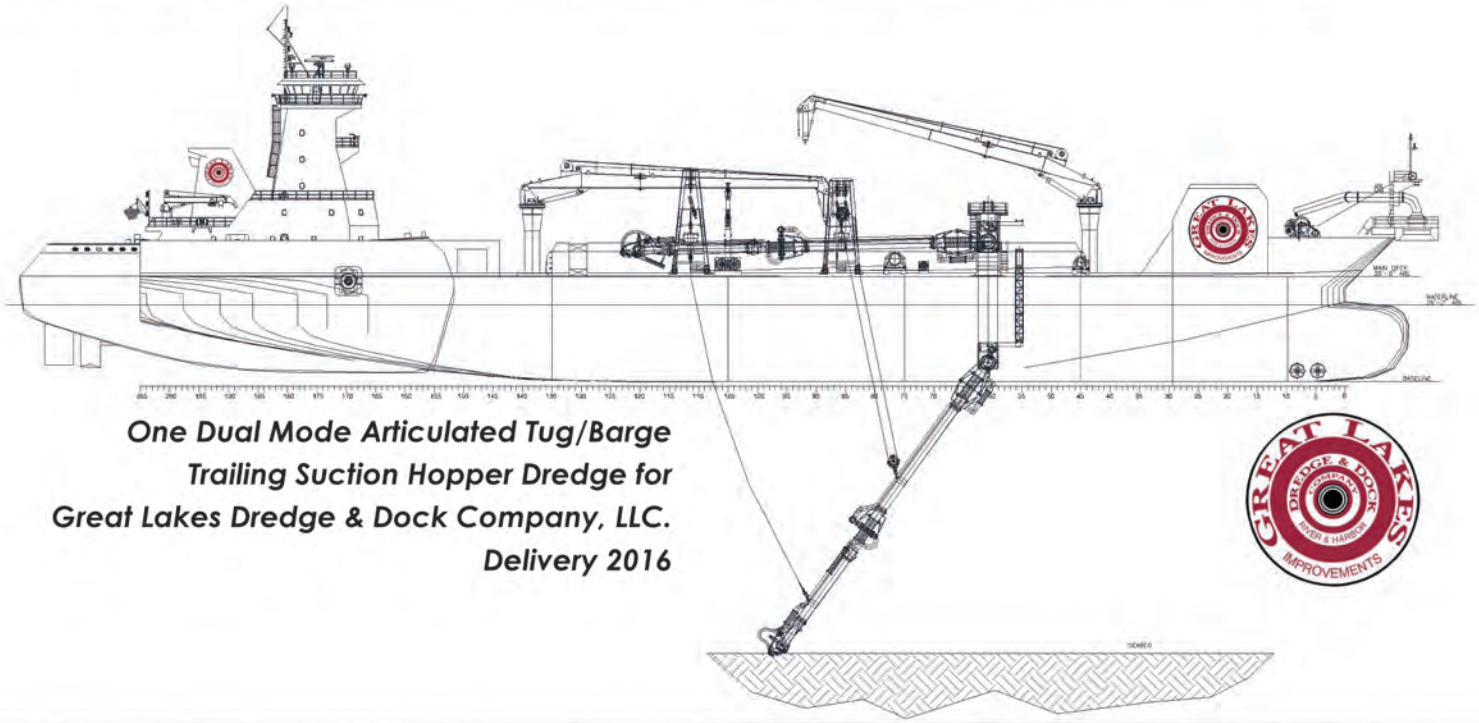

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It's the perfect time to be putting out our annual Dredging and Marine Construction edition. I could tell you that I planned this edition to coincide with news that the House-Senate conference committee had issued its report on the long-awaited water resources development legislation, but since the bill still hasn't gone to a vote as we go to press, I think I'll hold my water (no pun intended). As I type this note, the 2014 Water Resources and Reform Development Act (WRRDA) is on its way to Congress for approval. And, not a moment too soon.

Keeping our fingers crossed for WRRDA's passage, we also issue our own analysis of the domestic dredging situation. This month, Susan Buchanan takes you from Capitol Hill, down south to Louisiana and back into the heartland for a sobering report on America's marine infrastructure. With (unadjusted) spending up tenfold, actual cubic yards of dredge spoil moved down by half since the 1960's and the President's budget for the U.S. Army Corps of Engineers cut to the bone, the benefits of a bipartisan WRRDA bill can't come soon enough. If it doesn't, we're all in a world of trouble. The story starts on page 34.

As Jim Weakley, Lake Carriers' Association President since 2003, puts the exclamation point on Susan Buchanan's dredging SITREP, the need to reform the nation's responder immunity rules for our salvage community looms as a potentially bigger issue. In truth, there are as many critical issues facing salvors and the collective response stakeholder sector as there are ways to right a foundering ship. And, given the greater good done by responders everywhere – including far-flung places like the Palmyra Atoll national monument and wildlife refuge – where the US Fish & Wildlife Service (USFWS) and The Nature Conservancy cooperatively work together to protect delicate environments – I'm not sure what's more important.

It's also about this time of year that we tend to turn our attention away from school and onto visions of leisure and relaxation. That's okay for families, but on the waterfront, this is no time to take your foot off the gas. Manpower shortages continue to plague all maritime sectors. That's because today's critical need for competent human resources won't be solved by the current group who are set to pass the baton and retire within the next 15 years. Waiting in the wings are North America's youth, some as young as the tender age of five. But, not if we don't educate them as to the possibilities that await them in the exciting world of marine transportation. That's where the rapidly emerging secondary education sector comes in.

As many as 20 public schools, stretching from California to New York and everywhere in between are bringing along an entire generation in a maritime-based curriculum. That menu differs from place to place, but the early exposure is priceless. All that's left to be done is for employers to swoop in and pick off the low hanging fruit. What are you waiting for?

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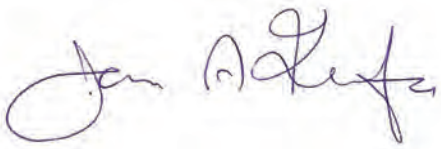

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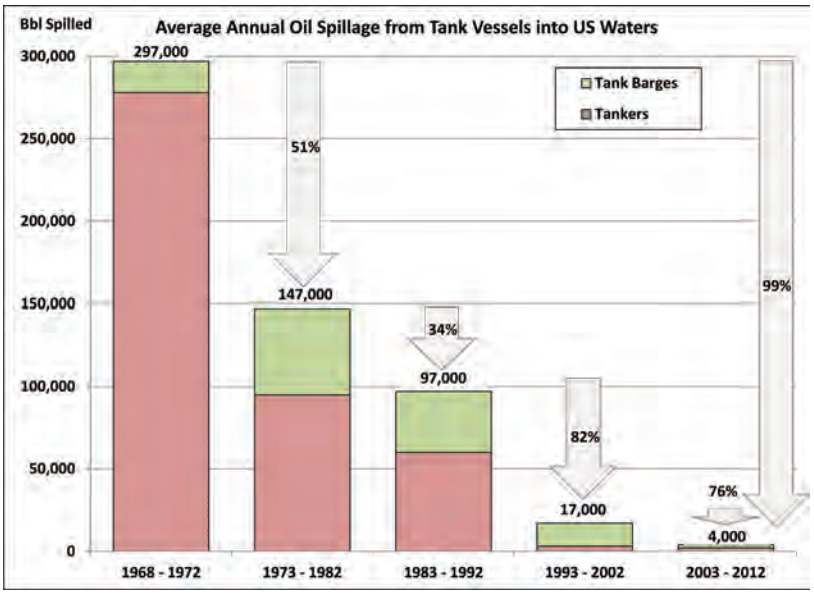
Tank Vessel Oil Inputs into US Waters (1968 – 2012)

This month, Dagmar Schmidt Etkin, PhD, of Environmental Research Consulting, catalogues the progress of the oil transportation industry as it improves its footprint over time. The numbers are truly remarkable. Oil spills from tank vessels into US waters have reduced by 99% since the early 1970s. In the last decade alone, spillage has been reduced by 76%.

Annual Oil Spillage from Tank Vessels into US Waters (Selected years)			
Year	**Tankers**	**Tank Barges**	**Total**
1968	576,488	7,333	583,821
1972	75,043	48,190	123,233
1977	4,748	37,178	41,926
1982	29,011	51,027	80,038
1987	35,623	13,044	48,667
1992	2,799	3,532	6,331
1997	527	3,805	4,332
2002	113	720	833
2007	339	210	549
2012	396	46	442
Total: 1968-2012	**2,988,128**	**1,147,064**	**4,135,192**

The majority of tanker spills are small. Nearly 72% of tanker spills involve less than 10 barrels (bbl), and 99% of tanker spills involve less than 100 bbl. In the last decade, there have been no tanker spills over 6,500 bbl.

Most tanker spills in the US have been relatively small and occurred during transfer operations or due to small leaks. The largest tanker spills in the US have been caused by casualties – collisions, allisions, or groundings, but even for these spills, 75% of incidents have involved less than 1,000 bbl, 95% less than 7,000 bbl. The largest tanker spill in US waters was not the 1989 Exxon Valdez spill with 262,000 bbl spilled, but rather the Mandoil II, which spilled its entire cargo of about 300,000 bbl off Oregon in 1968. The Mandoil II at 42,000 DWT was a much smaller tanker than the Exxon Valdez. The Exxon Valdez spilled less than 20% of its cargo, had it had a worst-case discharge of its entire load, there would have been 1.58 million bbl of spillage. Worldwide, there have been 33 tanker spills that have exceeded the Mandoil II and Exxon Valdez spills in volume. Tank barges transport oil, particularly in intracoastal and inland waterways.



The probability of tank vessel spills should be correlated with the amount of oil transported. Since the early 1980s, there has been a nearly 50% reduction in the volume of oil transported annually by tank vessels. But, this does not explain the reduction in spillage. There has actually been a 94% reduction in the amount of tank vessel spillage per oil transported in the US over the last three decades. Annual tanker and tank barge spill volumes have fluctuated over the years, depending mainly on the volumes spilled in very large incidents.

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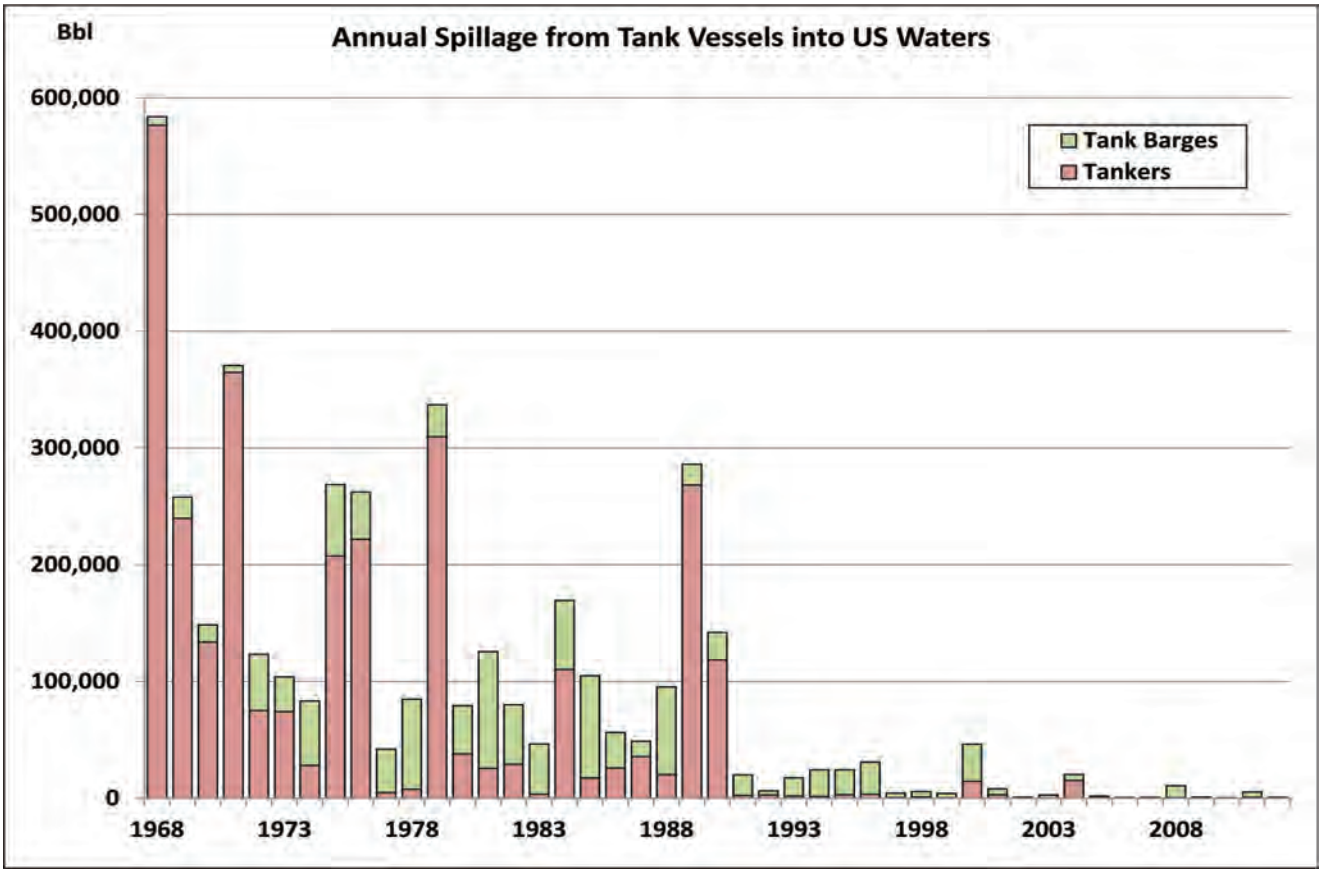
Average Annual Oil Spills (bbl) to US Waters from Tank Vessels					
Vessel Source	Time Period				
	1968 - 1972	1973 - 1982	1983 - 1992	1993 - 2002	2003 - 2012
Tanker Spills	278,000	95,000	60,000	3,000	2,000
Tank Barge Spills	19,000	52,000	37,000	14,000	2,000
Total	**297,000**	**147,000**	**97,000**	**17,000**	**4,000**

In addition to spills, there are inputs of oil due to the small discharges of lubricants from stern tubes and other deck-based and in-water machinery from ships. The majority of ocean-going ships operates with oil-lubricated stern tubes and uses lubricating oils in a large number of applications in on-deck machinery and in-water (submerged) machinery. The issue of oil leakage from stern tubes, once considered a part of normal "operational consumption" of oil, has become an issue of concern and is now being treated as oil pollution with full legal consequences. There are also "operational inputs" of lubricant oils that occur due to continuous low-level discharges and leakages that occur during normal vessel operations in port. The sources of operational discharges include deck machinery and in-water (submerged) machinery. The oil that is used on deck-based machinery can enter the water through rain runoff or during deck washing activities. For tankers, this amounts to about 2,100 bbl per year in US ports.



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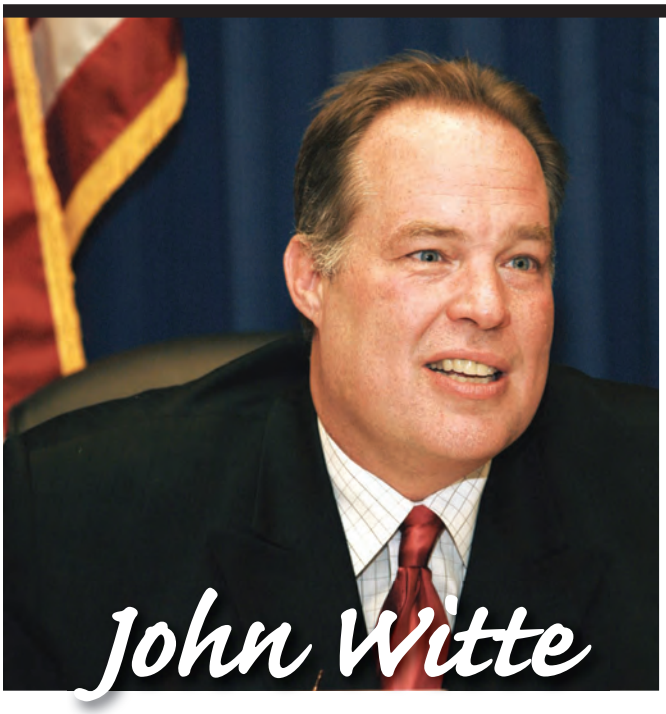

Vice President, International Salvage Union

Working full-time with Donjon Marine Co., Inc. since 1982, John A. Witte, Jr. is currently Executive Vice President. He oversees the day-to-day operations of Donjon's Marine Salvage, Demolition, Marine Transportation, Diving, Heavy Lift and Shipbuilding Operations. Mr. Witte is also responsible for Donjon's Regulatory Compliance Program for all marine related activities and has served as Salvage Master on numerous Donjon Salvage projects since 1982. A past President of the American Salvage Association (ASA), Witte today serves as Vice President of the International Salvage Union (ISU). Beyond this, Witte served a seven-month tour of duty as the Civilian Project Manager for the Federal Salvage Response necessitated by Hurricanes Katrina/Rita in the U.S. Gulf in 2005, and recently served as the Project Manager for the dewatering of the tunnel and subways system located in lower Manhattan, NY which was necessitated by the impact of Hurricane Sandy. His experience is deep and his commitment to the business of salvage is undeniable. Listen in this month as he weighs in on all things "salvage."

Tell us briefly about the International Salvage Union.

The International Salvage Union (ISU) is the global trade association representing marine salvors. Its members provide essential services to the world's maritime and insurance communities. Members are engaged in marine casualty response, pollution defense, wreck removal, cargo recovery, towage and related activities. The membership of the ISU includes approximately 60 members and over 60 associate members, which represents the majority of the worldwide salvage capability. For the most part, if it's newsworthy and salvage related, the odds are that an ISU member is involved.

You currently serve as Vice President of the International Salvage Union. Formerly, you served as President of the American Salvage Association. Describe where the missions of these two organizations meet, and where they differ.

The Focus of the ASA has always been more regional than the ISU. The ASA was started over 10 years ago in an

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effort to provide the North American Salvage Community a voice in the structure and practical application of the requirements for Salvors as a result of the Oil Pollution Act of 1990 (OPA-90) for Salvage and related services. Now that the OPA-90 era is in full force and effect, the ASA's concentration, while still maintaining an oversight position as relates to the continuing evolution of OPA-90, has shifted to more immediate concerns of the marine salvage community. These include Ports of refuge, Salvor Indemnification and continuing education and training for present regulators and future marine salvors; to name just a few. The mission of the ISU is based upon more traditional salvage issues and concerns such as the growth and use of the Lloyds Open Form (LOF) Salvage Agreement, SCOPIC, and issues that are based upon the needs of the worldwide salvage community rather than the more narrow scope of the ASA. It also provides a single unified voice when dealing with the international shipping industry, particularly shipowners and insurers. This is not to suggest that there is not overlap between the ISU & ASA. At present, there are nine ASA General Members who also are full Members of the ISU. While the geographical areas of concern are different, the ASA, ISU and their respective memberships are both concerned about the future of Marine Salvage and how their membership can be most effective in a world where regulatory requirements, concerns and focus change on a regular basis.

What's the number one hot button issue on the minds of ISU members in 2014? Is it the same for ASA? If not; why not?

There are many different issues that are of concern to the North American and International Salvage Communities. While I would be hesitant to rank them in order of importance, as they are all important concerns to the salvage and marine communities, there are two that both the ASA & ISU believe to be important and topical. These include 'Places of Refuge' and the monitoring of the ever changing regulatory landscape. While the latter issue encompasses a number of different legislative and administrative activities at any given time, the issue of Places of Refuge is probably the issue that should be the one that is of most concern for not only the salvor, but the vessel owner, underwriter and the residents and regulators who live and work in the area of the casualty. In the event of a casualty where weather and related conditions can negatively impact performance, the need to move the casualty to protected waters or an appropriate Port Facility often is the difference between success and failure. What we all must keep in mind that even if a vessel is lost offshore, in deep water, there still remains the serious risk of a negative environmental impact as the pollutants escape the vessel and rise to the surface, and may then spread over a wider area than might otherwise have been the case. Once sunk, the cost to recover and depose of the pollutants is at least ten times higher than if the pollutants were removed with the vessel still afloat. When it comes to the protection of the environment, the phrase "keep the oil in the ship" is, from my perspective, the most effective way to be environmentally conscious. When conditions require, the ability of a professional Salvor to be allowed to bring the vessel to a location where he/she can be most effective is the best way for both commercial as well as environmental success.

Tell our readers what 'makes' a Salvage Master. Is there a formal licensing / certification process to get to that point? If not, should there be one?

The question of what makes a Salvage Master is one that ten different "experts" will answer in ten different ways. While the ASA and ISU have both discussed ways to better formalize the training and intellectual requirements of what makes up a Salvage Master, the conclusion we have reached is that there is no practical way to quantify the specific requirements of a Salvage Master so that it can be condensed to the written word. I still am amazed at the ability of all successful Salvage Masters to know what is going to happen to a stricken vessel and proactively take steps to rectify the situation before it even occurs. This is not something that can be taught; but learned based upon the experience of being there. There is no way to teach the ability to work long hours, away from home, under extreme emotional and physical pressure. Over the course of my 35+ years of involvement with marine salvage, I have met and worked with salvage masters who have started their careers as lawyers, divers, vessel masters, vessel engineers, police officers, laborers and salesman. While training in a marine field certainly provides for a good base to move forward into the field of marine salvage and ultimately a salvage master, it is not a necessity. A Salvage Master requires common sense, a basic knowledge of the Engineering principals that govern a salvage effort, an ability to direct and motivate people and most importantly experience. No two marine salvage efforts are ever the same. Therefore, there is no such thing as a "textbook" response. Today's modern salvage masters are part politician, part engineer, part field general, part equipment manager and part deckhand. Put all these abilities together over time and what comes out is a salvage master.

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You've had a lot of high profile roles in the salvage community. Perhaps the most interesting was a seven-month tour of duty as the Civilian Project Manager for the Federal Salvage Response necessitated by Hurricanes Katrina/Rita in the U.S. Gulf in 2005. Tell us about that experience.

When Katrina hit the US Gulf, I like most of the US was glued to the news to see what happened. Initial reports were that like past hurricanes that have impacted the Gulf for the last 100 plus years, damage was done, but nothing that severe. Obviously that was not the case. I arrived in Louisiana about three days after Katrina hit. On day one, I boarded a helicopter and flew to New Orleans. From the air, things looked fairly normal until we reached the outskirts of New Orleans and I noticed a sea of blue which turned out to be Blue Canvas which was used by property owners to cover all of the roof damage the entire area sustained. Then, about 20 miles outside of New Orleans, I was hit with a smell that I will never forget. It was a combination of raw sewage, rotting garbage, putrid water and other things that are not worth detailing. I then reached New Orleans. As bad as the smell was, it could never prepare you for the sight of New Orleans, a city that I have visited and worked in for over 30 years, utterly destroyed. It was a sobering and thought provoking landscape. My next seven months was spent working shoulder to shoulder, 12 to 14 hours per day, every day of the week with a group of men and women that were pulled from all over the country to come together to respond to the worst natural disaster that this country have ever seen. Private contractors, lead by Donjon, joined forces with the U.S. Navy, U.S. Coast Guard, USACE, and hundreds of other local private responders and citizens to slowly bring New Orleans back to a functional City. There were certainly difficult times where the task seemed in surmountable. But, as we started to dig ourselves out of the quagmire that was New Orleans, we began to see an even increasing light at the end of the tunnel. By the time Donjon's portion of the work was completed, after over 7 months of time onsite, while exhausted and ready to go home, I remember sitting in the conference room which was our office, home, social gathering place and overall refuge from the horrors of Katrina and thinking I really didn't wait to go home. I believe someone called it a mild case of "Stockholm Syndrome." While my overall experience was positive, I truly hope I am never needed to perform that duty again.

Places of Refuge: where are we in terms of regulatory bodies as to solving that sticky issue?

The issue of Places of Refuge is so very important to the safety of the Marine Community that we, who are part of the Marine Response Community, must find a way to find a common ground that will allow a stricken vessel access to an area where a vessel can safely be worked on. This being said, the decision to allow a potential disaster to enter into a Place of Refuge does present some risk to the individual or individual who approved this action. This basic problem will drive a negative response when presented with a request for refuge. One of the biggest impediments to implementing a worldwide policy as relates to 'ports of refuge' is a lack of knowledge of the risks to the environment when you don't allow a casualty or refuge as compared to when you do. What we must keep in mind is that the risk to the vessel, salvage crew and environment is much less if a professional Salvor can demonstrate that a safe and more effective response can be performed in a safer environment which is protected as much as possible, from the elements. I believe that the best way to accomplish this is not only through legislation but also thru the efforts of organizations such as ISU and ASA, who through various committees and outreach programs, can educate regulators, stakeholders and coastal states as to the overall benefits to the environment. This will take time. We need agreement from coastal states that they will accept their obligations under existing conventions and guidelines. There is significant legislation that is in place internationally and regionally, in particular, IMO Resolution A.949, "Guidelines on Places of Refuge for ships in need of assistance;" the 1989 Salvage Convention and, in Europe, the EU Directive 2002/59/EC. Coastal states should establish an authority to assess each case on its merits without political interference. They should engage people with the appropriate credentials and experience to undertake an assessment of a casualty requesting a Port of Refuge. Such assessment should include a visual inspection and conclude with recommendations for managing and mitigating the risk of any impact on local coastlines and communities. The assumption should be that a Place of Refuge will be granted if needed and that there should be "no rejection without inspection." Wider adoption by coastal states of simple, robust, "single point" command and control models akin to that of the US Incident Commander or the UK's Secretary of State's Representative for Salvage (SOSREP) system would helpful.

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Are we any closer to solving the issue of responder immunity for salvors?

I personally have a different view than most as relates to the issues of responder immunity. While I support the idea that the Salvage community needs stronger worldwide legislation that better defines what immunity is available to a salvor, I also believe that it is the Salvor's obligation to make sure his/her operation does not result in something that requires responder immunity and to ensure that the contract that is reached contains language that indemnifies a salvor for any eventuality that occurs except in the case of gross negligence and willful misconduct. Salvors, like any other professional service provider, must have some responsibility for their actions. This is what separates the professionals from the part timers. If a salvor is indemnified for any and all actions, what separates a professional from a non-professional? Any contractor interested in taking a shot, will come in at an unrealistic price, possibly make the situation worse than it is and leave without risk or responsibility. This being said, as a result of OPA-90, the United States seems to be a region where Salvors are most concerned, not only to civil but potential criminal liabilities in the event of a real or even perceived "error." Based upon this fear, the issues of appropriate responder immunity for Salvors is an important issue to all salvors, no matter where they work.

You are on record as saying that one of the primary focus areas for ISU members is the so-called Lloyds Open Form or LOF. If LOF is the most commonly used salvage contract and has been in use for over 100 years and the ISU supports its use, do others have issue with its use? What's the alternative?

The LOF is clearly the easiest and fairest Salvage form available today. It is universally accepted by the world wide insurance communities and has been in existence for over 100 years. It is also a living document which can be modified as financial, operational and regulatory requirements change. Further, with the addition of the SCOPIC amendment, the LOF can be (and often) is used for non-traditional LOF cases where the value of the vessel and its cargo is not high enough to financially justify a response. The SCOPIC amendment to the LOF essentially provides for day rates and associated conditions which converts an LOF (which is success-based) to a time and material type agreement which compensates the contractor for use of their equipment and staff. Therefore, it is appropriate for any type of casualty response. Nevertheless, there are a number of ISU and ASA Salvors who have constructed their own type of in-house agreement. Both contain similar clauses and conditions. After 100 years of growth, rewriting and evaluation, the LOF remains the most effective Salvage Agreement in use today. As far as Donjon's use of the LOF, it is our preference but if, for whatever reason, an owner refuses to accept it, we look to standardized agreements such as those offered by BIMCO which offers a similar history of success and ability to change as conditions warrant as the LOF. Simply put, we prefer the LOF, will push for its use, but will work with an agreeable BIMCO or in-house agreement.

How, if at all, has the relationship between salvors and the insurance community evolved over time? Are we in a better place now than, say, ten years ago? What's changed, if so? And, what needs to evolve further?

Today, the relationship between the salvage and insurance communities is one of partners, rather than adversaries as was the case in years past. The reason for this is very simple. As a result of the efforts of the ISU and recently the ASA, there is a forum where the worldwide Salvage Community can come together, discuss their individual needs and concerns which can then be consolidated and brought to the attention of a representatives of insurance stakeholders for discussion and valuation; on a one-on-one basis. This is where the ISU truly excels, as it has the ability to meet with the top decision makers in the insurance industry. In a word, what we need is Communication; open and honest debate of issues that affect the industry as a whole. This is the only way to continue the positive momentum the salvage and Insurance interests have seen over the last 10 plus years. For this relationship to continue to evolve, the open and honest communication we have collectively fostered over the last 10 plus years is essential.

You've been involved in salvage for more than 32 years. What's been the biggest change in the business since you got into it, why and is that a good thing?

The biggest change is the growth of regulatory oversight and involvement in even the most minor incidents. The idea of better and more direct communication between salvors and regulators has more often than not assisted the response team (i.e. salvors, regulators and owners) in providing a quicker and more efficient response as a result of the fact that all the decision makers required are all in one room. As with most things in life, better and more open and honest communication can do nothing but improve any situation.

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MarineNews 100

The 100 Leading Companies Serving the North American Shallow Draft Market

Anatomy of a Commercial Marine Lender

Three things: experience, experience, and ... experience.

By Richard J. Paine, Sr.

It's a very familiar scenario: And, if you are the CFO, controller, president or other financial manager of your company then you have been here before. Across your conference table sits a potential new lender. He/she is very genuine in their desire to lend you money on your boats. They sincerely want to be a valued and trusted advisor to you in all things vessel-finance related. But what may be lacking is an in depth knowledge of the commercial marine industry that can only come from time and exposure to the peculiarities of our industry.

Actually, it's easy to understand why this lender tells you they want to loan you money. Lenders, both with and without significant marine industry experience, look with desire on the millions and millions of dollars spent annually to build, buy or otherwise acquire the tools of this trade ... commercial marine vessels.

Equipment Financing 101

Equipment financing in general is dominated by what are known as "short-lived assets." These can run the gamut from golf carts to MRIs to funeral cars. The loans and leases placed on such equipment usually run parallel to their short usable lives, say three years or so. To maintain a profitable portfolio, the relentless turnover requires a constant effort to replace those loans and leases that have run their course and no longer provide income.

Many a lender has had a "Eureka" moment when they realize that there are other options to the day-in-day-out chase for new loans and leases. What is the answer? High value equipment with long, long lives that might actually increase in value and usually remain in demand long after it has been paid off. Planes, trains and commercial marine vessels certainly fall into this category. This is the gift that keeps on giving, so these are desirable assets for a lender or lessor to finance or lease. But desire is only half the battle won. The other half requires that a lender have the infrastructure and level of knowledge that many lenders lack.

Successful Commercial Marine Finance

So what makes a commercial marine lender or lessor a true asset in the growth and financial success of your business? In a word: Experience. Consider the structure of a successful commercial equipment finance enterprise:

• Originators are the front lines of the organization. Those with real experience have been crawling around many bilges, have been to many shipyards, and have seen many up-and-down market cycles. They know their OSVs from their PSVs, their black oil from their anhydrous ammonia, z-drives from kort nozzles, and port (red) from starboard (green). They call officers of the lenders and identify the opportunity, collect the financial and collateral data, evaluate the viability of the project and become your advocate through the internal processes of the credit underwriting and due diligence protocols. They write and submit the transaction summary which details your company's history, org chart, operations, projections, fleet composition, major accounts and other pertinent information necessary to submit your credit request.

• Credit analysts and underwriters take the information provided by the originators and "spread" the financial statements to determine how the borrower looks financially. They consider the five "Cs" of credit: collateral, cash flow, character, capacity and capital, and decide whether or not the transaction meets the loan criteria set by the lender or lessor. This is where the rubber meets the road. Experienced commercial marine underwriters understand that fully depreciated assets no longer appear on financial statements skewing tangible net worth calculations. They consider the future revenue from a new vessel under construction or not yet in service as part of their cash flow analysis. They understand the causes and results of cyclicality in the industry and how and what financial recovery looks like. They too, like an experienced originator, have seen it all before. Commercial marine underwriters are not born; they must be taught, nurtured and grown.

• Asset managers are the next group to contribute to the due diligence efforts. After a transaction has been vetted through credit, the current and future value of the asset to be financed must be determined. The asset manager, through both personal experience and collaboration with outside surveyors, brokers and appraisers, makes this analysis for use in computing residual values, early

buyout options and amount of advance to be loaned. Too high a residual, and the lender may have an overpriced asset on their hands, but too low a residual, and the rent charged in a lease may be inordinately high. There is a balance to be struck and it, as in credit analysis, is part art and part science.

• Once the transaction has been credit and asset management approved, the lender's operation and documentation experts begin the process of putting together the nuts and bolts of the loan agreements, ship's mortgages, proof of insurance and other pertinent transaction documents. Lien searches, abstracts, U.S. Coast Guard filings are initiated for the assurance of clear title and perfection of interest for the loan or lease provider. Qualified maritime counsel's skill in maritime law makes the lender's attorney relationship to the borrower's attorney an easier (and less expensive) process for both.

• Generally speaking, if your loan is paid as agreed, then your relationship with the lender will be amicable. Should trouble arise in your payment flow you may be introduced to another group of experts that operate within the walls of the lender. Collections will work to keep you current on payments within the limits of the law, and Workout will use its expertise to, in dire circumstances, work with you on alternate payment options. Here too, if the unforeseen should happen, a knowledgeable workout specialist could help.

Lending and leasing is the water under the keel for many commercial marine operators. Having quality lenders and lessors with the requisite knowledge and experience to service the market's need can only help it to grow and remain vital.

So when you are in the market for a new lending relationship, remember how important actual experience in all aspects of commercial marine financing is. Only a lender with real knowledge of the details and nuances of providing vessel financing will be a true asset for your financial future. And the next time you are evaluating a new relationship with a lender unfamiliar with the commercial marine industry, offer some sage advice: "Learn all you can about our industry, get some real, commercial marine experience under your belt ... and then, we'll talk."

Come Together, Right Now ...

By Michael J. Toohey

Collaboration is a wonderful thing. And in Washington, DC, it seems to be a concept that has become more alien than ever before, with partisan politics that have gripped the nation's capital. But teamwork is alive and well in the inland waterways industry when it comes to supporting the concept of increasing the amount of investment raised for lock and dam infrastructure on the inland system.

Since 1986, commercial inland towing operators have been paying a user fee of 20-cents-per-gallon of fuel used while operating on the inland system that is deposited into the Inland Waterways Trust Fund (IWTF). Those monies are then matched by General Treasury dollars and spent for the purpose of new construction and major rehabilitation work on the inland waterways. The problem is that our locks are aging, with 57% operating beyond their 50-year economic design life, and by the end of this decade, 78% will be greater than 50 years old. The inland marine transportation system, while still reliable, is in need of greater investment to avoid a tipping point of catastrophic consequences for shippers, consumers, and our nation's exports.

WCI, along with its stakeholder members and supporters, has long called for increasing that 20-cents-per-gallon fuel charge to 26- to 29-cents-per-gallon. While the receipt amount for a given year depends on traffic volumes and trip distances which vary year to year, on average each penny of user fee yields about $4.2 million in IWTF receipts. So a 6-cent tax increase would add around $25.2 million annually to the Trust Fund (or $50.4 million total with the government match) and a 9-cent increase would add $37.8 million (or $75.6 million total with the government match) annually for the benefit of priority navigation projects on the system. With the current, status quo timeline for completing new construction and major rehabilitation of navigation projects across the system stretching out to the year 2090, additional annual investment at these levels would be an extremely welcome boost.

This user fee increase is supported by those who pay it -- the 300 commercial towboat operators -- while the entire nation benefits, including hydropower, municipal water supply, recreational boating and fishing, flood control, national security, and waterfront property development that result from the lock and dam system.

The most recent expression of support for this user fee increase came from 82 stakeholder organizations from agriculture, labor, conservation, business, manufacturing and others in a letter sent April 28 to members of the Senate Finance Committee and its Chairman Ron Wyden of Oregon and Ranking Member Orrin Hatch of Utah. "We hope that members of the Senate Finance Committee will support inclusion of an increase to the user fee in comprehensive tax reform or any appropriate revenue measure ahead," the letter said.

The letter also stated some key facts: The inland waterways provide capacity and the most cost-competitive transportation option for our bulk commodities used in America and exported to marketplaces worldwide. Specifically, these include:

• 60% of the nation's export-bound grain is transported on the inland waterways.

• An effective and efficient water transport system is essential to supply American farmers with fertilizer for Spring and Fall planting seasons.

• Farmers depend on our waterways' infrastructure to compete and win against producers outside the USA.

• The soon to be completed Panama Canal expansion will create opportunities for increased American trade, but not if our channels are not dredged and our locks and dams are not functioning.

• American family-wage jobs depend on operational ports and inland waterways.

• The waterways are vital to our manufacturing sectors and to the construction industry.

• American consumers benefit from transportation cost-savings made possible by the inland waterways; for every $1 invested in our inland waterways, $10 is returned in national benefits.

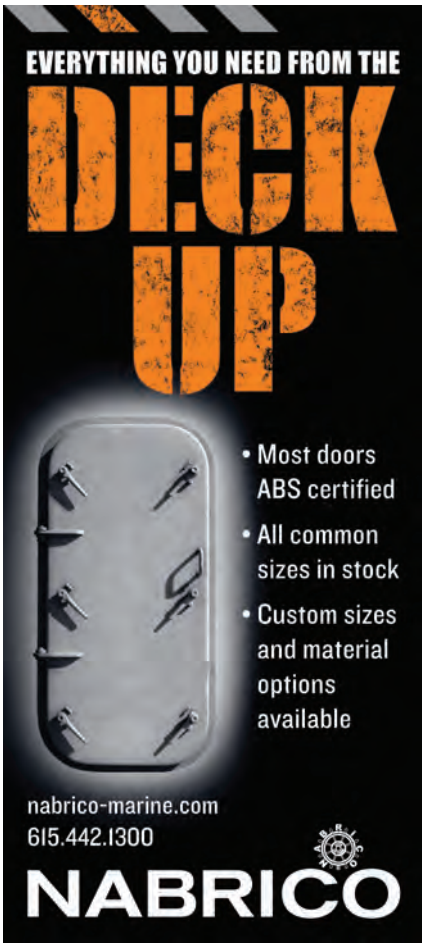
It is true that most of America's locks and dams were built in the 1920s and 1930s, yet are used to transport 21st century cargoes that fuel our modern economy. This critical component of the transportation supply chain needs reinvestment and recapitalization, and any appropriate revenue bill that includes an industry sought increase in the user fee it pays is fiscally responsible.

A similar letter was sent last September to the House Ways & Means Committee and became the basis for a recommendation to raise the per-gallon user fee by 6 cents that appeared in Committee Chairman Dave Camp's discussion draft of a bill on tax reform. And as this letter is testament, collaboration is critical for telling Congress what the people want; in this case, increased investment in a key component of the nation's freight transportation network.

See the Senate Finance Committee letter and its 82 signers here: **http://waterwayscouncil.org/wp-content/uploads/2013/01/Senate-Finance-Letter-with-logos1.pdf**

WATERWAYS COUNCIL, INC.

With more than 30 years of federal government expertise, Mike Toohey serves as WCI's President and CEO.



Protecting Your Right to a 'Bon Voyage'

By Earl F. Weener

The National Transportation Safety Board's Earl F. Weener responds to our March 2014 *MarineNews BY THE NUMBERS* feature, entitled "Passenger Vessel Safety Record Defies NTSB Hit List." The NTSB Board Member takes issue with the inference that their scrutiny of the record of passenger vessel safety is misplaced and should be better directed elsewhere. Naturally, we still think otherwise. You can find our article by visiting: http://digitalmagazines.marinelink.com/nwm/MarineNews/201403/

Each year, the NTSB issues a Most Wanted List of safety advocacy priorities. This year, one of the top priorities is to advance passenger vessel safety. Why? Because when people step onto a ferry, sightseeing boat, or cruise ship, they have a right to a 'bon voyage' — literally, a "good trip" and figuratively, a "safe trip" — whether in their daily commutes or on a family cruise. However, as we have seen, too often lately, this is not always the case. One recent accident is particularly disturbing because it occurred in the very same commuter ferry market as two other ferry accidents in the past 4 years, New York's lower Manhattan.

On January 9, 2013, the commuter ferry Seastreak Wall Street, carrying 331 passengers and crew members, struck a pier in lower Manhattan, causing 80 injuries, four of them serious. Again, this is in the wake of two prior accidents, one in which the result was not only injuries, but also deaths.

Is there a common thread here? Yes. Upon completing the investigation of this accident, along with the two prior accidents, again and again we found a lack of good safety practices — not the failure of the vessel — at the root of an accident. Risk management is a key factor in passenger vessel operations. Being aware of your potential risks and knowing how to effectively control them is important for the safety of a vessel's passengers and crew. One of the most effective ways to manage this process is through implementation of a safety management system (SMS). When risks are effectively identified and managed through SMS practices, not only will operations improve, so will outcomes, even when there is an accident. Not surprisingly, the international marine community understands this, which is why SMS is already mandatory for international vessel operations. Noteworthy, is that now some of our domestic operations, too, are coming to understand the importance of these concepts.

In 2003, the Staten Island ferry Andrew J. Barberi struck a maintenance pier while attempting to dock at the Staten Island Ferry terminal, killing 10 and injuring many others; an eleventh victim of the accident subsequently died. The severity of the accident was partially attributable to the New York City Department of Transportation's (DOT's) weak safety management. The New York DOT responded by reorganizing the agency, strengthening its safety culture, and implementing an SMS. In 2010, the same ferry struck the St. George terminal. This time personnel carried out their designated emergency response procedures, established under the SMS, quickly and effectively. Few passengers were seriously injured, and none died.

In other cases, we found accidents that clearly should never have happened — again attributable in part to poor risk identification and management. In July 2008, the Block Island, a 187-foot-long US passenger and car ferry vessel carrying 294 passengers and 11 crewmembers, collided with the 140-foot-long US Coast Guard cutter Morro Bay, carrying 21 personnel, on Block Island Sound, Rhode Island. The NTSB's investigation revealed failure to follow navigational "rules of the road" in reduced visibility, ineffective use of the radars on board both vessels, and lack of safety management systems on U.S. ferries.

In addition, the available out-of-water survival craft on board the Block Island vessel could not have accommodated the ferry's total passenger capacity. And, like many other U.S. passenger ferries, the Block Island carried no voyage data recorder.

When passengers board a marine vessel, whether for a commute to work, a sightseeing trip around the bay, or a cruise to Alaska, they should be confident safety is being effectively managed. This means ensuring a trip proceeds underway with appropriately trained crew, well equipped and main-

tained vessels (including out-of-water flotation devices for every person on board and operational voyage data recorders), and adequate measures to address emergency situations.

Although accidents on passenger vessels are relatively rare, the consequences can be catastrophic. The size and capacity of passenger vessels continues to increase. The time to address these safety issues is now.

Some have criticized the NTSB's focus on this issue, calling it an assault on an already safe industry. A recent criticism published in ***MarineNews*** states passenger vessel accidents caused "only" 17 deaths in 2010. In response, alternatively, consider that same year from the perspective of the commercial aviation industry. In 2010, commercial aviation accidents caused zero deaths in the United States – just one of a four-year span without an airline fatality. Yet, the NTSB has every intention of continuing to emphasize areas for improvement in commercial aviation. Safety requires vigilance, not complacency. In passenger vessel safety there is both room for improvement and a need for the NTSB's continued vigilance.

The NTSB's Most Wanted List is an opportunity for all stakeholders to engage in conversations about how we can work together to make vessels safer for passengers. Last month, the NTSB convened a 2-day forum, Cruise Ships: Examining Safety, Operations and Oversight, to review the regulatory and investigative framework under which cruise ships operate, ship design, fire protection, operations and corporate oversight of cruise ships, and more. We also explored some recent high-profile incidents. The goal of the forum was to learn more about the current state of cruise ship safety from industry stakeholders and regulators on behalf of the traveling public.

We urge publications like ***MarineNews*** and safety-minded executives throughout the passenger vessel industry to reexamine www.ntsb.gov/index.html

It is a list of safety priorities all stakeholders can support in the interest of improving safety. The NTSB Most Wanted list is available on the NTSB's website: www.ntsb.gov

***Earl F. Weener**, Ph.D. took the oath of office as the 41st Member of the National Transportation Safety Board on June 30th, 2010. He was nominated by President Obama and confirmed by the Senate for a term that expires December 31, 2015. Weener has an accomplished career in aviation as an engineering executive, safety advocate, industry safety spokesperson, engineer and pilot. Member Weener also has extensive marine experience. He obtained his U.S. Coast Guard Master's License in 2000. Weener earned all three of his academic degrees in Aerospace Engineering from the University of Michigan - his bachelor's degree summa cum laude, master's degree and doctorate.*

Mother Nature Can't End Dredging Crisis

By Jim Weakley

There has been a lot of speculation of late that the gargantuan ice fields covering the Lakes this winter will, when they finally melt, raise water levels significantly and ships will carry more cargo each trip. That is, frankly, very far from certain.

First, water levels are devilishly hard to predict. For example, in May of 2012 the water level on Lake Michigan/Huron was predicted to be as high as 8 inches above long term average (LTA) by October, but when autumn rolled around, Michigan/Huron was actually eight inches below LTA.

Second, since the U.S. Army Corps of Engineers (USACE) rarely gets enough money to keep up with the natural rate of siltation (3.3 million cubic yards per year), let alone tackle the dredging backlog, it is very conceivable that some ports will have less draft this year even if water levels rise. So, in short, Mother Nature is not going to end the dredging crisis on the Great Lakes.

This means we have to stay the course and keep fighting for more dredging dollars from the Harbor Maintenance Trust Fund (HMTF). The need remains very real. The Corps estimates the dredging backlog now tops 18 million cubic yards. As a result, even though our largest vessels have at times carried more than 70,000 tons of iron ore or coal in a single trip through the Soo Locks, our top loads in 2013 were generally less than 66,000 tons. Those steelmakers who had to curtail production this spring probably could have ridden out the slow start to navigation this season if the vessels had delivered full loads last year.

There is progress to report. The Lake Carriers' Association (LCA) and the Great Lakes Maritime Task Force have been very vocal about the need for more dredging on the Lakes and the Administration has responded positively. Our O&M appropriation has grown from $86 million in 2013 to $120 million in 2014. As a result, we should see the dredging backlog shrink a bit and much needed upgrades and maintenance performed at the Soo Locks.

Still, we need a long-term solution, and that's where the Water Resources Reform and Development Act (WRRDA) comes in. The House and Senate continue to conference over their respective bills, but I am hopeful the final version will accomplish two goals.

First, we need to increase expenditures from the HMTF. It is not in our national interest that the HMTF keep amassing a surplus. It is in our national interest that vessels on all our waterways carry full loads. Both the House and the Senate bill increase the annual allocation from the HMTF.

The House bill contains another key provision that directs the USACE to manage the Lakes as a system in terms of dredging. Currently the Corps views the Lakes as 60 individual ports and pits them against one another for dredging dollars. Treating the Lakes as a system should in itself bring back more dredging dollars.

Many Great Lakes legislators deserve credit for the progress we've made, but two in particular, Senator Carl Levin (D-MI), and Rep. Candice Miller (R-MI), deserve to be singled out. Senator Levin has been our champion in the Senate and Congresswoman Miller authored the provision in the House bill that designates the Lakes a system in regards to dredging.

I cannot predict when the House and Senate will reach final agreement on the WRRDA, but the sooner the better. As I've said before, it's time to put the "trust" back in the Harbor Maintenance Trust Fund.

I need to address another issue, and that is the terrible delays Great Lakes shipping has suffered because of the brutal winter. The U.S. Coast Guard started breaking ice on December 6th. That's the earliest kick-off of Operation Taconite on record. It was a struggle for Coast Guard icebreakers and freighters alike and cargo totals in December and January reflected that reality. Iron ore cargos in those two months were down more than 2.5 million tons compared to a year ago. Coal felt the chill, too. The worst was yet to come. The first convoy left Duluth/Superior on March 26th with iron ore for Gary, Indiana. Under normal circumstances the voyage takes about 62 hours, but the ships did not reach Gary until April 7th!

Cleveland needed iron ore too, but a cargo loaded in Es-

canaba, Michigan, on March 5 did not arrive until March 17th. The voyage should have taken about 50 hours. We have to be realistic. This was the worst winter in decades. Still, LCA has said before that the Lakes need more than one heavy icebreaker. The MACKINAW can't handle the job alone. We came very close to building her twin in the economic stimulus package in 2009. It's time to reconsider building another MACKINAW. Furthermore, the Coast Guard's Chadburn must stay set at Full Ahead concerning the service life extension of the 140-foot-long icebreaking tugs; otherwise we court disaster.

The ice on the Lower Lakes has pretty much loosened its grip and conditions are improving up North. Still, a lot of cargo got delayed, so meeting the needs of commerce will be a challenge this year. I am, however, confident the fleet is up to the task.

__Jim Weakley__ has served as President of Lake Carriers' Association since January 16, 2003. As chief spokesman for U.S.-flag Great Lakes carriers, he represents 57 deep-draft vessels from 17 companies on a wide range of issues. A 1984 graduate of the U.S. Coast Guard Academy, Mr. Weakley earned a Masters of Business Administration from the Executive Program at Case Western Reserve University in 1999.

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Many variables drive the design decisions for High Speed Craft and RHIBS. Commercial off the Shelf Solutions often tie all of these together.

By John Haynes

The world is changing fast and nowhere is this truer than in the fast boat sector. When selecting a new boat, the questions used to be relatively simple: how long, how many engines, what fuel type and how fast? Military and professional maritime organizations have been driving the evolution of extreme fast craft for over 30 years. Naval architects, engineers and boat builders have risen to the challenge, producing unique boats in aluminium, fiberglass and composites engineered to deliver high performance. The next stage has been ensuring that structures, equipment and crews can withstand the resulting forces. Commercial off the shelf (COTS) equipment is an increasingly important part of the solution, for more than one reason.

Changing Requirements, New Platforms

Since the millennium, RHIBs and High Speed Craft (HSC) have been at the cutting edge of maritime operations for everything from counter terrorism, homeland security and law enforcement to extreme weather rescue. Looking to the future, navies and coast guards around the world will make financial, environmental and operational decisions to use fewer ships and more boats to secure their coastlines and waterways. For military and security applications, the next generation of RHIBs and HSC will need to be larger, faster, multi-role craft with the same navigation, communication and information systems that are found on a ship's bridge. Many fast craft will include modular design features that allow them to vary their internal

and deck layouts for different mission profiles or as their role changes over time.

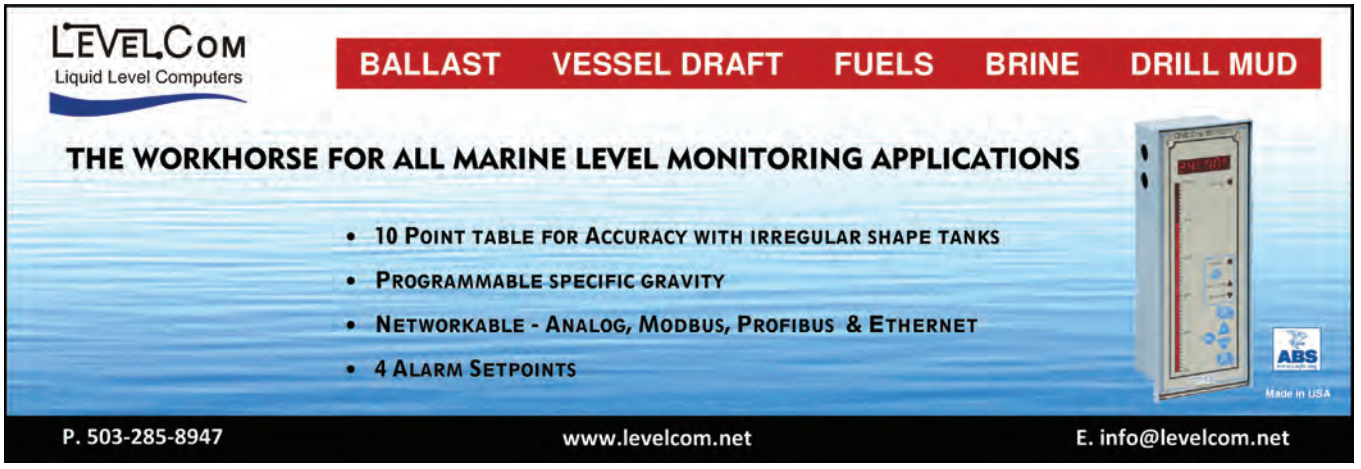
Although Offshore Patrol Vessels (OPV) are used all over the world to cover large areas of water, it is the ship's boat that is launched to board a suspect craft. Visit, Board, Search, Seizure (VBSS) are maritime boarding actions that range from anti-piracy to conducting customs, safety and other compliance inspections. As sophisticated criminals increasingly use sea transport the specification of law enforcement and security craft is evolving. The motivation is high when typical illegal cargoes include narcotics, arms and people. Smugglers operate from all sizes of vessels while the boarding teams and naval forces usually transit from a larger vessel to the target in 25 to 40 foot RHIBs.

For military and security applications, the next generation of RHIBs and HSC will need to be larger, faster, multi-role craft with the same navigation, communication and information systems that are found on a ship's bridge. Many fast craft will include modular design features that allow them to vary their internal and deck layouts for different mission profiles or as their role changes over time.

An increasing role for larger RHIBs and HSC is asset protection or high interest vessel escort which requires a moving security zone as ships approach or leave a port. This level of positive control requires multiple craft supporting interoperability between military, police and government agencies. OEM boat builders providing craft to this sector need to fully understand the end-user requirements. Specialist solutions include lightweight ballistic protection, shock mitigating seating linked to control systems and sophisticated surveillance electronics. With a full situational awareness suite the electronics may now be higher value than the standard boat. But with all this technology various organizations still require an alongside ramming or 'hard contact' capability to physically intercept other craft.

The call for extreme fast craft with specific requirements and capabilities has led to innovative designs including catamarans, multi-hulls and novel hull forms. However the process of one-off craft design and bespoke equipment can mean that in the period from concept through tender to launch the requirement has changed, technology is outdated or the craft has simply become too complex for its original LOA. Timelines and budget constraints are increasingly driving procurement decisions. By identifying the priority roles and accepting a level of compromise various Commercial Off The Shelf (COTS) hull, engineering and equipment solutions are increasingly viable.

RHIBs make excellent personnel carriers. The inflatable collar makes the craft extremely versatile by providing high stability and the ability to fender off vessels without damage. Foam collar designs offer a heavy duty fender that can be cut, perforated or shot but will not deflate. Tampa Yacht Manufacturing (TYM) is working with clients around the world to create cost effective COTS fast craft platforms. Robert Stevens of TYM said, "A RHIB with air filled tubes is often a good choice for stopping and searching other craft. If resistance is expected then foam filled tubes backed up with ballistic protection may be required. A proven performance hull can be utilized for various applications. Our designers simply re-configure the layout and onboard



CTruk THOR Twin Hulled Offshore Raider

equipment for patrol boat, law enforcement or fast rescue applications."

Wide Range of Operations

Maritime organizations use RIBs and HSC to perform a wide range of operations. The consistent aim is that crews arrive safely at their destination ready to do a job, or in some cases 'fit to fight.' When extreme fast craft simply have a design objective for 'unbreakable boats with a surplus of engine power' then 'man' becomes the weakest link. To maximise crew performance, increase sea time and ensure a high mission success rate professional operators need to identify what sea conditions could be encountered during transits, then ensure that the type and size of craft they are using is suitable for the purpose.

Brunswick Commercial & Government Products (BCGP) is continuously expanding their ranges of inboard and outboard craft ready for outfitting to client specifications with high end onboard electronics and various COTS component and equipment options. Jeremy Davis, Director of Sales, told ***MarineNews*** in April, "BCGP has been a flagship range for over fifty years in the 15 to 27 foot range. To meet the changing needs of our professional clients we are now building Whalers up to 42 feet and our Impact RHIB range up to 40 feet. To ensure that we cover all mission requirements BCGP now offers the Sentry aluminium series, based on a supply agreement with Metal Craft Marine to produce our hulls up to 45 feet."


Image shows BCGP and Metal Craft Marine joint production 36' Sentry configured for on water rescue support within the vicinity of civil aviation runways.

The high performance components industry that has emerged around the demanding race boat community of Southern Florida has developed COTS materials that can be retrofitted as upgrades, or specified on new professional sector boats. Navigation and communication units with are classic example of COTS systems.

COTS Systems: smart & cost-effective

Patrolling is often at low speeds, interception is not. Border forces, law enforcement and critical asset security operators have discovered that to run these multi engine rigs at full power it is essential to have stronger steering systems, more responsive throttles, performance exhaust systems plus drives and propellers that transfer power into thrust and control. The high performance components industry that has emerged around the demanding race boat community of Southern Florida has developed COTS materials that can be retrofitted as upgrades, or specified on new professional sector boats.

Navigation and communication units with are classic example of COTS systems. It is relatively simple to identify potential systems, then do side by side comparison of functions and durability. There is no reason why a modern nav or comms system should fail, however as all boat operators will tell you, 'electronics and water still don't mix!' A cost effective solution is to hold spare units to 'plug and play' or have an ASAP delivery agreement for unit replacement. Integration is still an ongoing issue with both bespoke and COTS hardware including GPS / chart plotter / radar / AIS units and the associated software. Beyond this, many organizations, especially law enforcement and SAR, now need traditional marine electronics to integrate with PC applications, tablets and smart phones.

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Fuel management is an important consideration for all planing craft. If fuel budgets become an issue crew training is usually reduced with craft only launched for operational purposes. Top speeds for interceptors can exceed 60 knots, but these 'burst speeds' are rarely used as high performance boats have a recommended cruising speed linked to optimum fuel range. Commercial planing craft, including pilot boats, crew boats and windfarm support craft generally operate at fewer than 30 knots or they burn too much fuel and cannot complete the day's work.

As a result of high fuel prices in Europe, workboat and windfarm support boat operators need hard data to ensure that their transits are profitable. These vessels are on contracts that require them to operate continuously seven days a week, only stopped by significant wave height limits. Electronic COTS systems are now available that utilise various sensors to record the fuel consumption history of any vessel. The systems are designed to manage and ultimately

reduce fuel consumption for professional operators. For example, C-Sense Project Leader, Pierre-Alexis Dormegnies said, "The Eco-Pilot has an onboard memory which allows two years of fuel consumption to be recorded. The precise analysis of fuel consumption history enables Eco-Pilot to model a set of typical future consumption figures, suggesting economic actions to reduce fuel consumption."

It is no coincidence that smugglers of people and contraband often select RHIBs. This is simple market forces at work as RHIBs are relatively cheap and ready to use, off the shelf. If the buyer finds a boatyard that asks no questions, the RHIB concept allows for stretched hulls and multiple outboard set ups. With no procurement process to go through, no pollution or environmental compliance, no health and safety concerns and no fuel budgets this can deliver a very simple and efficient platform. At the recent Fast Patrol & Interception conference in London, high level maritime agencies from three countries demonstrated that simple is good. They all showed smugglers boats that had been impounded then re-badged as interceptors. These are known as 'modified boats' or 'reformed boats'. This Captured Off The Smuggler version of COTS can be viewed as innovative re-cycling and effective budget management.

Looking globally various regions are building fast craft fleets from zero. Some organisations consider the craft to be a mobile platform that gives them a presence across a specific area of sea or coastline. The term 'L1' associated with a tender simply means that in order to get the maximum number of craft for their fleet budget, the lowest bid typically wins. As specialist COTS solutions evolve to respond to these end-user requirements the percentage of COTS equipment on all fast craft is likely to increase.

John Haynes, *AFNI, is a Yachtmaster Ocean and Advanced Powerboat Instructor. Subject matter expertise includes high speed craft consultancy, product development and specialist training. He is Operations Director of Shock Mitigation and founder of the RIB & High Speed Craft Directory that brings together specialist boats and equipment for the professional sector.*

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U.S. Dredging Needs Grow
As Army Corps' Budget Shrinks

Spend dollars up on dredging, cubic yards moved down. Combined with a reduction in the USACE federal budget, the situation threatens a perfect storm for domestic requirements.

By Susan Buchanan

U.S. dredging this decade, measured in cubic yards, is only half as active as it was in the early 1960s, with maintenance down slightly since then and new work off considerably, according to the U.S. Army Corps of Engineers or USACE. The nation's spending on dredging in unadjusted dollars has swelled tenfold since the 1960's, however. Because domestic dredging is protected by the Jones Act, companies must be owned by U.S. citizens, employ Americans and use equipment built here.

Dredging SITREP: June 2014

The FY 2015 civil works budget at USACE, the federal agency most engaged in dredging, is smaller than in 2014. Members of Congress this spring expressed concern about the new budget. The United States is lagging a number of nations in port modernization and needs to do more deepening to fully participate in global trade, they said. And, this goes beyond the need to deepen deep draft coastal ports. Inland rivers, vital to moving raw materials and grain to the export markets, need constant attention.

Factors driving world dredging, including growth in sea trade, bigger container ships, climate change and sea level rise have kept U.S. dredging from declining further. Globally, port and harbor expansions, new ports, enlarged navigation channels and maintenance work account for nearly three-fifths of dredging activity. Data obtained from the USACE for actual costs and dredging activities dating back to 1963 shows activity down, but costs soaring. A Summary of Industry Activities during that time frame is depicted below:

FISCAL	DOLLARS			CUBIC YARDS		
YEAR	MAINT	NEW WORK	TOTAL	MAINT	NEW WORK	TOTAL
1963	$59	$107	$166	217	263	480
1968	$70	$42	$112	249	89	338
1973	$112	$45	$157	276	36	312
1978	$214	$93	$307	210	71	281
1983	$355	$89	$444	254	33	287
1988	$295.40	$178.00	$473.40	212.8	72.6	285.4
1993	$410.20	$104.70	$514.90	235.5	33.5	269
1998	$532.50	$178.00	$710.50	211.3	27.3	238.6
2003	$597.20	$290.10	$887.30	191	42.8	233.8
2008 *+	$749.40	$262.30	$1,011.70	190.4	26.1	216.5
2012 +~*	$857.40	$362.70	$1,220.10	216	21.9	237.9

China, the world's largest dredge market, and the United States are both "closed" or inaccessible to foreign competitors, Netherlands-based Rabobank noted in its dredging outlook in September. European dredge markets are mostly open; non-Chinese Asian markets are mixed; and Latin America, the Middle East and Australia are open. In the most recent data available, China accounted for 29 percent of world dredging work in 2011, followed by Europe with 13 percent. Since then, China's CCCC, the parent company of dredgers CHEC, has signaled plans to become more active in global dredging.

Climate Change Stimulates Dredging

Storm damage and protecting against climate change have raised demand for dredging, Rabobank said in September. A 2011 UN report assessing climate impacts estimated that 40 million urbanites live in 100-year floodplains, where the chance of a severe flood is once every 100 years. That number could grow to 150 million people by 2070. In terms of property and infrastructure value, Miami, Fla., followed by Guangzhou, China and New York are the cities most exposed to sea level rise and storms, Rabobank said.

In 2012, Hurricane Sandy caused $50 billion worth of damage, and Katrina in 2005 inflicted $128 billion in losses in equivalent dollars. No value, of course, can be placed on lost lives. Rabobank noted that the cost of installing a good defense system before Sandy hit was an estimated $6.5 billion in 2009 – only a fraction of the dollar value of damage caused by the storm. Governments need to take measures to protect populations from sea level rise and hurricanes, the bank warned in September.

Sea Trade & Ship Size Expand, Driving Dredging

Between 1977 and 2011, global GDP rose by 3.2 percent annually and seaborne trade grew 3.1 percent while the number of containers on ships surged 9.7 percent yearly, according to Rabobank. Growth in seaborne trade

**Includes PL 84-99 and FY 05 Hurricane Katrina Supplemental (PL 109-062) amounts / +Includes Hurricane Supplemental work (HSW) amounts / ~ Includes AARA amounts. Dollars and Yards (in millions)*

USACE photo: NY/NJ Harbor dredging action.

and containerization have together spurred investment in deepening, expanding and building ports and enlarging channels.

Of the millions of tons of goods shipped globally each year, crude oil accounts for over 20 percent and containers for over 15 percent, followed by iron ore, coal and LNG. Very large crude carriers or VLCCs and ultra-large crude carriers or ULCCs, both introduced in the 1970s, have sparked port expansion and dredging. And ever-larger vessels for containers, which were launched in 1966, have greatly boosted dredging demand. To maximize economies of scale, dry goods are increasingly shipped via containers. As container vessels grow, customers benefit from lower costs, raising demand for goods and prompting investment in even bigger boats.

In 1980, the world's largest vessels shipped 4,100 TEUs or twenty foot containers, and by 2012 that had ballooned to15,000 TEUs. As of 2014, seven of Denmark-based Maersk "Triple E" containerships, with a capacity of 18,000 TEUs and a draft of 14.5 meters or 48 feet, were in service globally, with more about to be delivered by the company or under construction. They're too big for the Panama Canal's new dimensions and most American ports, but can transit the Suez Canal for trips between Europe and Asia.

After the Panama Canal's expansion is finished in 2015, container vessels of up to 13,000 TEUs with a maximum draft of 15 meters, a length up to 366 meters and a width of 49 meters can be accommodated.

Most of the world's busiest ports, including Long Beach and Los Angeles in California, can handle huge container vessels with a draft of 14.5 meters. Rotterdam's heavily dredged Maasvlakte II port is 20 meters deep. U.S. ports, including New York City, Norfolk and Baltimore, have increased depths to at least 15 meters or 50 feet, and the Port of Miami is doing so now.

Port Deepening & Post-Sandy Work

The biggest U.S. dredging projects now are maintenance work, port deepening and activity following Sandy in October 2012. When asked about projects, Barry Holliday, executive director of trade group Dredging Contractors of America in Washington, DC, said: "Currently the top two jobs in dollars are $174,111,456 for Miami Harbor deepening, awarded in May 2013 and expected to continue until mid-2015, and $68,681,500 for deepening the Arthur Kill in New York/New Jersey Harbor, awarded in January 2013 and to be completed this year."

He noted that Congress appropriated $1.086 billion in FY 2014, up slightly from the previous year, to USACE for navigation projects reimbursed by the Harbor Maintenance Trust Fund. The federal Harbor Maintenance Tax, established in 1986, is imposed on shippers based on the value of goods moving through ports. The tax is no longer collected on exports. Revenue is placed in a trust fund to be used for maintenance dredging of federal navigation channels. HMTF revenue has grown in the past decade but ports, shippers and dredgers complain that some of the money has been used to offset other federal spending.

Holliday said the Hurricane Sandy Emergency Supplemental Appropriations bill or H.R. 152, signed into law in Feb. 2013, included about $600 million for maintenance dredging projects in 2013/14 and more than $1 billion for beach replenishment. Deepening the Arthur Kill is part of a project, dating back to 1986, between the Port Authority of New York and New Jersey and USACE, to accommodate big container ships. Estimated project costs for NY/NJ Harbor Deepening, including non-federal shares, total $2,675,256,800 since 2002, according to Army Corps spokesman Gene Pawlik in Washington, DC. Deepening of the NY/NJ Harbor should be finished in March 2016. All of its project components were funded separately before FY 2002, Pawlik said.

Another major dredge project is deepening of the Delaware River shipping channel from 40 to 45 feet. Delaware deepening, estimated at $338,948,000 including non-federal sharing, should be finished in 2017, if fully funded, Pawlik said. Under a 2008 partnership, the cost of initial

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Under varying levels of direction from the Director of Ferry Engineering and Deputy Director of Ferry Maintenance of the Staten Island Ferry, with some latitude for independent judgment, is responsible for the planning, control and execution of structural, mechanical, and electrical marine engineering projects on municipal ferries, barges and marine vessels operated by the Department of Transportation. Performs related work such as serving as the Agency lead and project manager for design and construction of new ferry classes as well as all other new vessel construction. Responsible for the management of vessel design and construction contracts on behalf of the Agency, working independently in the field with decision-making authority.

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1. A Baccalaureate Degree in Marine Engineering or Naval Architecture from an accredited college and five years of full-time paid experience in marine engineering operations, maintenance, design and repair, including writing contracts and maintenance specifications for the maintenance, design and repair of marine vessels and managing major marine projects including dry dockings; or closely related experience; or
2. Seagoing experience as a Chief Engineer or 1st Assistant Engineer with a United States Coast Guard Engineering License of Steam or Motor Vessels of any horsepower may be substituted for up to three years of the experience described in 1 above, but all candidates must possess at least a Baccalaureate Degree in an engineering discipline or Naval Architecture.

Preferred Skills

1. Experience in construction and repair of marine vessels, with on-site shipyard experience, is highly desirable.
2. Thorough knowledge of American Bureau of Shipping (ABS) & US Coast Guard (USCG) shipbuilding rules & regulations strongly desired.
3. Design and specification writing and review strongly preferred
4. Experience in the design process and construction of marine vessels, from concept through final construction, and in the management of large marine projects is desirable.
5. Knowledge in the use of automated design software is desirable.

Additional Information

Moderate travel to extensive travel, including out of state, will be required. May include travel periods of long duration.

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USACE Dredge Essayons which travelled north to the Corps' Alaska District, to dredge the Cook Inlet Navigation Channel.

construction is 35 percent covered by the Philadelphia Regional Port Authority and 65 percent by USACE. The project, which benefits five Pennsylvania ports and the ports of Wilmington, Del. dates back to FY 1992.

USACE's FY 2015 Budget Is Smaller

The FY 2015 budget for USACE's civil works program is $4.561 billion in gross discretionary funding, down $265 million or 5.5 percent from FY 2014's $4.826 billion, Pawlik said. With total funding from all sources-- including Rivers and Harbors Contributed Funds, Federal Permanent Appropriations and the Coastal Wetlands Restoration Trust Fund--the agency's FY 2015 civil works budget is $4.959 billion, $264 million less than in FY 2014.

The enacted FY 2014 appropriation for USACE's civil works program was $5.467 billion, Pawlik said. Compared with FY 2014's enacted appropriation, the 2015 budget of $4.561 billion is down $906 million or 16.6 percent.

Of USACE's $4.561 billion in FY 2015 gross discretionary funding for civil works, $3.517 billion is from a general fund; $915 million is from the Harbor Maintenance Trust Fund; $85 million is from the Inland Waterways Trust Fund and $44 million is from Special Recreation User Fees, Pawlik said. Other sources are estimated at $398 million, with $300 million from non-federal interests such as the Rivers and Harbors Contributed Funds and $20 million in permanent appropriations. Another $78 million is available from the Coastal Wetlands Restoration Trust Fund for the work of several federal agencies, including USACE, and is overseen by a federal-state interagency task force led by USACE.

The President's FY 2015 budget includes $1.825 billion for USACE's navigation program, below $1.884 billion in FY 2014, Pawlik said. It provides $842 million for inland navigation, mostly for operation and maintenance of high use waterways, including the Upper Mississippi River ($152 million); the Ohio River ($115 million); the Gulf Intracoastal Waterway ($51 million); and the Illinois Waterway ($41 million).

USACE's coastal navigation programs are allocated $979 million in FY 2015, mainly for project maintenance, and include $915 million in work that's eligible for reimbursement from the Harbor Maintenance Trust Fund. FY

USACE Dredge Hurley In operation on the Mississippi River.

2014 and FY 2015 navigation programs and their dredging components account for roughly 40 percent of USACE's civil works budget, Pawlik said. In the three years before FY 2014, navigation was allocated about 35 percent of the civil works budget.

A number of U.S. Senators complained during a Senate hearing, held in late March on the Corps' 2015 funding requests, that the agency wasn't advocating for more dredging money. Senator Mary Landrieu, D-La, said the 2015 budget left the agency without enough funds to dredge the Mississippi River between New Orleans and Baton Rouge and the Port of Lake Charles. Jo Ellen Darcy, the Corps' assistant secretary, responded that FY 2015 funding for federal agencies was tight.

USACE's civil works missions include commercial navigation, flood and coastal storm damage reduction, and aquatic ecosystem restoration. The agency funds programs that contribute to the protection of the nation's waters and wetlands; hydro-power generation; restoring sites contaminated by past efforts to develop atomic weapons; emergency preparedness; and training to respond to natural disasters.

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... In 2012, Hurricane Sandy caused $50 billion worth of damage, and Katrina in 2005 inflicted $128 billion in losses in equivalent dollars. No value, of course, can be placed on lost lives. Rabobank noted that the cost of installing a good defense system before Sandy hit was an estimated $6.5 billion in 2009 – only a fraction of the dollar value of damage caused by the storm. Governments need to take measures to protect populations from sea level rise and hurricanes, the bank warned in September.

Louisiana's Dredging Needs Are Sizable

Louisiana requires considerable maintenance dredging. "Within the New Orleans District, our top two dredging projects are Operation and Maintenance of the Mississippi River from Baton Rouge to the Gulf of Mexico and O&M of the Calcasieu River in Southwest Louisiana," Ricky Boyett, spokesman for the Army Corps' New Orleans District, said last month. "These channels must be maintained annually, and that typically involves multiple dredging contracts." This year's budget for the Mississippi River from Baton Rouge to the Gulf is $95.1 million, and covers O&M items in addition to dredging, he said.

"Right now in the Mississippi River, we have the cutterhead dredge GD MORGAN from Weeks Marine working a contract for $13.6 million and the hopper dredge BAYPORT from Manson Construction working a contract for $6.2 million," Boyett said in May. This spring both vessels were dredging near Head of Passes, where the Mississippi River branches off--into Southwest Pass to the west, South Pass in the center and Pass A Loutre to the east--at its mouth in the Gulf of Mexico. Weeks Marine is headquartered in New Jersey, with offices in Louisiana and Texas, and Manson Construction is based in Houma, La.

Southwest Pass is used by ocean vessels bound for ports from New Orleans to Baton Rouge. USACE maintains that channel to a 45-foot depth. In a beneficial use, GD MORGAN this spring was placing removed sediment in the environmentally sensitive Southwest Pass area.

GLDD Dominates the U.S. Market

Great Lakes Dredge & Dock Corporation in Oak Brook, Ill., was the lone U.S. firm among the world's top ten dredging companies ranked by sales in 2012, according to Rabobank last fall. The largest dredger was CHEC in China, followed by Jan De Nul in Belgium. Fleets swelled at both of those companies from 2004 to 2012. Other top-

Dredge Hurley working near Thebes.

Courtesy USACE

ten companies are based in Europe, Asia and the UAE.

When GLDD reported annual earnings in February for the year ended in December, CEO Jonathan Berger said: "Our continuing business, led by our dredging division, delivered a strong year, generating $98.9 million in adjusted earnings before interest, taxes, depreciation and amortization from continuing operations. Record coastal protection work and an increase in foreign capital work, along with a strong first year from our Terra Contracting business, helped make 2013 our second best year ever for earnings." Terra, acquired by GLDD in early 2013, remediates and removes contaminated sediment and cleans up Superfund sites.

Berger said GLDD won $692 million, or 54 percent, of the domestic dredging bid market in 2013. Coastal protection work accounted for $245 million of those awards. Much of that work was funded by the Hurricane Sandy appropriations bill. "Our win rate was also driven by the award of the first two phases of the PortMiami project for $174.1 million," he said. "A remaining option of $31.6 million was awarded on Jan. 31, 2014, bringing the contract's total value to $205.7 million."

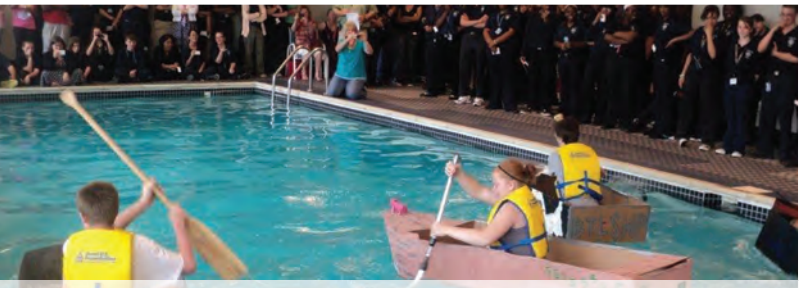
GLDD in late 2013 was awarded an $89 million contract by Decatur, Ill. to dredge Lake Decatur from late 2014 through 2019. "During 2014, we will be working throughout the year on the PortMiami deepening project," Berger said. And the company will continue post-Sandy coastal protection work this year.

WRRDA Likely To Be Passed By Congress Soon

According to Holliday of Dredging Contractors of America, Jonathan Berger and others, a new Water Resources Reform and Development Act (WRRDA) will be passed by Congress by this summer. Senate and House versions of the bill were being reconciled in May and it is possible that the bill could come out of Committee as this edition of ***MarineNews*** goes to press. The act fosters river and harbor improvements and addresses structural, navigational and environmental aspects of water – including flood protection and hydrology. USACE has administered most of the requirements of the nation's past ten WRDAs, dating back to 1974. The last WRDA bill was passed in 2007, and before that, WRDA 2000 consolidated the country's port-deepening projects. At mid-year 2014 and discounting the promise of a new and improved WRRDA bill, domestic dredging requirements remain high and not fully satisfied, spend dollars are up and production – in comparison with historical cubic yards moved in the past – is down. The good news is that domestic dredgers should remain busy. How those projects will be funded is another question altogether. And, that will make all the difference.

Dredging at the Port of Baltimore is conducted by the Maryland Port Administration and the U.S. Army Corps of Engineers.

Courtesy Maryland Sea Grant.



PRIMARY AND SECONDARY MARITIME SCHOOLS:

Education for the next generation; Employment for life. A new source of talent emerges for maritime stakeholders everywhere.

By Eric Haun

Primary and secondary maritime schools are sprouting up across the country, inspiring K-12 students to learn about the exciting, yet sometimes obscured domestic waterfront. The goals of these maritime school programs are many and multifaceted, but at the core they motivate and engage students by bringing something new and exciting to the classroom while giving teachers an effective means for capturing the attention of their classes. And as new student audiences are being exposed — earlier, rather than later — to the maritime industry and potential career paths that could lie ahead, it's not only students and educators who stand to reap the rewards of these programs.

The domestic maritime industry, spanning blue and brown water mariners, dock workers, operations, oil & gas and a dozen other sectors is starving for fresh, young talent to meet a shortage of qualified workers, especially in entry level and crew positions. What better way to work toward filling these gaps than to educate the nations' youth on the importance of its culture-rich maritime heritage?

The beginnings of maritime education

Formal maritime training in the United States began to take shape with the opening of the U.S. Naval Academy and the first civil maritime school in New York City in the mid 1800s, answering the call for more advanced training to meet the demands of evolving ships and marine technology. Maritime education received another boost with a resurgence of marine activity following World War II. In 1946, the War Shipping Administration transferred former Liberty Ship SS John Brown to the New York City Board of Education to serve as part of the Metropolitan Vocational High School, providing high school students with deck, engine and stewards training until a declining interest in vocational education and shipping opportunities forced its closure in 1982.

The Marine Engineers Beneficial Association (MEBA), open from 1966-1986, offered a three-year program designed to train high school graduates to become licensed third assistant engineers in the Southern Hotel in Balti-

more through formal classroom education and onboard trainee apprenticeships.

Still in operation today, the Seaman's International Union (SIU) created the Paul Hall Center for Maritime Training in Piney Point, Md. in 1967 with a center that conducts professional and vocational training for unlicensed seaman. The school has put more than 21,000 high school graduates between the ages of 18-30 through an apprentice program consisting of classroom and shipboard training to qualify as entry level seamen in the deck, engine and stewards department.

Renewed focus

A major turning point for maritime education occurred in 2001 when the Maritime Administration (MARAD) and U.S. Coast Guard (USCG), recognizing a shortage of mariners, hosted a conference at the U.S. Merchant Marine Academy called "Maritime Careers Creating an Action Plan for Recruiting and Retaining American Mariners." Prominently among the topics covered at the conference was "Public Education and Awareness of the Maritime Industry," which sparked a follow-up meeting on implementing action plans in 2002.

The movement gained momentum and focus in the years followed. Helping to lead the charge was Capt. Art Sulzer (USN Ret.). If not the founding father of modern maritime primary/secondary education in America, he is still by far its biggest champion. His involvement in maritime secondary education dates back to the early 2000's when he was commissioned to share his maritime insight with a newly forming charter school in Philadelphia. Well known in maritime circles, Sulzer currently serves as a Presidential appointee on the St. Lawrence Seaway Board. Sulzer has done a lot of things, but his education push is one of his most high profile efforts. Sulzer, who holds an Ed.D. from the University of Pennsylvania with a focus on primary and secondary maritime education, testified to congress in on the subject in 2008.

Also in 2008, the Ship Operators Cooperative Program (SOCP) sponsored a two-day event titled "Maritime and Intermodal Education for Primary and Secondary Schools in America - On Board to a Future Career." Gathering participants spanning the industry, from government agencies and existing maritime middle and high schools, to private companies and individuals, all came together with the shared goal of advancing maritime awareness in the United States and introducing K-12 students to what the maritime industry has to offer. In his keynote address, Rep. Elijah Cummings (D.-Md.), then Chairman of the Committee on Coast Guard and Maritime Education, highlighted the national problem of low graduation rates at city schools across the country (50 percent of city high school students do not graduate), offering maritime education as an opportunity to expose students to something interesting to focus on.

From the conference spawned the SOCP's Maritime Education and Workforce Development Committee to continue initiatives addressed at the conference, and from there launched the Maritime for Primary and Secondary Education Coalition (MPSEC) to foster and promote maritime education in urban schools by working with a network of local, state and federal agencies, private employers, maritime associations, higher education institutions and other interested partners.

To date the MPSEC has led a number of widespread initiatives promoting maritime education, including the development of a national model curriculum for grades 5-12, a national maritime/transportation introductory course introducing 9th graders to related careers ashore and afloat, a 10th grade course on entry level maritime skills, an "Adopt a Maritime School" program and a project to expand e-learning in maritime schools, to name a few.

These initiatives are working, Sulzer said, but the proof is also in the numbers: "In 2001 there was one maritime high school and two marine high schools, and in 2008 there were maybe a dozen. Now in 2014, there are over 40 marine, maritime and transportation type high schools around the country."

About the schools

The existing maritime schools are mostly found near major U.S. ports along the Atlantic and Pacific Coasts, as well as on the Great Lakes, in cities such as Philadelphia, New York, Toledo , San Diego, Houston, Baltimore, Palm Beach and Seattle. The schools can be separated into two main categories: marine, which focuses on oceanology, biology and marine sciences; and maritime, which deals with subjects, training and skills required to work in the maritime sector, whether it be as a crew member at sea or shoreside such as in a marine, shipyard or port facility.

The schools teach general subjects (math, science, history, etc.) "marinated" with maritime themes, Sulzer said. Each school meets required state common core requirements, but with a maritime flavor. This is accomplished in a number of ways. Sulzer lists several program styles and types to categorize primary and secondary schools used to present marine and maritime materials to the students.

Many marine and maritime schools follow one or more

of the program styles or types. Sulzer explained that grades K-8 usually follow a more integrated-type program, where 9-12 get more specific into industry related materials.

The New York Harbor School, for example, has all the same core academic programs as and standard public high school but on top of that has a four year scope and sequence of Career and Technical Education Coursework which gives students an introductory course in 9th grade before steering them toward choosing one of several college and industry approved Career and Technical Education Coursework routes: aquaculture, marine biology research, marine systems technology, ocean engineering, scientific diving and vessel operations."That allows [students] to focus on something they can be good at, even if they haven't been good in traditional academic subjects," said the school's cofounder Murray Fisher.

"We do a good job in helping kids find ways to be successful," Fisher added, "Finding, multiple ways to be successful is important." The New York Harbor School offers safe, engaging and fun opportunities that are often hard to find for inner city kids, Fisher explained.

The Maritime Academy Charter High School in Philadelphia (Pennsylvania's only maritime-specific charter school), with Sulzer as one of its founding board members, started as a grade 5-8 school, but has since expanded to a 4-12 school with 820 students and ambitions to expand to K-12. "We teach the maritime industry. Of course our focus is on academics, but we intertwine the state's common core standard curriculum with maritime themes," said Ed Poznek, the school's Principal and CEO.

"People come to our school because we offer strong academics . . . students and their families come to us because of who we are and the reputation that we carry," Poznek said. Its reputation is well deserved. The Maritime Academy has a 98 percent graduation rate, nearly double the national average for urban schools. Poznek credits the maritime factor as a chief driving force behind the school's success. "Our students really take pride in the fact that they are called cadets, especially our 4th, 5th and 6th grade students. It gives them a sense of pride unlike other schools," Poznek explained. "The standards and expectations of a cadet are much higher, and we emphasize that our students do their best and give 100 percent."

Another maritime school, the Maritime Academy of Toledo, initially embarked with the ambition to bring inner city kids and their families to the water through a focus on recreational boating, eventually evolving (with Sulzer's help) to a maritime-centered program by the time it opened its doors in 2006. It too has benefited greatly from maritime themes, and has seen enrollment increase every year.

To achieve success, educators and administrators at maritime schools have found creative ways to integrate maritime themes. Students in Toledo are on the school's boat every day of the week for courses in art, math, music, geography, etc. The school offers a diverse range of maritime courses, covering everything from welding and ecosystems, to fishing to culinary.

"Everything you can imagine that connects curriculum content to the water is what my teachers are doing," said Renee Marazon, founder and Superintendent of The Mar-

The program style deals with the manner in which the material is presented:

Integrated	infuses maritime history, themes and terms into all state required courses
Vocational	prepares students to obtain proper USCG documentation prior to graduation to work for marine or transportation employers
Apprentice	similar to vocational, with added period of time working at sea or ashore with a maritime employer
Academic	most similar to traditional school programs, but with additional electives in maritime areas such as navigation, engineering or seamanship

The programs can then be broken down into four types:

Genral Maritime Studies	provides a broad overview of the various marine, maritime and intermodal careers; designed to spark students' interest and prepare for entry to a specialized academic program upon graduation at a community college, vocational school or maritime college
Industry Specific	a particular industry i.e. fishing, marina, or tug-barge operator may become involved with a school and sponsor/conduct specific training required for employment with that industry
Company specific	a particular company may set up an apprentice program in the region or with a specific high school to qualify students for entry to an apprentice program after graduation or for employment with that company
Regional	a program may be set up by a local university, state or federal agency that offers material to all regional schools to use, providing information about maritime history, the environment and transportation

itime Academy of Toledo. For Cinco de Mayo, students in Toledo's school used simulators to navigate waters in Mexico. "It's so much fun to see these kids light up when they're learning and exploring – and enjoying learning. The kids are learning to love to learn."

Poznek said the Philadelphia school takes frequent maritime-themed fieldtrips, such as its most recent visit to Penn Terminal, where students were given the opportunity to learn about what the terminal does and how it serves the maritime industry. "It's exciting for a group of students to stand in front of a ship and learn about the operations that occur." The school has also taken its students aboard bulk carriers, tugboats and tall ships.

Maritime educators advocate that infusing maritime themes in primary and secondary schools helps to hold students attention while generating, enthusiasm, excitement, camaraderie and discipline. That positivity seems poised to transcend to the commercial sector.

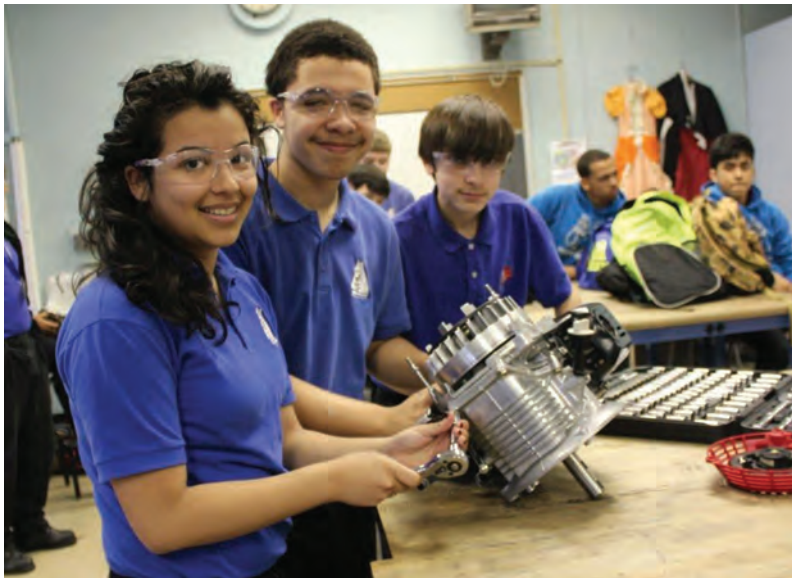
The next step – industry cooperation

For many maritime schools, the next step is to connect students with potential employers, or as Sulzer describes it, "pass the baton." Graduates from these programs have received an introduction to the maritime world and are well positioned to take up jobs within a sector that so desperately needs new workers. "The first thing is we get kids to graduate. The second is we help develop their academic standards," Sulzer said. "The third thing, which is where we are now, is we need to take these young people and hand them off, whether it's to an employer, a maritime academy, a union trade school or two-year maritime college. We need to hand them off to make sure they don't fall through the cracks."

Poznek said the Maritime Academy is very much tied into Philadelphia's local maritime community, with connections to the Port of Philadelphia and most of the city's maritime organizations. "As a result, Poznek said, "the maritime industry knows about our school; they know about our students."

Next, the school plans to expand internship and externship possibilities "for students to actually go out into the business community and interact with the maritime businesses, and of course learn more about maritime opportunities," Poznek said, adding that the school has recently hired a new guidance counselor to help students explore potential maritime careers.

According to Fisher, the New York Harbor School essentially prepares its 450 9th-12th grade students for positions in the marine and maritime field: "It's introducing



Maritime Academy offers the only elective class in small engine repair which is unique to public school education in Philadelphia (Photo courtesy Maritime Charter High School in Philadelphia)

Maritime Academy offers the only elective class in small engine repair which is unique to public school education in Philadelphia (Photo courtesy Maritime Charter High School in Philadelphia)

Art Sulzer is a leading advocate for primary and secondary maritime education in the United States.

Mariner I getting underway for research and education excursion on the Maumee River. (Photo courtesy Maritime Academy of Toledo)

our kids to job markets that are very underrepresented by women and minorities while training them for an entry level job in that career." After completing required internships within the local community, students have earned a technical credential and are prepared for entry level jobs upon graduation, though Fisher said most of his students seek college educations first.

Similarly, as part of its strong working relationship with the maritime industry, the Toledo academy holds a number career day events throughout the year to present students to employers. Students' senior projects align them with an industry within the community, and the school is currently preparing other internship and apprenticeship programs. Maritime companies want quality employees, and these schools are working to provide that through industry communication and cooperation. "When you begin to network and interface with the corporations that way, then they're interested in your graduates," Marazon said, adding that companies even call the school looking for employee candidates. Companies such as Interlake Steamship and Crowley are already aboard.

Cole Cosgrove, vice president of marine operations for liner services at Crowley, believes there is much to be gained from these types of maritime education programs: "The main thing is getting the maritime training and careers out in front of younger folks early on so that they know that that's an option that they have, especially when a lot of those skills can be developed outside of a formal college education," he said. "[The schools provide] a great opportunity to infuse maritime topics into the standard ABCs of learning."

"We encourage our labor partners to take a look at the schools and see if there are any viable candidates to bring into apprenticeship programs," Cosgrove said. "The maritime industry is all about the people. The ships, the tugs and barges, the pilot boats and the passenger boats. Nothing moves unless you have really good qualified people, and it's really important to get those folks into the industry and get experience when they're young."

As existing maritime schools evolve and new ones emerge, more industry partners will look to get involved. Possibilities are mounting. Cosgrove said, "We're just seeing the first graduates from the schools now, so it will be interesting to see if the earlier exposure to maritime turns into additional people that are interested in coming into the field."

According to Sulzer the next big step involves spreading the word. Maritime schools help to raise awareness about an industry that is too often overlooked. Now it's time for leaders across the sector to pitch in. The maritime industry has so much to offer a new generation, and vice versa. As the industry cries out for new workers, maritime schools are proof that young people are ready to heed the call.

SALVAGE *for the Greater Good*

Preserving pristine Coral Reefs in a remote location is no small task, but also of big importance. Global Diving & Salvage shows how it is done.

By Kerry Walsh

On June 19, 1991 officials with the National Oceanic and Atmospheric Administration were notified of a 121 foot long fishing vessel shipwrecked and hard aground in the coral reef on the Western Terrace of Palmyra Atoll. The wreck of the Taiwanese long line fishing vessel HUI FENG #1 lay deep into the reef in 20 feet of water, about one half mile to the Northwest of the open waters of the navigation channel into the sheltered safe harbor of West Lagoon.

Lying some 1,000 miles south of Honolulu, Palmyra Atoll is a national monument and wildlife refuge, cooperatively managed by the US Fish & Wildlife Service (USFWS) and The Nature Conservancy who work together to protect the delicate environments unique to Palmyra. The atoll encompasses some of the last remaining near-pristine reef environment on earth, boasting an intact marine predator-dominated marine ecosystem where over 176 species of hard coral and 418 species of reef fish coexist and thrive. The slow and insidious destruction being wrought by the HUI FENG #1, and the other wrecks on Palmyra and Kingman Reef, a non-vegetated wildlife refuge reef located 35 miles to the northwest of Palmyra, were identified and plans were put in place to fix the problem.

At Palmyra, the problem lay in a native marine organism called corallimorph that was effectively smothering the corals surrounding the wreck. At Kingman the problem was not corallimorph, but an invasive form of algae feeding off nutrients released from the dissolving wreckage of a burned fishing vessel. In September of 2012 the USFWS initiated the process to contract for removal of the HUI FENG #1, the unnamed fishing vessel at Kingman Reef and the remains of a modular pontoon barge on Palmyra less than affectionately known as “Rust Island”. Eventually, Global Diving & Salvage was called upon to address the wrecks.

Salvage Teamwork

Early in the process, Global Diving & Salvage, Inc. reached out to Curtin Maritime, Inc., a frequent partner in unique and challenging projects. The project at Palmyra and Kingman would prove to be another excellent opportunity to collaborate. Several factors were fundamental in the planning process. Of prime importance was the safety of personnel and equipment. This was followed closely by mitigating the potential of damage to the extremely delicate living coral and reef structure, which would require significant industrial equipment on location. There was also the risk that the vessels contained unknown quantities of pollutants trapped within the hulls. Given the nearly half mile to open water, mobilizing a large crane or vessel to the HUI FENG was impossible.

Surveys, Set Up & Special Situations

During the initial survey a “channel” through the coral had been identified. Viewed from aerial images this channel was invisible and could only be identified by swimmers as the vertical clearance to the coral was as much a limiting factor as was the horizontal clearance to the stony coral heads at the water’s surface. Knowing firsthand the constraints of the “channel”, a small and transportable work platform was engineered and special shallow draft transport power scows were designed that would allow safe transit between the work sites and open water.

To provide a safe and stable work platform capable of working in a wide range of weather and tide conditions a jackup platform formed of Flexifloats was designed. The Flexifloats used were 40 feet long and 10 feet wide. When connected together they formed a 40’ x 20’ barge. 4 jackup legs were used to raise the barge clear of the water above the wreck.

Coral Transplants - Global Diving's coral restoration specialist carefully relocates live corals from the HUI FENG #1.

The flat deck scows were 24 feet long and 10 feet wide and fabricated from lightweight aluminum with a raised edge coaming around the perimeter that provided 300 gallons of containment volume in case any residual liquids were contained within the recovered material from the HUI FENG. The scows were designed to be highly maneuverable while carrying 10 tons of material while only drafting 2 feet of water.

The Curtin Maritime tug SARAH C, derrick and materials barges would be moored in the open water of West lagoon and would serve as the base of operations throughout the project. Both the tug and crane barge are EPA Tier lll environmentally compliant. The derrick is ABS man rated with a complete galley and accommodations for the crew.

All diving and specialized salvage equipment was assembled and shipped from Global's headquarters in Seattle to the Curtin Maritime facility in Long Beach, California where the gear was loaded onto the barge. Palmyra is one of the most remote locations on Earth and the impact of a forgotten tool or spare part could spell disaster as air transport from Honolulu to the Atoll comes with a $50,000 price tag. Transport by sea meant a minimum of 8 days delay for parts to arrive. Reliability and redundancy were crucial elements in the planning and execution of the project.

The salvage flotilla sailed from Long Beach, CA for Honolulu, HI on September 17 with a planned voyage of 20 days en route. Upon arrival in Hawaii, the flotilla underwent final mobilization of equipment, groceries and fuel. In this case and in an effort to maintain the pristine environment in the Refuge every vessel bound for Palmyra must undergo a thorough hull cleaning to remove marine growth and mitigate the potential for invasive marine organisms. Vessels are also subject to an extensive, inspection to certify them free of vermin. Rats on the atoll were a big problem in the past; severely impacting the flora and fauna on Palmyra. Eradicating the problem required seven years of research and planning along with extensive and costly measures.

Salvage in Action

Upon arrival Palmyra on October 29 where they were met by the research staff and the balance of the salvage crew who had been transported to the island by chartered aircraft. The 14 person team composed of divers, riggers, equipment operators and a coral reconstruction expert, along with two USFWS Refuge Managers, immediately commenced work on the recovery project, which, with the exception of shortened workdays on November 28th and

December 25th, would continue unabated, 12 hours per day, for 79 days.

With winter weather in the form of heavy wind and sea conditions impacting the area of Palmyra Atoll and Kingman Reef the work plan was quickly adjusted to fit the conditions on location. The original plan called for the work at Kingman Reef to be completed as the first phase of the recovery project. The decision was made to commence work immediately at Palmyra and await more favorable conditions at Kingman.

The channel between the HUI FENG and open water was once more surveyed and marked with temporary floats. Vessel operators trained in a deepwater mock-up of the gauntlet-style transit path with hairpin turns through shallow water coral heads in order to perfect operations in Palmyra's unpredictable conditions. The Flexifloat barges and jack up legs were carefully assembled, moved into position, and jacked up into position adjacent to the wreck.

Working with exothermic underwater cutting systems the Global dive team dissected the HUI FENG into sections which were lifted from the sea by the crane on the jack up platform and loaded onto the power scows for transport to the barges waiting in open water. Almost immediately, it became apparent that the HUI FENG had been heavily modified and was of unusual construction with odd layers of steel interspersed with concrete, foam, wood, and steel beams. The crew also found remnants of fuel and engine oils trapped in spaces within the wreck.

As work wound down on the Palmyra wrecks, the crew then turned their focus on Kingman Reef where the work consisted of recovering the burned remains of a fishing vessel aground in the surf and the scattered pieces of the vessel on shore and underwater on the reef flat and within the interior lagoon.

Faced with a marginal weather forecast the tug SARAH C sailed to Kingman Reef on January 4 to commence the recovery. Sea conditions on site were not favorable for this yet the crew, working in dangerous surf conditions for this and subsequent Kingman operations, were able to recover, by hand, an estimated 44,000 pounds of debris from the reef.

The project involved the removal and disposal of nearly a million pounds of debris consisting of large piles of rusted steel, fiberglass, wood, concrete and other materials. Susan White, the USFWS's project leader for the removal effort, said the debris was "the equivalent of 67 large elephants or 31 city buses and was removed to protect some of the world's most pristine coral reefs."

In total, 618,350 pounds of debris and 605 gallons of hydrocarbons were recovered from the HUI FENG, Rust Island resulted in the recovery of 278,000 pounds of iron and debris - a substantial amount of which was picked up by hand using buckets and totes - and the work at Kingman Reef removed an estimated 44,000 pounds of iron, teak and fiberglass from the reef.

With the shipwrecks removed the recovery work at Palmyra Atoll and Kingman Reef National Wildlife Refuges has already begun, as the crews of the US Fish and Wildlife Service and their volunteers work to remove the nearly 740 acre infestation of corallimorph from the reef at Palmyra and the invasive algae attacking the reefs at Kingman.

The shipwreck removal operation, an unusual project by any yardstick, was declared a success by all involved. Working in the remote location with limited resources and the hostile environment of the reef for 79 days without incident, the salvage team combined to cooperate and overcome the enormous challenges the project delivered. Remarkably, the salvage team left the reef in a better condition than they found it. That's not always the case. But then again, this wasn't just any job, either.

Kerry Walsh *serves Global as a Salvage Master and Marine Casualty Project Manager. He has more than 30 years experience in the maritime industry centered on broad spectrum marine salvage and commercial diving operations. Notable projects include the deep water tank truck recovery operation conducted in Robson Bight, the oil recovery from the Princess Kathleen, the deep water assessment of the Montebello and the recovery of the F/V Deep Sea, foundered in the sensitive waters of Whidbey Island, Washington.*

ContainerTug 600S

Transport your tug as a container!

Ben3D BV Naval Architecture, in collaboration with Oonincx Shipbuilding BV, has introduced the innovative ContainerTug 600S. This month's *Boat of the Month* entry is a strong, compact Dutch built workboat with a remarkable feature: it can be transported as a standard 20 foot container. The 1200 kg bollard pull, its relatively large deck area and good maneuverability make the ContainerTug an all-round pull, push and support vessel. By truck, train or ship, the ContainerTug follows you wherever the work needs to be done – worldwide.

The idea is as simple as it is innovative and responds to the desire of companies to increase their area of operation in a cost-efficient manner. Ben de Vries, director of BEN3D explains: "Transportability is becoming increasingly important in a market where companies are forced to be flexible. Despite the tight constraints of the (ISO) container sizes, we succeeded in developing a versatile workboat."

The sizes of this all-round work boat are identical to that of a standard 20-foot container. The ContainerTug features integrated container fittings at all corners and is therefore stackable. The lightweight top of the wheelhouse can easily be removed, which keeps its depth within container proportions and additionally serves the purpose of reducing the vessel's airdraft significantly. The hull is solidly constructed out of Grade 'A' steel and can, if desired, be delivered with a class certificate. Removable fenders are also optional.

The ContainerTug 600S is equipped with a Volvo D5A TA engine that delivers 89 kW at 1900 rpm. In addition, the Doosan L066TI has been added to the standard range of ContainerTug. This powerful mechanical engine delivers 180 [HP] @ 2200 rpm. Its maximum speed is 6 knots. During towing operations the container fittings on the aft deck can be removed easily, so that the angle of the tow line will not be unduly restricted. The bow shape is ideal for pushing. The ship can be supplied with removable twist-lock bollards which can be fixed easily to the front container fittings. The keel of the first ContainerTug 600 was laid at the OSO yard in Werkendam, the Netherlands in mid-May.

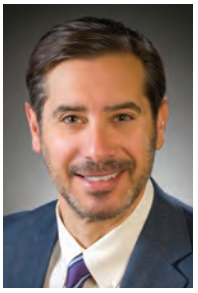
The hull of the ContainerTug 600S is also available as a building kit. This building kit contains all steel & aluminum parts, fully cut, which allows for building the ContainerTug locally, with support of BEN3D. If desired, the hull structure can include specific adjustments, for example for the preferred engine to install. Besides this, the scope of delivery can be extended according to specific needs.

www.containertug.com or www.ben3d.nl

Container Tug 600S at a glance ...

Length over all: 6.06 m	Depth: 3.55 m (wheelhouse fitted)
Breadth over all: 2.44 m	Draft: 1.0 m
Depth: 2.59 m (during transportation)	Dry Weight: 6.8 tons


Servidio & Beavers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MERPAC Appoints MPT's Beavers as Vice Chair

Amy Beavers, VP of Regulatory Compliance at Maritime Professional Training has been appointed by Rear Admiral Joseph Servidio to the position of Vice Chair of the Merchant Marine Personnel Advisory Committee (MERPAC), a committee that advises the Secretary of the Department of Homeland Security (DHS) on matters relating to the training, qualification, licensing, certification, and fitness of seamen in the merchant marine in both national and international service. Ms. Beavers was appointed to MERPAC on February 15, 2013.

U.S. DOT Secretary Names Friedman to MTSNAC

U.S. Transportation Secretary Anthony Foxx recently appointed Port of Cleveland President and CEO Will Friedman to the Marine Transportation System National Advisory Council (MTSNAC). Established in 2010, MTSNAC is comprised of leaders from commercial transportation firms, trade associations, state and local public entities, labor organizations, academics, and environmental groups that advise the Secretary on policies to ensure that the U.S. Marine Transportation System is capable of responding to projected trade increases.

Horizon Marine, Inc. Continues to Grow

Horizon Marine, Inc. recently hired Kelsey Obenour. Kelsey graduated from Valparaiso University with a B.S. in Meteorology and Geography and a minor in Mathematics. Following her undergraduate studies, Kelsey received her M.S. in physical oceanography from the University of Rhode Island – Graduate School of Oceanography. For Kelsey's thesis, she used 30 years of sea surface temperature (SST) AVHRR Pathfinder satellite data to analyze ocean fronts on global and regional scales to observe decadal and global climate trends since 1982.

Torrech Named NMEC Chairman

Michael S. Torrech, CEO of American Maritime Holdings has been named Chairman of the National Maritime Education Council (NMEC). He succeeds John Lotshaw of Huntington-Ingalls. Torrech, a founder of the NMEC, will lead the organization's strategic development of a national standardized maritime workforce program that addresses the critical issues facing the industry. Torrech also holds Board positions with the Shipbuilders Council of America and Virginia Ship Repair Association.

Glander International Appoints New Broker

Glander International Bunkering announced that Justin Sander has joined their Florida office. With years of bunkering experience in the US, Justin has an extensive knowledge of fuel supply in the Caribbean and the Americas region. Justin is also trilingual and this knowledge will be very beneficial to his clients dealing in South America.

Morton Bouchard III Honored by SUNY Maritime

Bouchard Transportation Co., Inc., President and CEO Morton S. Bouchard III was honored at Maritime College's Annual Admiral's Scholarship Dinner for his continued support of the College. In recognition of the occasion, Mr. Bouchard announced plans for the construction of an on-campus dormitory to house visitors to the Bouchard Transportation Company, Inc., Tug & Barge Simulation Center on the Throggs Neck campus. The simulation facility was funded by a gift provided by Bouchard and will be available to SUNY Maritime College students as part of their program of study, and to outside tug and barge companies for employee training.

Mill Log Marine Names Key Account Executive

Mill Log Marine has named Bob Shamek as a Key Account Executive for the Western Washington State and Alaska Territories. Bob will operate out of Kent, WA and will focus on naval architects, boat builders, engine distributors, and large end-user fleets. Bob previously worked for Cummins Northwest for 13 years, NC Machinery for 4 years, and Nordic Tug for the past 14 years.

Pickles Joins KVH as Head of Business Development

KVH Industries, Inc. has named Anneley Pickles as Head of Business Development for the Crewtoo social


Sander


Bouchard


Shamek


Pickles

network, an online network dedicated to seafarers. Ms. Pickles, who is based in Liverpool, U.K., has worked in the maritime industry for nearly 20 years as a sales executive with many firms, including Lloyd's of London. Pickles holds a Bachelor of Arts degree in Public Administration and an Associate's degree in Business & Finance.

Coast Guard daughter awarded for Military Child of the Year

Juanita Collins was presented with the 2014 Coast Guard Military Child of the Year award at the sixth annual Operation Homefront gala at the Crystal Gateway Marriott in Arlington, VA., April 10. In addition to the trip to the nation's capital, recipients are awarded a laptop and a $5,000 cash prize. Award recipients are chosen by a committee including active duty and retired military personnel, spouses of senior military leaders, veteran service organization leadership, teachers and community members. Currently a senior, Juanita has been accepted to the University of Tampa.

Diamond Petroleum Names Roosevelt as Technical Sales Representative

Diamond Petroleum Ventures LLC has appointed Em Roosevelt as technical sales representative. Roosevelt is responsible for direct sales and account management and will work toward expanding the company's markets in the offshore oil and gas industry. Roosevelt joined Diamond Petroleum Ventures in December 2013 and has more than 30 years of experience in the oil and gas industry. Roosevelt graduated with a degree in agribusiness management from Texas A&M University.

Valve Automation & Controls Promotes Longtime Employee

Valve Automation & Controls (VAC) announced the promotion of longtime employee, Nancy Gonzales, to Branch Manager of the Chula Vista location. Gonzales began her career at VAC in 1993 and celebrated 20 years with the company in 2013. She currently serves one of VAC's largest accounts, NASSCO, as Project Manager.

OTC Recognizes DNV GL's Dr. Carl Arne Carlsen

Carl Arne Carlsen has been recognized at OTC with a Distinguished Service Award. The award is in recognition of his "outstanding, significant and unique achievements, and extensive contributions" to the offshore industry, and is presented at the Annual OTC Dinner. Carlsen's career highlights coincide with major developments in the offshore industry and he has helped shape important policy changes.

EBDG Congratulates Newest PMPs Turner & Wood

Elliott Bay Design Group (EBDG) recently announced that David Turner and Mike Wood have earned the Project Management Professional (PMP) designation. Turner joined Elliott Bay Design Group in August 2010 bringing over 12 years of naval architecture experience to his role. He holds a BS in Mechanical Engineering. Wood joined Elliott Bay Design Group in May 2012 and has more than 13 years of experience in shipyard production


Jim Oberstar

Former Rep. Jim Oberstar, the longest-serving congressman in Minnesota history, died unexpectedly last month at the age of 79. Oberstar represented Minnesota's 8th Congressional District for 18 terms, from 1975 to 2011. Oberstar brought millions of dollars to the state as chair of the powerful House Transportation Committee, but was perhaps best known for his attention to issues involving transportation and infrastructure. In particular, maritime stakeholders everywhere held him in high regard for his efforts on behalf of inland and domestic maritime causes; so much so that a Great Lakes freighter was named after him in 2011. President Barack Obama said that Oberstar dedicated his career to "improving America's infrastructure, creating opportunity for hardworking Minnesotans, and building a strong economy for future generations of Americans."


Collins


Roosevelt


Gonzales


Carlsen

engineering and design. Wood earned his Bachelor's of Science Degree in Naval Architecture and Marine Engineering from the University of New Orleans.

CMR Group Drives Growth with Senior Appointments

Marine engine controls, wiring harnesses and electrical management systems' manufacturer CMR Group is gearing up for growth with several senior management appointments across its global operations. In the U.S., CMR US has boosted its operations in Leetsdale, PA with the appointment of a new production manager. Larry Alway will be working with the production team, as well as the continual improvement, quality and materials group, as the business ramps up manufacturing this year to meet strong demand.

ABS Reports Continued Successes in 2013

Global maritime classification society ABS hosted its Annual Meeting in New York on 29 April 2014. ABS Chairman and CEO Christopher J. Wiernicki said, "ABS had another strong performance year and achieved several milestones during 2013 as the global economy began to strengthen." In 2013 the ABS-classed fleet expanded to 205.6 million gross tons (gt) and also maintained a leading position in the global orderbook closing out the year with 38.8 million gt contracted to class with ABS, 22 per-


Turner


Wood


Alway


Wiernicki

cent of all vessels on order. "Through sound technology investment, a focus on best-in-class service and a commitment to the mission of ABS, the organization was able to continue its growth across all market segments," said Wiernicki.

NOAA certifies more printing agents for paper nautical charts

The availability of paper "print-on-demand" nautical charts continues to expand, as NOAA's Office of Coast Survey added three more printing companies to its roster of certified agents for paper charts. This brings the total to ten companies authorized to sell NOAA nautical charts that are printed when the customer orders them. Iver C. Weilbach & Co. A/S, Granville Printing, and East End Blueprint have joined previously announced printing agents East View Geospatial, Frugal Navigator, Marine Press, OceanGrafix, Paradise Cay Publications, The Map Shop, and Williams & Heintz Map Corporation.

DNV GL boosts Role of Simulators in DP Training

DNV GL has introduced a new recommended practice for the training of dynamic positioning (DP) operators. The new standard is based on the latest training and certification principles and defines the role that simulators can play in giving candidates better and more efficient training.

Given the differing duration and frequency of DP operations, the recommended practice (RP) does not define a universal sea-time requirement expressed in days. Instead, learning goals are used to define the training experiences required. Simulator training can reduce sea time requirements by up to 50 percent. Major players in the offshore industry collaborated on the development of the new RP which covers competence development, sea-time / onboard competence building, competence assessment, certification and re-certification.

Crawler Crane Dedication Ceremony

International Ship Repair & Marine Services, Inc. (ISR), recipient of a $980,260 federal grant from the U. S. Maritime Administration, recently celebrated the award with an event in Tampa. The grant has helped to fund a new, American made, 275-Ton Manitowoc crawler crane. This new crane has strengthened the company's overall productivity. Co-Keynote Speakers at the recent dedication ceremony included Congresswoman Kathy Castor, Senator Bill Nelson, and George H. Lorton, International Ship Repair CEO and President.

Wheelabrator Celebrates One Million Safety Hours

Wheelabrator Group reached a major milestone during the first quarter of 2014 with 1,000,000 hours without a lost time incident. Over 200 Wheelabrator employees and guests marked this special event during a safety luncheon at their LaGrange facility, March 13th. Featured speakers included, among others, Robert E. Joyce, President & CEO of Norican Group (parent company of Wheelabrator and DISA).

Lakes' Ice Halves Ore Trade in April

Heavy ice formations on the Great Lakes continued to slash iron ore shipments in April. Shipments totaled only 2.7 million tons, a decrease of 52 percent compared to a year ago. Loadings slumped even more – 53.3 percent – when compared to the month's long-term average. Lake Superior's ice was so challenging that the U.S. and Canadian Coast Guards had to convoy freighters the entire month. It was not until May 2 that the U.S. Coast Guard allowed vessels to proceed across Lake Superior unescorted. The ice field off Marquette, Michigan, barred lakers from loading at the port until April 13. Through April, the Lakes iron ore trade stands at 6.2 million tons, a decrease of nearly 43 percent compared to both a year ago and the long-term average for the January-April timeframe. The Coast Guard concluded icebreaking operations on the lower Great Lakes, Monday, more than four months after it started, Dec. 15, 2013. This year's combined icebreaking effort lasted significantly longer than last year's, which ran from Jan. 3 through March 23, 2013.

DNV

ISR

Joyce

U.S. Coast Guard Publishes Interim Voluntary Guidelines for MODUs

The Federal Register last month published the Coast Guard's notice of recommended interim voluntary guidelines concerning fire and explosion analyses for mobile offshore drilling units (MODUs) and manned fixed and floating offshore facilities engaged in activities on the U.S. outer continental shelf. This notice is part of the Coast Guard's continuing response to the explosion, fire and sinking of the MODU Deepwater Horizon in the Gulf of Mexico April 20, 2010. Access the notice at https://www.federalregister.gov/articles/2014/05/02/2014-10010/outer-continental-shelf-units-fire-and-explosion-analyses.

Avista Capital Partners and SEACOR Tankers Form Jones Act Vessel Joint Venture

Avista Capital Partners has announced an investment in a newly formed joint venture with SEACOR Tankers Inc. Under the terms of the joint venture, ACP III Tankers LLC, a wholly owned entity of Avista, will fund a portion of the equity required for the design and construction of three 50,000 deadweight ton product carriers, each with 330,000 barrel cargo capacity, which SEACOR has contracted to build at General Dynamic's National Steel and Shipbuilding Company shipyard in San Diego, California, with vessel delivery dates of mid 2016, late 2016 and early 2017.

Affordable Luxury When You're Anchored in Boston

The antiquity and charm of the original Mariners House has been updated to include all the modern amenities, featuring completely renovated private rooms, private baths, elegant common rooms and all the in-room necessities of modern life.

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Air Hoists for Safe & Efficient Lifting

The range of modern air operated hoists manufactured by J D Neuhaus offer safe and efficient lifting and handling facilities for a wide range of general engineering and industrial applications. The Profi TI hoist range has been upgraded to combine quieter operation, with faster lifting/lowering speeds while being more energy efficient as well as incorporating some lighter and more compact build qualities.

www.jdngroup.com

Applied Membranes' Line of Watermakers

Applied Membranes, Inc. manufactures reverse osmosis systems, membranes and equipment. Backed by a large manufacturing facility, serving the entire range of commercial applications, and with installations in over 100 countries worldwide, Applied Membranes stocks a substantial inventory of watermaker parts, consumables, yacht-sized media filters, UV sterilizers, to cleaning, storage and mineralization cartridge filters and accessories.

www.appliedmembranes.com

Marine Panel PC with Intel Ivy Bridge Celeron CPU Processor

Moxa´s MPC-2240 is a sleek, modular, 24 inch flat marine panel computer for marine e-navigation systems. Powered by an Intel Ivy Bridge CPU, the MPC-2240 panel computers are built to handle the heavy computing demands of ECDIS and radar systems. The MPC-2240 is intended to help reduce deployment costs and overall time-to-market by allowing convenient and rapid integration into a wide variety of systems.

www.moxa.com

Laborde Repower Provides Long Tug Endurance

Smith Maritime depends on Laborde. For its third repower with Smith, Laborde supplied three Mitsubishi S12R-Y2MPTK Tier II engines rated at 5,000 hp for the tug Rhea. For its maiden voyage, Rhea towed a huge piece of oil-field equipment for 7 weeks. Rhea is a small, powerful, agile, sea-going tug capable of withstanding the rigors of any service in all weather conditions.

www.labordeproducts.com

Extra-Wide Shrink Wrap Protects Oversized Assets

Larger and oversized assets need just as much protection from the elements as smaller items. Now they can be shrink wrapped just as easily with Dr. Shrink's new 60' wide premium shrink wrap.

With the large width, it's much simpler to cover extra-large machinery, boats, or other equipment during transport or storage. It also enables one-piece coverage, further streamlining the shrink wrap process.

www.dr-shrink.com

John Deere's Engines for Marine Auxiliaries

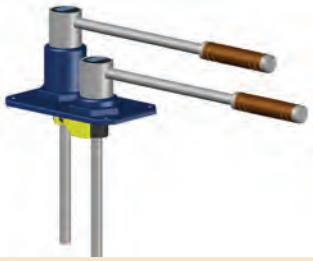
John Deere Power Systems' full line of radiator-cooled, dry-exhaust-manifold PowerTech auxiliary engines are ideal for powering deck auxiliaries, including pumps, winches, cranes, hydraulics and generators. The lineup meets EPA Marine Tier 3 emissions regulations for U.S. waterways, and offers reliable, cost-effective power to customers for their auxiliary applications. Marine Tier 3 auxiliary drive engines will be available in summer 2014.

www.JohnDeere.com/jdpower

Rio Controls & Hydraulics

Rio Controls & Hydraulics' steering system modifies existing inductive sensors used in the oil & gas industry and designs a steering system that utilizes this technology to provide accurate, longer lasting sensor command and feedback signals. This technology revolutionizes the marine industry by replacing conventional devices with cutting edge technology. The system eliminates up to 62 hookup points and three junction boxes.

www.riomarineinc.com



7000 Series Offers Powerful Cutting Solution

The 7000 Series from MultiCam offers a powerful cutting solution for heavy-duty production machining. It is a versatile machine beneficial for cutting a wide-range of materials for a number of different applications and industries. The 7000 Series features high-torque digital AC servo drives and a 24 horsepower spindle that can easily cut through wood, non-ferrous metals, composite materials and more.

www.MultiCam.com

IMO Type Approval for Trojan Marinex

The Trojan Marinex Ballast Water Treatment product suite has obtained IMO Type Approval. Rather than focusing on being first to get IMO Type Approval and testing to minimum standards, focus was put on refinement of the technology and a robust testing protocol. The certification process was conducted to U.S. Coast Guard standards, supporting a goal of USCG Type Approval later this year.

www.trojan-marinex.com

ESAB's Portable, Economical Cutting System

ESAB Cutting Systems has introduced Crossbow, a compact oxy-fuel/plasma CNC cutting system that is portable and economical. The machine's size and weight make it easy to transport. Automated functions and a user friendly CNC provide powerful, versatile, oxy-fuel or plasma processing. Crossbow is ideal for trade schools, small fab shops, maintenance and repair shops, or for portable use within large facilities.

www.esab-cutting.com

Claxton's camera upgrade puts crane safety in the picture

Claxton Engineering Services has launched the latest version for its ATEX and safe-area crane boom cameras. The system improves safety through upgrades in camera performance and user interface. Enhancements to the camera include state-of-the-art charge-coupled device (CCD) modules; 324-1 digital zoom; and a 28× optical zoom lens. The operator will always see a clear stable picture even when the crane boom is moving.

www.claxtonengineering.com

Safe Escape Locking Systems

This simple, effective locking device locks down hatches while still allowing secured crew members to escape in a quick and easy manner. The SEL protects the vessel and crew by providing a resilient barrier from outside threats, such as piracy and theft. The SEL complies with SOLAS, USCG and NVIC regulations and is approved by ABS also meets and exceeds ISPS standards.

www.safeescapelock.com

Victor Technologies Training Site Provides Resources without Login

Victor Technologies' new training site allows users direct and rapid access to quality training materials and tools from the company's website. Content is now available without log in or registration credentials, and it has been optimized for access on mobile devices. With the implementation of an extensive database and use of meta tags, visitors can use a simple keyword search.

www.victortechnologies.com

Tideland appoints DSS Distributor for Canada

Tideland Signal Corporation (Tideland) has appointed DSS Marine Incorporated (DSS) as distributor for the Canadian market. Effective immediately, DSS will distribute, support sales and provide service of Tideland products to Canadian customers through four (4) locations across the country. With the appointment of DSS, Tideland expands its reach in providing the highest quality of aids to navigation to the world.

www.tidelandsignal.com

Wichita Clutch Launches Updated Website

The updated Wichita Clutch corporate website provides information about their full line of heavy-duty industrial pneumatic and hydraulically actuated clutches and brakes including water cooled solutions and fluid couplings. The updated website is easy to navigate, allowing visitors to quickly search by product type, application or industry. The site features links to a Distributor Locator and Application Profiles.

www.wichitaclutch.com

Marco's BLASTMASTER 750 & 1600 CFM Air Dryers

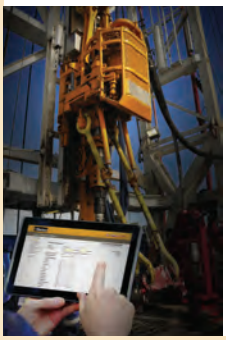
Marco Group International's Blastmaster 750 & 1600 CFM Air Dryers remove up to 99% of water in compressed air by cooling and then passing it through moisture absorbing desiccant tablets. Wet abrasive reduces production rates by causing poor abrasive flow through the abrasive blasting system, resulting in excessive wear on equipment, increasing maintenance costs, and increasing abrasive consumption.

www.marco.us

PTS Pro Enables Users to Target Unplanned Downtime with Advanced Maintenance Planning

PTS Pro, the latest addition to the Parker Tracking System (PTS) suite of products, gives subscribers a proactive tool against unplanned downtime, while maximizing uptime and profitability. From the easy-to-use Asset Management Dashboard, users can schedule inspections and replacements as needed, easily locate assets when maintenance is required, and record historical inspection details and results.

www.parker.com/pts



Multicam Introduces i401 Laser on 2000 Series

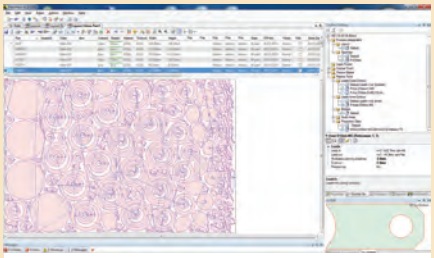
MultiCam has launched Synrad's new Firestar i401 laser on its 2000 Series CNC machines. The Synrad i401 laser produces a 400 watt beam. Four field replaceable integrated radio frequency modules facilitate ease maintenance. 23 percent more energy efficient and 24 percent less than previous models, the i401 laser's beam quality has the ability to produce consistent, high-quality parts over a large work surface.

www.MultiCam.com

Peerless Electronics Now Distributing Kissling Battery Disconnect Switches

Kissling Electrotec manufacturers battery disconnect switches range from 200 A to 500 A for the highest possible quality requirements in all vehicle applications. Options include single or dual pole configurations. Kissling switches from Peerless offer Environmentally sealed (IP67), High resistance to vibration & shock, full-amperage continuous duty at up to 32 VDC, Flange-mount or central-mount and Lock/out tag out capability and removable key option.

www.peerlesselectronics.com



ESAB CAD/CAM Programming & Nesting Software

ESAB Welding & Cutting Products has announced the release of Columbus III™ version 1.2, a powerful CAD/CAM programming and nesting software optimized for plasma, oxy-fuel, laser and waterjet cutting. This latest version of Columbus III offers many new features and updates to make programming easier and more efficient, improve material utilization, increase productivity, and streamline workflow.

www.esab-cutting.com

What's in Your Engine Oil?

Volvo Penta of the Americas is offering an Oil Analysis Program for all Volvo Penta diesel and gas engines. With this information, maintenance can be planned effectively and unplanned downtime and repair expenses avoided. Collect the sample and send it to a Volvo Penta laboratory and a complete report by email will be sent back with recommendations for maximizing engine performance.

www.volvopenta.com

Stainless Steel Grab Rail Delivers Good Looks

Created with an eye to design as well as utility and economy, the new 9" stainless steel grab rail from Schmitt & Ongaro adds a finishing touch to any vessel. Made of cast stainless steel and fitted with engineered Santoprene rubber grip inserts, the rail offers a safe and comfortable grasp, and is approved by the NMMA and the International Marine Certification Institute.

www.schmittongaromarine.com

COXREELS Re-engineered 1175 & 1185 Series

Coxreels has re-engineered the 1175 and 1185 Series reels. These two Series have been enhanced and now come equipped with a remodeled low profile outlet riser offering improved full-flow characteristics. The innovative low profile outlet riser along with the open drum slot design allow for non-crimping, flat smooth hose wrap. The reels are perfect for high-flow watering and high volume fluid delivery applications.

www.coxreels.com

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www.schottel.de

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Job ID: 145995
Hours/Shift: 35 hours/Monday-Friday; plus overtime

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Technology, Director

Job Location: USA, Seattle
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Kathy Lonetto
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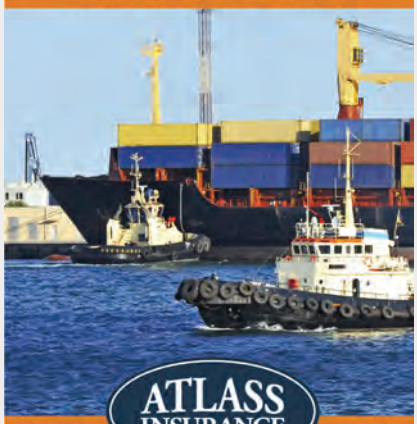
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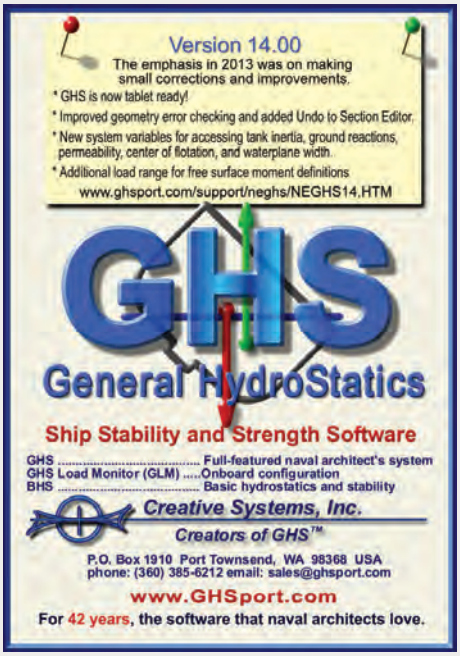

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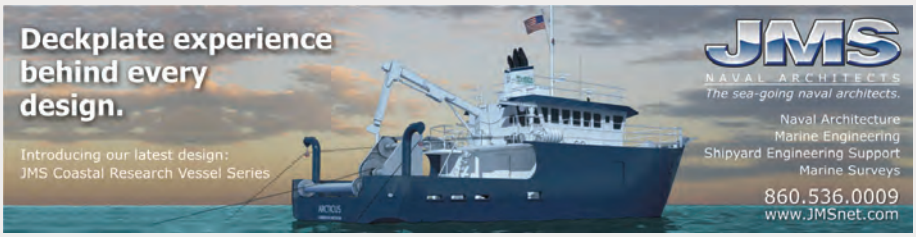

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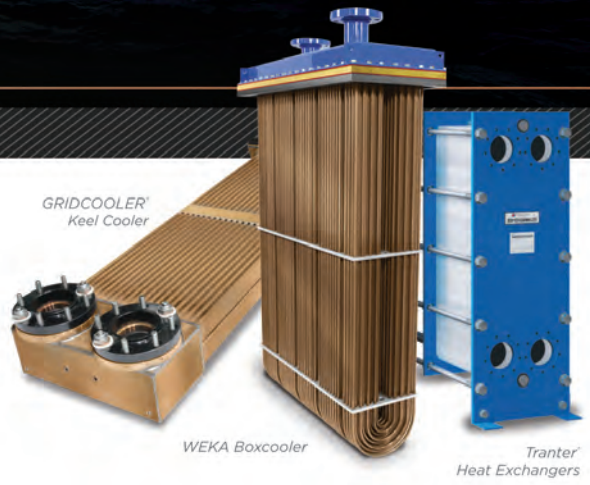

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