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# Marine News

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## Ferries

### & Passenger Vessels are Riding High in the Water

**Blended Learning**
For Changing Requirements

**Ballast Water Treatment**
USCG Approvals Start Rolling

**Shortsea Shipping**
Tampa Bay Ferry Leads The Way

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# Ferry Features



ON THE COVER

Pictured on the cover is the ferry Provincetown IV, docked in advance of its maiden voyage in November 2016. The unique, six-month pilot project connects the cities of St. Petersburg and Tampa. Shortsea shipping is alive and well in the sunshine state. Story begins on page 45.

**(Photo Courtesy Tucker Hall /Cross Bay Ferry)**


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# Departments & Analysis




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# Enhancing Life at Sea

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There has never been a more exciting time for North American passenger vessel and ferry operators. You can argue that point, but this sector finds itself on the very tip of the spear as a particularly exciting and event-filled year for the domestic waterfront begins. Without a doubt, if even one-half of the potential developments that loom large for workboats come to fruition, then we will be looking at the beginning of an uptick in the maritime business climate. Nowhere is that more true than for the passenger vessel and ferry industries.

A major recapitalization of ferry fleets, coast-to-coast, is well underway. New designs, new hulls and all the amenities that today's consumers crave are on the way, along with increased capacities and – just maybe – some new routes as well. The drivers for the passenger vessel revival are many – fuel economy, environmental and regulatory pressures and a more discerning customer base among them – but the end result is a revived boatbuilding sector. This month, **Joe Hudspeth** (page 16) **Patricia Keefe** (page 40) and **Barry Parker** (page 34) each bring their own take on that white hot pace. That's just the high octane boost that the shipyard sector desperately needs, at just the right time.

At the same time, that new, high tech tonnage places what **Murray Goldberg** and **Joy Findley** both characterize as "unique challenges upon operators when it comes to training and safety." That's where Blended Learning comes in. The Washington State Ferries is exploring the use of blended learning (combining eLearning and face-to-face training) to help alleviate their training challenges. That story begins on page 24.

And just when you thought things couldn't get any more exciting, the U.S. Coast Guard (at long last and at last count) ended 2016 with not one but three ballast water technology approvals, eliminating the vast majority of obstacles for vessel operators to install the now-required systems. Not all domestic brown water hulls will be impacted – a small number of 39,000 vessels, actually – but with the IMO BWT convention and approvals from this side of the pond, those operators who are, will need to get to work. Some are already at it, installing approved BWT technologies as you read this copy. That story begins on page 30.

We begin 2017 with our proverbial maritime vessel full and down, proceeding full speed ahead, and leaving the greenest wake that marine commerce has seen since sailing ships went the way of horse-drawn carriages. Awaiting us is not so much a destination as it is a gauntlet of challenges that include ballast water treatment installations, subchapter M towboat compliance, and ever tightening emission tiers. That reality, although promising a mild headache for operators, also gives hope to OEM's from all sides of the industry, and the shipyards that they serve. 2017 will be anything but boring. You'll read all about it in the coming months, right here at home within the pages of *MarineNews*. I look forward to driving the boat and steering the conversation.



**Joseph Keefe**, Editor, keefe@marinelink.com


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# Passenger Vessel and Ferry Safety: it's all about Location

According to the International Maritime Organization, the global ferry industry transports 2.1 billion passengers annually, as well as another 250 million vehicles and 32 million trailers. The safety of passenger vessels varies widely, depending on where that ferry operates. And, as we showed in our November 2016 edition of ***MarineNews***, North American ferries are, by and large, some of the safest on the planet. It isn't an apple-to-apples comparison by any stretch of the imagination, but the average of 34 passenger vessel fatalities over the course of the last five years in the United States (200,000,000 passengers carried annually) is far lower than the ~1,541 who annually lose their lives elsewhere. And the number of domestic casualties is gradually coming down. The same cannot be said for foreign ferries and passenger vessels.

In Neil Baird's recent report to the Interferry Conference at Manila, "***Fatal Passenger Vessel Accidents and How to Prevent Them***," he asserts that human error is the major cause of most of these deadly mishaps. That's no surprise. He analyzed 750 accidents spanning the last half century and found that 88% of accidents and 98% of fatalities result from human error. And, while he also reported that sea travel is third safest travel mode after aviation and rail, accidents on the water still kill thousands annually. He points to 'ground zero' of most fatal passenger vessel accidents: the five worst countries including Bangladesh, DR Congo, Indonesia, Philippines and Tanzania. Collectively they have produced 59% of fatalities over the past 50 years, and in fact the problem is worsening there.

Separately, Abigail Golden and Roberta Weisbrod of the Worldwide Ferry Safety Association (WFSA), recently issued their own report, entitled, "***Trends, Causal Analysis, and Recommendations from 14 Years of Ferry Accidents***." WFSA is an organization dedicated, in part, to improving safety standards to ferries, no matter where they operate. Unlike North American markets, where bus and rail transit is well developed and widely available, some nations don't have that sort of infrastructure. There, ferries and other passenger vessels provide a crucial transport mode in the developing world, especially in archipelagic and river delta nations. This dependence on passenger vessels coincides with a high rate of accidents and fatalities in many countries, linked to purchase of old, substandard, and inappropriate vessels in low-income nations; overcrowding; inadequate training; and sudden hazardous weather, as well as to more systemic issues such as inadequate support and/or corruption in the regulatory process. Any serious attempt to decrease the number and fatality count of ferry accidents in the developing world must have a complete record of past incidents upon which to draw. Arriving at their conclusions, the authors depend upon detailed information on the 232 major accidents that occurred around the world between 2000 and 2014. It assesses the prevalence of various common factors in ferry accidents, including human error, hazardous weather, and overcrowding, and makes recommendations for future research into the prevention of ferry accidents.

Weisbrod and Golden, like Baird, attribute human error as a frequent cause of accidents and mishaps, accounting for about 80% of maritime vessel accidents, but this number has not been put to the test of a rigorous quantitative analysis, especially for passenger vessels. In their analysis, the authors determined the percentage of all accidents attributable to human error and the percentage of all fatalities attributable to human error. Cases for which the cause of the accident is unknown have not been included in either analysis; these accounted for 14% of the total dataset. Of the dataset's 21,574 fatalities, at least 70% were related to human error, and potentially, 86% of the lives lost were linked to human error.

***Other Causes***: Of the 232 accidents covered by this study, 50% were at least partially caused by hazardous weather, unsafe wave conditions, monsoon-related flooding, or unusually strong currents. Many ferry operators, constrained by artificially low ticket prices imposed by government regulation, deliberately overload vessels with passengers and cargo to cover their costs and turn a profit. In all, overloading and overcrowding played a role in about a third (29%) of the accidents collected in this database, although they rarely caused accidents alone without the influence of other factors.

Other Causes include collisions and other navigational problems (22% of all accidents). Fires and engine trouble – truck ferry fires in particular – were at least the partial cause of 26 accidents (11%). 60% of these accidents occurred during the night or at dawn, when visibility is low and crewmember alertness suffers. Search and Rescue (SAR) challenges and initiatives are unique to each country represented in the dataset. The five most fatality-prone countries in the world as described above have several challenges in common: large rescue areas but inadequate rescue and salvage equipment, which, combined with dangerous weather and sea state conditions, can cost SAR services hours of delay in reaching accident sites. Many vessels do not carry communications devices, meaning SAR coordinators may not receive distress sig-

nals in time for their efforts to be effective.

Efforts to monitor, let alone improve, ferry safety in the developing world are handicapped by incomplete recordkeeping in many developing countries. Here at home in the United States, the U.S. Coast Guard has a similarly difficult task, because the numbers are anything but straightforward, spanning many different types of vessels, subchapter classifications, and a host of other obstacles (proprietary data, among them). WSFA's global records, in contrast, contain 25 data fields were collected across the 232 entries. And, while in many entries, one or more of the desired metrics is missing, the lack of records about these factors can itself be considered an important data point in the understanding of ferry accidents, since it indicates poor recordkeeping and accident investigation in those countries. The effort to quantify, define and eliminate ferry losses everywhere goes on. Better recordkeeping and more data points will help in that effort. Table 2 shows just a sampling of WFSA casualty records and the many data points which they record in their database.

***Ferry & Passenger Vessel Accidents, By the Numbers:***

| |
|---|
| **3:** Top 3 countries – Bangladesh, Indonesia, and the Philippines – responsible for 50% of all accidents. |
| **14:** years of records (2000 to 2015) |
| **43:** Number of countries where ferry accidents occurred |
| **67:** Percent of all fatalities occurring in Bangladesh, Tanzania, Indonesia, Senegal, and the Philippines |
| **94:** Percent of all accidents and (97%) of all fatalities occurring developing world |
| **130:** Average deaths per incident |
| **232:** Number of Ferry Accidents |
| **1,541:** the Number of Deaths occurring per year as a result of ferry accidents. |
| **21,574:** Total Number of lives lost |

**Table 1:** *Summary of Results of Human Error Ferry Accident Analysis*

| | Conservative | Liberal |
|---|---|---|
| Number of Accidents | | |
| % HE (*) by total known cases | 61 | 85 |
| % HE by total cases, known and unknown | 53 | 73 |
| % unknown | 14 | 14 |
| Fatalities (dead and missing) | | |
| # fatalities caused by HE | 15,156 | 18,595 |
| % fatalities caused by HE by total known cases | 75 | 92 |
| % fatalities caused by HE (total cases) known & unknown | 70 | 86 |

*(*)HE = human error*

**Table 2:**

| Mo./Yr. | Region | Fatalities | Missing | # Aboard | Capacity | Cause | Time |
|---|---|---|---|---|---|---|---|
| 1/2015 | W. Africa | 2 | 0 | 20 | ? | ingress of water due to leak | Night |
| 2/2015 | South Asia | 7 | 0 | 200+ | | engine shut down, capsized | ? |
| 2/2015 | SE Asia | 0 | 15 | 17 | ? | Sank: overcrowding/overloading | Day |
| 2/2015 | South Asia | 79 | 21 | 150 | 140 | hit by cargo trawler | Day |
| 2/2015 | SE Asia | 2 | 3 | 25 | ? | sank due to leak in the vessel's hull | ? |
| 3/2015 | SE Asia | 72 | 162 | 250+ | 176 | weather, overloaded | Night |
| 4/2015 | South Asia | 11 | 3 | 80 | ? | collision with a sand carrier | Day |
| 5/2015 | SE Asia | 10 | 0 | 39 | 15 | capsized, overloading | ? |
| 6/2015 | East Asia | 442 | 0 | 454 | 534 | In sharp turn, capsized in cyclone | Night |
| 7/2015 | SE Asia | 61 | 0 | 206 | 194 | capsized (cargo shifted) | ? |
| 8/2016 | SE Asia | 0 | 4 | 17 | 10 | Capsized, overloading, speeding | ? |
| 9/2016 | South Asia | 10 | 11 | 50 | ? | Riverbank collapsed on overcrowded ferry | Noon |
| 9/2016 | SE Asia | 18 | 7 | 150+ | 50 | Allision / Overloaded | Day |
| 9/2016 | SE Asia | 3 | ? | 35 | ? | Explosion on board | ? |
| 10/2016 | SE Asia | 72 | ~ 30 | 300 | 150 | Capsized due to overloading | ? |

*Source: WFSA*

WORLDWIDE FERRY SAFETY ASSOCIATION

***See the WFSA's full report at:***
http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1513&context=jpt


# President, Beaver Island Boat Company

Margo Marks is President/General Manager of Beaver Island Boat Company, Beaver Island, MI. The company has provided passenger, vehicle and freight services, between Beaver Island and Charlevoix, MI since 1984. The first ferry service to the island began in 1890. B.I. Boat Company operates two subchapter K vessels with a capacity of up to 294 passengers and 16 vehicles on the larger vessel, and 172 passengers and 9 vehicles on the smaller vessel. Notably, Margo has deep roots in the Gresat Lakes community and graduated from the Great Lakes Maritime Academy in 1983, She holds a First Class Pilot (Great Lakes) and Mates Great Lakes/Inland Water license of any gross tons and a 100 ton Masters license. Beyond this, she also graduated from Ferris State University where she earned her BA in Business Administration in 1984. Margo has been with Beaver Island Boat Company since 2001 and currently serves as PVA's President, having previously served for 6 years on the board of directors. She is the former Chairman of the PVA Regulatory Committee and participates in the Quality Partnership meetings with the U.S. Coast Guard. A strong industry leader and a recognized stakeholder in many aspects of advocacy and outreach, she also serves on the U.S. Coast Guard's Western Michigan Area Maritime Security Committee, the safety committee for the Inland Seas Education Association, and is a member of the Great Lakes Captains Association and the International Shipmasters Association Lodge 23. To say that she has her finger on what is important to ferry operators on the Great Lakes – and everywhere else – would not be overstating the case. Listen this month as she weighs in on the important issues and challenges facing North America's passenger vessel and ferry industries.

**As President of PVA, where can you do the most good for the organization and its members?**

As PVA President, I am responsible for setting the strategic direction for our association. Working with my fellow Officers, Board of Directors and PVA staff we identify both long and short-term work priorities and issues that are important to our diverse membership. As the voice of the U.S. passenger vessel industry, advancing the economic health of our industry, while promoting safety and a secure maritime operating environment nationwide are key elements to our mission. I've drawn upon my years of experience in the passenger vessel industry to assist in achieving our goals. PVA speaks directly with lawmakers and regulators to advocate for the industry. One of my major initiatives this year was to expand our partnership work with the Coast Guard. We've done this by increasing our participation in Coast Guard Industry Day events across the country, and initiating new working groups to develop voluntary guidelines to reduce slips, trips and falls, clarifying and updating Coast Guard policy and guidance on engine control system automation and identifying ways to increase Coast Guard enforcement of illegal charter operations nationwide. This important work enhances our relationship with Coast Guard leadership and promotes greater understanding, which helps improve member interactions with the Coast Guard.

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**Under your leadership, what are some of the activities that PVA has engaged in to advance the industry?**

As my presidency began earlier this year, President Obama signed into law superseding amendments to the 'one-size-fits-all' survival craft law. This fulfills PVA's long-sought goal of continuing to have the Coast Guard establish survival craft rules based on risk analysis. I'd like to take credit, but the heavy lifting to achieve this accomplishment took place under the watch of my predecessor Dave Anderson and earlier PVA Presidents. PVA has been involved in the TWIC Reader rulemaking process since 2006. In the final rule, the Coast Guard used risk-based analysis for determining which vessels needed readers, essentially exempting all U.S. flagged-passenger vessels. We are delighted that the Coast Guard has supported PVA's long-held position that TWIC Readers are unnecessary for the vast majority of passenger vessel operators. We strongly believe that current industry security measures are effective in protecting passengers and crew and we are pleased that the Coast Guard has agreed with us. PVA has also developed a new online training portal for members. PVA's safety and security training resources are now more accessible than ever. The data collected from users of this program will be helpful in developing additional training tools for the future. Additionally, PVA worked with the Coast Guard to obtain a blanket waiver from new Federal Communications Commission rules requiring upgraded radio systems. These new devices would have been much more expensive and overly complex than what is needed for domestic passenger vessels. We can continue to use a radio system that is more appropriate for our industry's needs.

**What is the PVA Alternate Security Program, what is its purpose?**

PVA's Alternate Security Program (ASP) provides a comprehensive framework for security procedures while at the same time allowing companies the flexibility to address the unique features of their operations and make the Program their own. PVA's ASP is a Coast Guard approved program to help members meet their security requirements. Passenger vessel operators have basically two choices for compliance with the Maritime Transportation Security Act. One option is for a company to write and implement an individual security program that must be approved by the Coast Guard. The other is to use the PVA ASP, which is a Coast Guard-approved alternative that can be easily implemented. PVA consistently works with the Coast Guard to ensure that the ASP is updated to include any federal security policy changes. A forthcoming revision will incorporate the new Transportation Worker Identification Credential (TWIC) Reader requirements for certain facilities and will provide guidance on assessing cyber security risks. We continue to encourage security awareness and training. Our Safety and Security Committee has developed a series of templates to assist with security drills and exercises.

PVA members also have participated in a number of Active Shooter exercises in coordination with various law enforcement and federal agencies. The follow-up reports highlight lessons learned and recommendations for member use.

**What's the biggest regulatory headache on the table right now for PVA member companies? Why? And, what can be done about it?**

PVA is concerned about the possibility of strained Coast Guard inspection resources as a result of new Coast Guard responsibilities, including the promulgation of the Subchapter M rule, which has added new inspection duties without increasing resources. PVA has expressed its concern to the Coast Guard about this and is working closely with them to develop new risk-based approaches to vessel inspections which will improve and simplify the inspection process for both passenger vessel operators and Coast Guard inspectors. At the same time, PVA continues to communicate with Congress about the ongoing need to adequately fund the Coast Guard marine safety mission.

**Arguably, the most frustrating aspects of the Coast Guard's casualty investigation and reporting processes are its perceived inconsistent application, inappropriate restriction of operations and an outdated reporting form. Has there been any progress in the past 12 months on this front?**

PVA has consistently sought improvement in the casualty reporting process. Members consistently reported confusion about what and when to report because of inconsistency from port-to-port and from investigator-to-investigator. Confusion, over-reporting, misinterpretation of regulation and policy and Coast Guard overreaction were seen as symptoms that required a new approach, which resulted in the new Navigation and Vessel Inspection Circular (NVIC) issued in July, 2015. The NVIC clarified Injury reporting on natural or pre-existing medical conditions in passenger injury and death; reporting of bump and go groundings; and loss of vessel systems without loss of maneuverability—all not requiring the submission of CG Form 2692. Overall, we feel that the Coast Guard requirement for immediate reports of a possible marine casualty is greatly improved with qualified marine investigators making decisions about submitting a CG Form 2692. While there have been needed improvements in the marine casualty reporting process, we still feel that the dollar threshold for marine casualty reporting remains unre-

alistically low. PVA is advocating for an increase in this dollar amount that is more in line with today's costs and accounts for inflation. This has to be accomplished by a regulatory change.

**If you had to choose just one issue that is facing PVA members that you deem the most important to address in the coming year, then what would that be, and why?**

PVA is aggressively working to combat illegal charters that are marketed via the Internet. Nationwide, we've seen an increase in operators promoting the sale of charters for hire that do not meet the regulatory requirements for safety, inspection, and licensing. Many of these are being marketed wide-spread to the public through various boat-sharing websites. The public should be made aware of the hazards associated with taking trips on vessels not subject to the same level of safety regulations and oversight as inspected passenger vessels. PVA is encouraging the Coast Guard to augment their investigation and enforcement in this area and has additionally established an official chartered working group with the Coast Guard to address this issue. The Coast Guard needs to reach out to these organizations and clarify the legal requirements associated with chartering a recreational vessel.

**Are there any other regulatory changes looming for the industry that gives you and your collective membership particular concern? If so, which ones and in what ways do the new rules impact operations?**

At the end of 2017 thousands of smaller commercial vessels will be subject to the Environmental Protection Agency's Vessel General Permit (VGP) for incidental wastewater discharges. For years, commercial vessels less than 79 feet in length (with no ballast water) were statutorily exempt from this permit. This exemption is based on an earlier EPA report to Congress that showed such discharges from "smaller" vessels have minimal impact. Without Congressional action, thousands of smaller passenger vessels and commercial charter fishing vessels across the country will become subject to additional but unnecessary federal regulation. To this end, PVA has been working with a coalition of maritime industry groups in support of the Vessel Incidental Discharges Act (VIDA) (H.R. 980/S.373). VIDA will make this exemption permanent, and will streamline a number of challenges facing operators of vessel who are subject to the VGP. We hope to see Congress take action to resolve this issue.

# Ferry Tales
## Having a Ferry Good Time

**By Joe Hudspeth**


Hudspeth

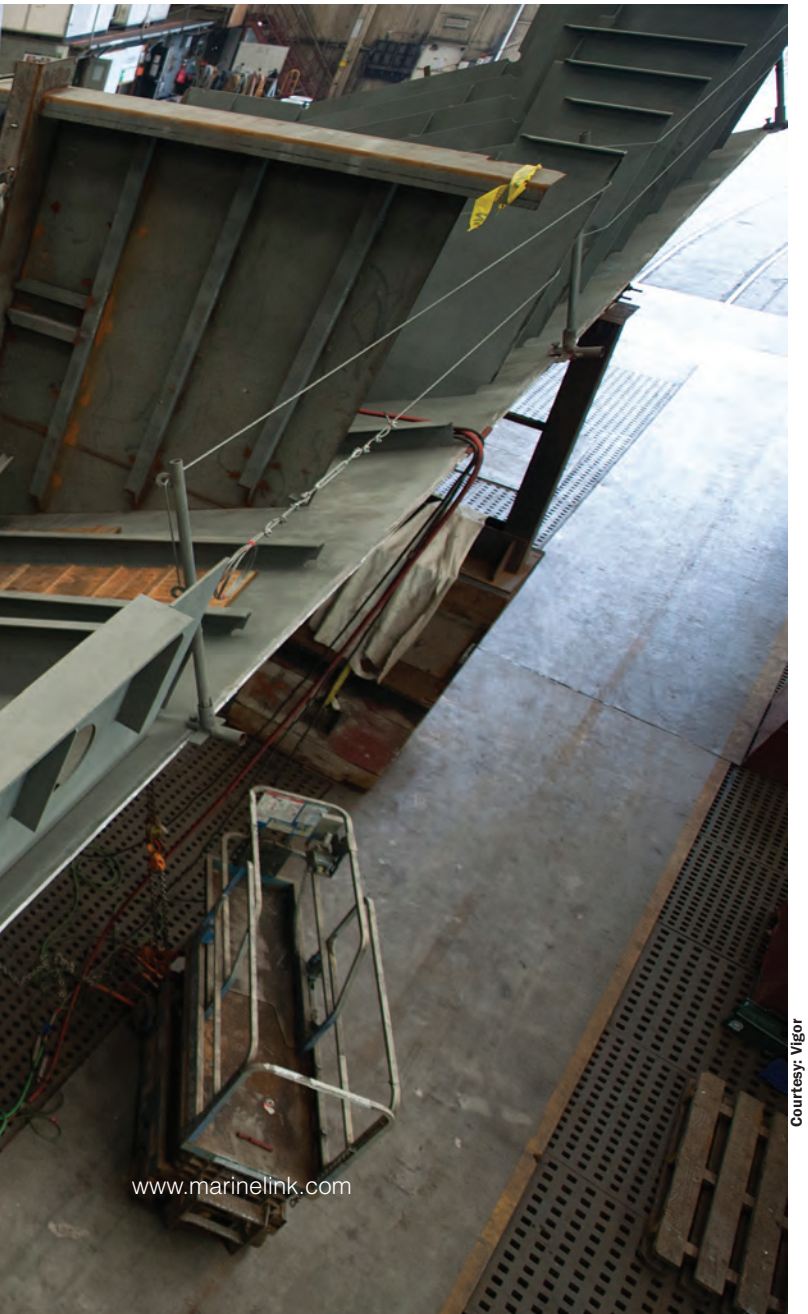
Despite of some of the lowest fuel prices experienced in the last eight years, demand for ferry construction is at a seemingly all time high. The focus on building new ferries kicked off in early 2013 and the sustained interest is the continued result of an unleashing of pent up demand. Fleets have been aging and infrastructure needs to be built up in order to accommodate the future demand for commuter ferry travel once fuel prices return to and surpass their once familiar norms.

The desire for more and better waterborne transit becomes even more appealing as stakeholders realize that little can be done to help ease roadway congestion. Hope and solace can be found on the water – the real key to a successful intermodal equation – and a close examination of many shipyards' order books prove that the manifestation of such hope is well underway.

## Looking Back, and Ahead

The last bull market for ferry construction occurred in the late 1990's and early 2000's. With many of those vessels now approaching 20 years and others older yet, it is clearly time for renewal. The country's three largest ferry operations; Washington State Ferries, Staten Island Ferries, and Alaska Marine Highway Systems all have seats at the new ferry feast and have new vessel construction contracts in the works to help modernize their respective fleets. And, while it is healthy and reassuring for our industry to see such investments being made in maintaining our legacy ferry operations, there is also a surprising, but nevertheless substantial development of new ferry routes with corresponding vessel construction.

New York City's ambitious push for the brand new routes and vessels of the Citywide Ferry, set to kick off in the first half of 2017, has captured a fair amount of attention. Vendors, developers, operators, shipyards, and consultants all have a watchful eye on the city and its operator, Hornblower Cruises, to see what it takes to put 19 new vessels into service on such a short timeframe. Similarly, the nation's capital will also very soon be home to a couple new water taxi ferries on a new route servicing the District Wharf development which is set to open this October. Local operator, Potomac Riverboat Company of Alexandria, Virginia will construct several new vessels to complement their existing fleet for the new service.



Courtesy: Vigor



Separately, and with the passing a recent funding measure on the November ballot, Kitsap Transit of Bremerton, Washington will also be looking to fabricate a small ferry fleet of 5 new vessels over the next few years. Kitsap Transit, together with their operating partner, King County Ferry Division, intends to add passenger-only ferry service from Kingston, Southworth, and Bremerton to downtown Seattle. These routes will round out existing routes currently operated by King County Water Taxi to Vashon Island and West Seattle.

Elsewhere, and while all of these projects are in the works, several ferries have recently been delivered, and even more are being contemplated for the future. The cities of Tampa and St. Petersburg, Florida are conducting a 6 month pilot project in hopes of getting traction for eventual permanent service. Earlier in 2016, North Carolina Department of Transportation also conducted a feasibility study and ran a pilot demonstration for a new passenger-only high speed ferry service between Hatteras and Ocracoke Island. Hence, a brief snapshot of how 2017 is already shaping up gives shipyards and vendors everywhere that another great year for ferries is in the making.

## Ferry Fabric

Replacing ferries in-kind is one thing, but another opportunity that should not be overlooked is the benefit of contemplating a completely new design. At the most basic level, all new construction projects should offer an improved customer experience. While there are many challenges for designers and builders, complying with the latest ADA accessibility guidelines is a given. Likewise, customers have an elevated level of expectation for improved technology to augment their ride. WiFi, power ports, automated ticketing or counting systems, and onboard information displays are all fast becoming necessities, rather than amenities. But, these enhancements are really just cake icing in the entire scheme. Instead, what has become more important is designing hulls for efficiency, considering alterna-

tive fuels, hybrid propulsion systems, and improving stability and ride quality.

Not so long ago, builders and naval architects were renting super-computer space from tech capitals such as the University of Iowa to run very complex hull design calculations> Now, boat builders have in-house capability to utilize the principles of Computational Fluid Dynamics (CFD) modeling to optimize hull shapes. With a few keyboard strokes and mouse clicks, designers can digitally tweak the shape of a hull, run the model through a virtual tow tank, and semi-instantaneously realize any resulting benefits. CFD analysis can be used to enhance hulls for speed, seakeeping, and wake wash; all top concerns for new generation ferries. Wake wash mitigation has started to become a trend in new ferry designs and it has become more and more common for operators to task ferry designers to meet a specific set of wake wash energy criteria and provide the testing for adequate confirmation.

## Ferry Complicated

For passenger vessels in the private sector, the implications associated with the transition from EPA Tier III regulations to those of Tier IV has certainly sparked some of the motivation to move forward on laying new keels, but that is not completely the case. Some public agencies such as San Francisco Bay Ferry (also known as Water

*At the most basic level, all new construction projects should offer an improved customer experience. While there are many challenges for designers and builders, complying with the latest ADA accessibility guidelines is a given. Likewise, customers have an elevated level of expectation for improved technology to augment their ride. WiFi, power ports, automated ticketing or counting systems, and onboard information displays are all fast becoming necessities, rather than amenities.*

Emergency Transportation Authority, WETA) have seen value in operating greener vessels and have pushed the requirement for Tier IV technology even before the EPA has approved and released certification for compliant engines. Complying with Tier IV comes at cost premium both for initial implementation and operation.

The larger, heavier, more complex system of a propulsion engine with an exhaust after-treatment system generates some new challenges that ferry operators have yet to face. When it comes to high speed or high horsepower ferry procurement, decisions will have to be made with regard to deciding whether pursuing a Tier IV solution is even a viable option.

Courtesy: Vigor

At the lower end of the Tier IV horsepower spectrum, a fast ferry may not prove to be so fast with all the additional weight. For some operations to prove viable, schedule is paramount and every knot counts. Worse yet, one paying passenger may lose their seat for every 185 pounds of exhaust after-treatment equipment brought on board based upon weight sensitivity and stability calculations. Even if the these issues are resolved, the operator will still need to source urea-based Diesel Emission Fluid (DEF) to keep the ferry running and the supply chain for this product is not yet readily available at some local fuel docks.

## Ferry Fantasy

For now, the ferry market is robust, and it is growing. The strength of this sector has provided a safe harbor for some builders who have been heavily impacted by the downturn of the offshore oil market. Such injections of favorable market conditions for building passenger ferries don't necessarily translate into an open invitation for all boat builders. Constructing passenger ferries is a complex process and the know-how involved with complying with U.S. Coast Guard inspections isn't easily achieved; certainly not right out of the gate.

For example, the Coast Guard, from time to time, is fully capable of throwing even the most experienced builders for a loop. Recently, some inspectors issued an objection to a boat builder that required all the survival craft on a particular vessel to be replaced with larger, more expensive equipment. It took the builder some initiative, time – and the advocacy of the Passenger Vessel Association – to show the inspectors a copy of their own agency's policy letter that proved the builder was in full compliance.

All of that said; building these purpose-built, people moving vessels can prove profitable and provide prolific projects to keep yards full, but sustainable success will only be found for shipyards and operators who work together to ensure that right vessel design is constructed in the right manner.

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

# OCS Foreign Vessel Manning ... the Rest of the Story

**By Steve Southerland**


Southerland

I grew up listening to esteemed radio broadcaster Paul Harvey and his well-known ability to tell us the "rest of the story." As a former Congressman, Vice Chairman of the House Subcommittee on Coast Guard and Maritime Transportation, and member of the House Committee on Natural Resources, I have to emulate Mr. Harvey and tell the rest of the story behind Jonathan Waldron's piece which appeared in the November 2016 edition of ***Maritime Reporter and Engineering News***.

In this piece, Mr. Waldron argued that U.S. workers and companies should be held at a disadvantage when they compete for work on our Outer Continental Shelf (OCS) against foreign-owned vessels. Let me counter here the hysteria contained in Mr. Waldron's opinion piece and explain why U.S. workers can and should compete for work on their own OCS, and how our OCS has been opened to an uncontrolled foreign work-force that takes jobs from U.S. mariners and creates potential security issues given the lax controls over their visas.

To review, in 1978, Congress amended the Outer Continental Shelf Lands Act (OCSLA). The 1978 amendments included a "national manning requirement" aimed at ensuring that U.S. workers would not be displaced on their own continental shelf by low-cost foreign labor. Unfortunately, implementation of this act has not worked out that way. The amendments included an exemption to vessels that are more than 50% foreign owned or controlled. In practice, vessel owners from first-world nations, like Norway, employ vessel crews from low-wage nations, like the Ukraine or the Philippines, to do U.S. OCS work. The result is that U.S. companies, which do not enjoy the exemption, are placed at a competitive disadvantage.

This practice of "social dumping" hasn't escaped the notice of Norwegian labor unions who last year launched a boycott against companies engaging in this same practice in Norwegian waters. Thus, Norwegian companies are employing manning tactics in the U.S. that don't even fly in Norway.

Not only are these workers allowed into the United States, they do so without going through the usual process required for non-immigrant, foreign workers. Specifically, their employers aren't required to demonstrate that their admittance will not displace U.S. workers, a usual requirement for employers of foreign workers. Additionally, the foreign OCS work-force is allowed to stay for longer than other foreign workers and is not required to abide by the same work conditions, terms, and pay required of U.S. workers on the OCS.

Essentially, implementation of the 1978 amendments to OCSLA suspends normal practices and allows vessel workers to enter the country as "business travelers," leaving the terms of their employment completely unregulated by U.S. authorities and thereby making it significantly more challenging for U.S. employers to compete using their U.S.-flag vessels.

While taking jobs from U.S. workers and U.S. companies is enough of a reason to halt this practice, what makes this situation even worse is that our government is not tracking in a coordinated fashion who these workers are or even how many are working off our shores. My former colleagues in Congress asked for a quantification of the number of persons who have entered the United States to work on this basis, and no one in government seems to be able to answer that simple question. Clearly, we have a problem.

Additionally, we're not talking about office jobs – the positions these foreign workers are taking are safety critical. These jobs involve operating assets that have the inherent ability to cause deadly or environmentally calamitous accidents. It makes sense that our regulators should at least know who is operating these assets.

I think anyone can see these are problems. So what should we do about them?

Congress should work to restore its intent in the 1978 amendments by matching the citizenship of foreign vessel workers who come to our OCS with the nationality of the vessel on which they serve. So, if a Norwegian vessel is working on our OCS, the law should allow Norwegian mariners to crew the vessel. That seems perfectly fair and it is difficult to foresee any objection by Norway to a U.S.

*Restoring the intent of the national manning requirement will not "potentially [shut] down the entire offshore industry" as Mr. Waldron claims – a hysterical and again unsupported claim. There is an abundance of highly qualified American mariners capable of operating all vessels used in OCS operations. U.S. mariners are among the highest trained, most regulated, and safest on the globe.*

law that promotes the employment of Norwegian citizens in the United States, if in fact, as demonstrated above, Norwegian workers have boycotted Norwegian companies to advance exactly that purpose.

Additionally, if a foreign vessel's owner chooses a flag of convenience, such as Vanuatu, and cannot find qualified mariners who are Vanuatu citizens, then the vessel should have to be crewed by U.S. citizens. What is not acceptable is to continue to subject U.S. vessel owners and their U.S. employees to competition on our own OCS against an unregulated global work-force drawn from low-wage nations.

This strategy restores the ability of the United States to retaliate if a countervailing national manning requirement is imposed that limits U.S. worker access to another nation's OCS. Under current practice, if Norway, for example, were to enact a national manning requirement that limited the employment of U.S. workers on its OCS, the United States response would be muted because it could only displace the current non-Norwegian low-wage workers here. Having lost no work for Norwegians, Norway would have little incentive to drop its offending national manning requirement that ensures employment for its citizens on its OCS. By recoupling the vessel's nationality and crew citizenship, the reciprocal nature of the 1978 national manning requirement and its exemption is restored.

Contrary to Mr. Waldron's unsupported claims, restoring the intent of the 1978 amendments does not conflict with international law. OCSLA makes clear that OCS operations are domestic operations. The OCS is no different than an Oklahoma oil field except that it has water over it. Congress can, and did, create a national manning requirement that dictates the citizenship of persons working on all OCS vessels, regardless of their flag. The terms of any exemption that Congress concludes is appropriate from such a national manning requirement is purely a domestic matter. As currently drawn, the exemption has had a perverse effect on U.S. companies and U.S. workers, which is exactly what Congress aimed to avoid in 1978. Recognizing and fixing the problem now is what Congress should do.

Nor is there a need for alarm over the inability of OCS operations to continue as they have always, in a safe and environmentally sound manner. Restoring the intent of the national manning requirement will not "potentially [shut] down the entire offshore industry" as Mr. Waldron claims – a hysterical and again unsupported claim. There is an abundance of highly qualified American mariners capable of operating all vessels used in OCS operations. U.S. mariners are among the highest trained, most regulated, and safest on the globe. To suggest that they are inferior to their counter-parts from Russia, Poland, Ukraine, and the Philippines, with whom they currently compete on the OCS, is simply not true, and is frankly offensive.

However, if for some unforeseen reason a vessel's crew could not be altered, current law allows the U.S. Coast Guard to provide a waiver if there are no U.S. citizens that are qualified and available for such work. Further, existing law allows non-mariner specialists on foreign vessels. No changes are needed here.

Let's be honest, the owners of foreign vessels will always object to any effort to eliminate their artificial competitive advantage – i.e., paying low-wages within the U.S. But, we as a nation shouldn't mortgage our safety, our security, and the jobs of our citizens to continue this windfall for another 30 years. It's high time this windfall is eliminated, and that U.S. companies and workers have a fair shot at competing on our own OCS.

*The Honorable **Steve Southerland** (R-FL) represented Florida's Second Congressional District from 2010 to 2014. He is a lifelong resident of Panama City, Florida. He is currently Senior Vice President for the Capitol Hill Consulting Group where he represents the Offshore Marine Service Association (OMSA). While serving in Congress, he served as Vice Chairman of the House Subcommittee on Coast Guard and Maritime Transportation, and was a member of the House Committee on Natural Resources.*

# Safety and the Environment:
## same aims, different methods ...

*The ferry industry faces sector-specific challenges from the latest round of regulatory debate.*

**By Johan Roos**

Roos

Much of my role at Interferry involves our consultative status at the International Maritime Organization (IMO), the United Nations body that sets the safety and environmental rules governing international shipping. We are passionate about the central aims of protecting people and the planet, so don't get me wrong when I say that all too often this aspect of my work could be defined as damage limitation. In recent times, we have seen several proposed regulations that, while practical for deep-sea vessels, threaten the commercial viability of ferries due to their very different design and operational boundaries. As a result, Interferry has been at the forefront of arguing that one size doesn't fit all – and thankfully our calls for sector-specific solutions are now being heard louder and clearer than ever.

The latest encouragement came in November at MSC97, the 97th session of the IMO's Maritime Safety Committee, when we helped win agreement to renegotiate the long-debated and previously agreed issue of damage stability for passenger ships. The origins of this go back to the Estonia sinking in the Baltic Sea in 1994, when more than 850 died. The European Union (EU) reacted by unilaterally imposing enhanced structural requirements under the Stockholm Agreement, which was widely embraced by the ferry industry.

Over the following 15 years, a series of EU research projects took place under a process of harmonization with IMO Safety of Life at Sea (SOLAS) regulations. Our alarm bells started to ring when the final project unexpectedly suggested a dramatic increase in deck sub-division via the so-called Index R – a theoretical measure of the survivability of a damaged ship – which would pose huge problems for on roll-on, roll-off vehicle deck procedures. Interferry began to promote a more balanced approach: rather than striving for the unsinkable ship by adding more and more steel, we advocated a blend of improved technology and greater focus on accident prevention.

Some flag states, notably Japan, supported our concerns that the suggested subdivision level was too high for smaller passenger ships, but in previous addresses to the IMO we were overwhelmingly opposed by the EU bloc – and the MSC96 meeting last May duly approved the Index R proposal. Yet now, a major breakthrough followed at MSC97. Interferry backed a submission from Japan, China, Indonesia, Thailand, Malaysia and the Philippines calling for a more moderate solution for ships certified for less than 2,000 passengers. Although this would still entail a significant increase of the requirements under SOLAS2009, the EU lobby did not take kindly to us maintaining our firm position. However, our submission was supported by an unprecedented number of non-EU nations – the Bahamas and Panama, for example – many of whom perhaps feel that the IMO agenda has been too Euro-centric for too long. Furthermore, some EU member states remained silent.

The MSC chairman decided to defer the issue until the next meeting in June, with a call that stakeholders try to reach an agreement out of session. This process has already started. After the postponement, Interferry met with representatives from Japan and the EU under the coordination of the US to explore a compromise that will work for typical sizes of ro-pax vessels. Pending feedback from our fellow participants, we expect another informal sit-down in March while attending a meeting of the IMO Ship Systems & Equipment (SSE) sub-committee.

Separately, the official agenda for the SSE meeting will mark another successful outcome for Interferry's input on safety issues. Last March, based on a questionnaire sent to members, we produced operational best practice guidance for fire safety on ro-ro vehicle decks. Covering fire prevention, detection and suppression, the responses highlighted the need for continuous monitoring, rapid response and optimum efficiency of deluge drencher systems. Two months later, the findings were submitted to MSC96 and well received, but no further action was taken that that time because there was no established work output for fire safety.

At November's MSC meeting, the EU countries suggest-

ed that such a schedule should be established – and with full support from other member states, it was agreed to make a start by developing a work plan at SSE in March. It is expected that the IMO will conclude this work by 2019, with adopted amendments entering force from 2024.

Interferry's influence is also being increasingly felt on environmental issues. In October, at the 70th session of the IMO's Marine Environment Protection Committee, ferry stakeholders received the green light to pursue more workable solutions on two major concerns – the Energy Efficiency Design Index (EEDI) and the Ballast Water Management Convention (BWMC).

Initially, we were satisfied with the outcome of the EEDI debate in 2012 because it seemed to take account of the ferry sector's diversity. When implemented last year, however, it became clear that something was wrong with the calculation. Shipowners and designers reported that new and highly efficient designs scored badly in this primarily statistical framework, which needs urgent resolution to prevent a halt to much-needed newbuilding programs.

MEPC70 accepted Interferry's call for revised ro-ro and ro-pax reference lines as legitimate, particularly as we had support from many flag administrations – notably Denmark, Sweden, Finland, Norway, the Bahamas, Netherlands, Ireland, Spain and South Korea – as well as BIMCO and the International Chamber of Shipping. Some even suggested that ferries should be exempt from the EEDI, but in general it was felt that we should keep working towards a solution enabling newbuilds to meet the mandatory requirements. Stakeholders were then invited to produce additional analyses and recommendations ahead of May's MEPC71 deadline for adjustments to the final formula.

The BWMC comes into force in September 2017, some 13 years after being adopted. Interferry has never accepted that a deep-sea problem – the transfer of invasive species between continents – has any relevance on short-sea operations. Alongside Denmark, we have argued for a more realistic 'exemptions' approach allowing coastal states to decide that ships operating solely within a limited geographical area do not need to make expensive investments in unnecessary equipment. At MEPC70, Interferry and Denmark presented the Same Risk Area (SRA) concept – deferred from the previous meeting – and gained support from many states. As with EEDI, stakeholders were invited to provide draft amendments for the MEPC71 session next May that harmonize the BWMC and SRA concepts.

In short, a lot of work lies ahead on safety and environmental issues, but it will all be worthwhile if we succeed in minimizing the impact on our industry of indisputably worthwhile aims.

***Johan Roos**, Regulatory affairs director at the trade association Interferry. Interferry represents and advocates for the ferry industry on a worldwide basis.*

INTERFERRY
Representing the Ferry Industry World-Wide

# Washington State Ferries:
## Embarking on a Journey to Blended Learning

*Today's maritime environment places unique challenges upon operators when it comes to operational training and safety.*

**By Murray Goldberg and Joy Findley**


Findley


Goldberg

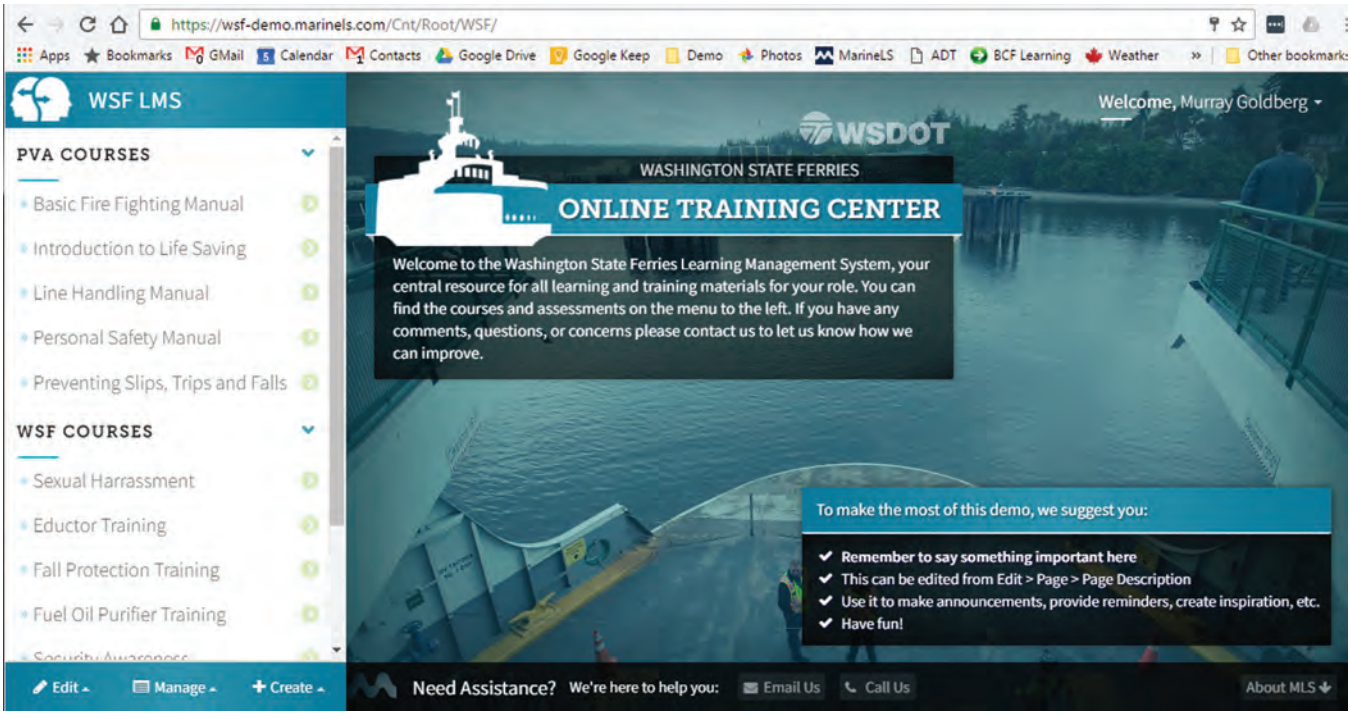
The number of issues facing a typical marine organization today can be overwhelming. These include:

- *Increasingly sophisticated vessels, equipment and technology*
- *Limited standardization when it comes to training content, tools and practices*
- *Evolving regulations*
- *Hiring, retaining and developing existing employees*

Operators are struggling when it comes to the management and delivery of operational training. Past practices such as in-class training and job shadowing are becoming progressively less efficient and effective as training demands and sophistication grow. As a result, a large number of operators are turning to new approaches to help.

One such ferry operator – the Washington State Ferries (WSF) – is exploring the use of blended learning (the combination of eLearning and face-to-face training) to help alleviate their training challenges. Maintaining a fleet of 22 vessels and serving over 23 million passengers a year, WSF is the largest ferry system in the United States and the fourth largest in the world. Serving 10 routes and 20 terminals, it's easy to see how training can become a massive undertaking given the operation's size and complexity. Recognizing that WSF personnel are the key to safety and that traditional training practices are progressively less able to cope with today's demands, WSF is looking to modernize and standardize their already robust training programs.

The journey towards standardized, efficient and highly effective blended learning necessarily addresses operational challenges, measurable goals and a unique approach to the situation. Leveraging the Washington State Ferry blueprint, other organizations can take away valuable insights to help improve their own approach to training and safety.



## Facing Challenges

Washington State Ferries faces the same set of challenges being faced by nearly all vessel operators. As early adaptors on many technologies, the firm has decided that it is time to address the diminishing ability of traditional training techniques to address those challenges. The challenges come in many forms.

Costs, as a first example, are always a challenge. Existing training practices are expensive, requiring access to workforce-base SME training resources and significant expenditures for employee travel to attend Instructor Lead Training (ILT) courses. Since this form of traditional training does not scale well, each time a new training requirement emerges, the resulting training costs increase.

Complicating the traditional training model at WSF is their complex fleet and employee organization. WSF has relationships with as many as 12 employee unions, producing varying employee work schedules and shifts. A vast and diverse employee base of 1,800 crew members manage 450 departures each day, emanating from 20 terminals on 10 unique routes. Moreover, a changing employee demographic creates other challenges. Last year alone, 60 new deckhands were hired. That's because the existing employee base is aging. Of the system's 79 captains, about 62 percent are 55 or older, which might someday cause a retirement wave.

So how does an organization employing traditional training techniques concurrently address the needs of the young and tech-capable new hires, efficiently develop existing employees into positions of greater responsibility, and ensure that the knowledge and experience of the valued senior officers is able to make the cross-generational jump to the new hires? It is with these challenges in mind that Washington State Ferries set out to make the transition to standardized, measurable, effective and efficient training practices.

## Making Goals

The overarching goal is to 'modernize the WSF vocational training program through blended learning.' The end result being sought is an occupational training program aligned to industry competencies, requirements and industry-developed certification tests. This means many things for WSF, but key to the plan is the establishment of a comprehensive, integrated, formalized, repeatable approach to instructional design.

WSF recognized, early on, that deep attention to instructional design is a requirement for success. This simply means that every aspect of the training program is all carefully considered, including:

- *what is taught in each course*
- *how courses fit together*
- *which courses are assigned to which employees*
- *how employees are motivated to learn*
- *how employees are assessed*
- *how learning is tracked*
- *how course effectiveness is evaluated*

In addition to these instructional goals, there are of course other requirements. First and foremost, it must be efficient and sustainable. Training costs can easily become difficult to control. Modern training delivery methods (blended learning) help control them.

Secondly, the program must be standardized and effective. It is not acceptable that different training outcomes and experiences can result based on variables such as the trainer at hand, the day of the week, or the vessel a trainee is on. The only way to achieve consistently safe and consistent operations is to create a standardized experience using consistent, company-vetted resources and practices. Again, learning technologies are beneficial here.

Third, the program results must be measurable and measured. It is not possible to declare the training program a success unless actual measurements show that to be the case. And the outcomes of those measurements will serve as inputs to a program of continuous improvement in training – another requirement of any successful training implementation. This, too, is supported by modern training technologies used in the deployment of blended learning.

Ultimately, the achievement of the above goals in many cases is a daunting task for any organization. At WSF, the key to achieving each of these goals is a strong overall vision backed by an incremental and achievable plan. Initial, relatively modest short-term goals are identified and implemented. The success of these initial small initiatives will then provide the organizational will and resources required for the next, larger, phase of progress. They also provide the knowledge that will ensure the success of the phase that follows. In this way, each progressively larger and more encompassing phase is informed and supported by the ones that came before. This approach is the key both to making a start and ensuring long term success.

With that in mind, WSF has devised an approach that they have now embarked on to transform their training practices.

## The Washington State Ferries Approach

One of the most powerful components of this program will be a job and task analysis which results in a program incorporating structured on the job training. The job and task analysis is a foundation which allows WSF to achieve the critical instructional design goals of exactly what needs to be taught, to whom, and how the components of training fit together. Without this foundational information it is easy to either under-train and to over-train. A careful job and task analysis provides role clarity and procedural standardization. With this, WSF expects to develop an occupational training program aligned to industry competency requirements and industry-developed certification tests.

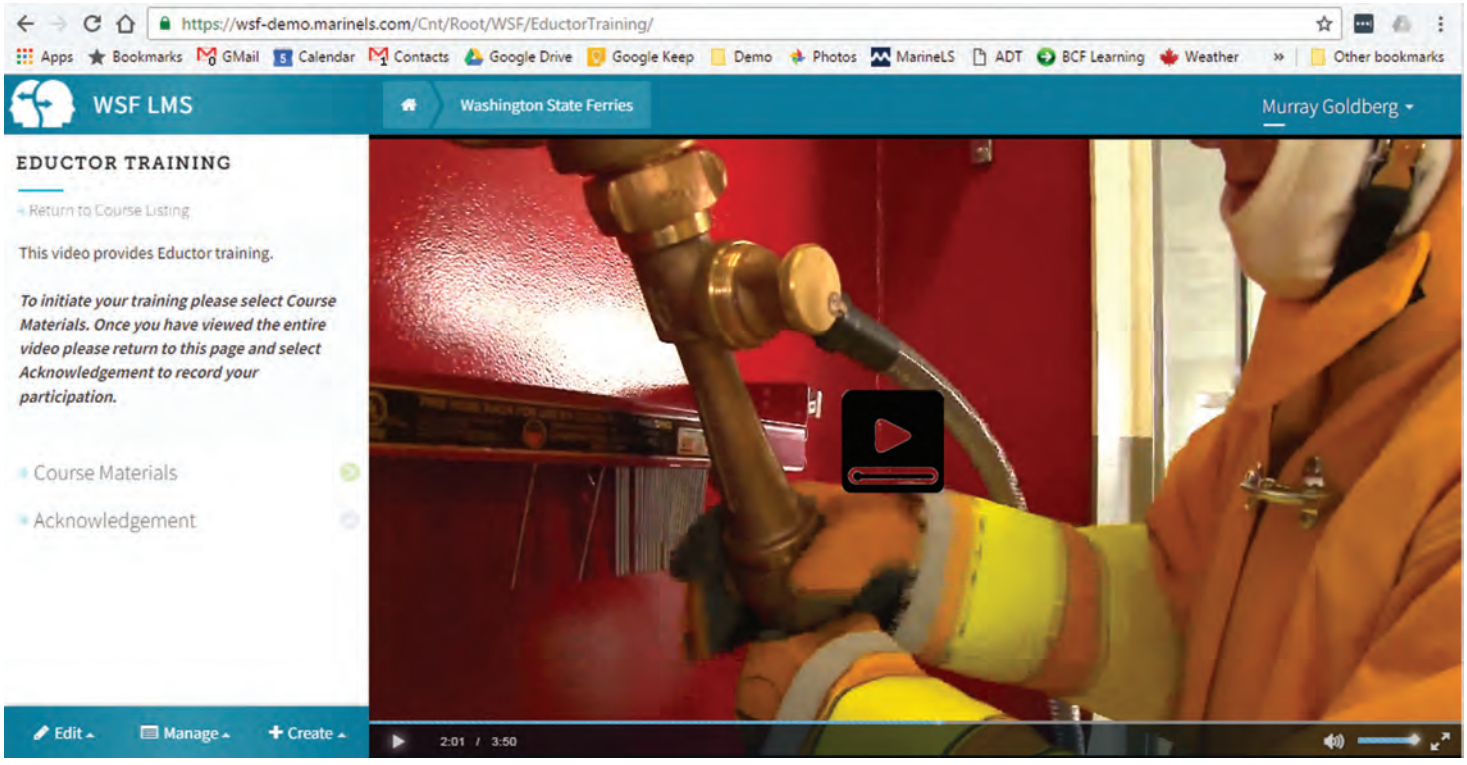
An important part of the job and task analysis is the establishment of occupational job-specific profiles for the duties and tasks workers perform in the workplace. The occupational profile will contain additional information about so called "enablers." Enablers are the required knowledge, skills, personal attributes and worker behaviors for a role. Additionally, these include the best practices, tools and equipment an employee needs to know and apply when successfully performing their work tasks.

Once the job and task analysis is available, the next step is to establish a standard process and toolset for WSF individualized employee training and assessment. A major component of this includes learning and assessment plans tailored to employee's role-based and individual needs. Learners will receive personalized, data-driven course recommendations based on their job role, skill set, and identified job skill gaps.

The WSF plans extend throughout the fleet and include all roles from the deck plates up. This includes management development. Findley plans an internal WSF behavioral development program focused on personal leadership, professional writing and interpersonal communications at the early career stages. As people progress into the management areas there will be a focus on people management and task leadership. Standardization of a manager curriculum will include areas such as people and client management, delegation, coaching, feedback and meeting skills. As senior managers, the focus will move to influencing, negotiation, questioning skills and making a personal impact.

The WSF approach includes a set of enabling processes and tools. In terms of process, one key aspect is the establishment of a fleet trainer cohort to provide structured on-the-job training. This process will employ a one-on-one, mentor/learner model where appropriate. It will focus closely on the "how" and "what" of the job in a way that everyone – managers, mentors and learners – can objectively observe and measure.

In terms of tools, underlying the entire WSF approach is the principle of blended learning. Blended learning, deployed with great success at other vessel operators in-



cluding a wide variety of ferry operators, combines eLearning with various form of in-person learning such as classes and on-the-job training. Studies and experience have shown that it achieves significantly improved learning outcomes. It is also very efficient - bringing many aspects of the learning to the learner rather than having the learner come to the learning.

One typical approach to blended learning is having learners initially complete some self-study, and then move on to in-person training. The self-study is done on-line using company-vetted best-practice resources. This ensures that standardized knowledge is delivered and can be used in (and relied upon) when the trainee moves to the in-person phase. The in-person phase then carries on where the self-study left off, providing examples and hands-on experience to reinforce the knowledge learned in the self-study and teach the skills that build on that knowledge. The training and assessments in a blended learning program are delivered using a learning management system (LMS) - enterprise training delivery software. In addition to making the delivery of training and assessments efficient, an LMS also provides many of the measurements and leading indicators that are required to determine the success of the training program, support continuous improvement and head off potential performance or safety issues before they arise.

The goal of the LMS is to deliver an online training program that teaches and demonstrates the behaviors, policies and procedures around job requirements. It will provide an exciting, engaging and memorable vehicle for educating the WSF population on-board and on shore.

## Conclusion

Washington State Ferries, like many vessel operators, is embarking on a major initiative to transform their training practices and outcomes to meet the changing needs of a modern vessel operator. While they are not the first vessel operator to undertake such a program, the move to blended learning in maritime operations is a fairly recent phenomenon. And, as more organizations are willing to share experiences and plans, the entire industry benefits through safer operations, better performance and more efficient and effective training.

***Joy Findley*** *is the Training and Credential Manager at WSDOT's Ferries Division. She holds a Master of Science, Education in the area of e-Learning from California State University and has twenty years' professional experience as an Educator, Instructional Designer and Training Manager.*

***Murray Goldberg*** *is the Founder and CEO of Marine Learning Systems Inc. He began his eLearning career as a tenured faculty member conducting research on the effectiveness of web-based learning in the department of Computer Science at the University of British Columbia. Most recently, while acting as an eLearning consultant with British Columbia Ferry Services Inc, Murray developed a learning management system specifically suited to maritime and other industrial training contexts.*

# Ferry Safety in the Philippines

*A work in progress produces measurable results while at the same time developing an enviable intermodal model.*

**By Len Roueche**


Roueche

When ferries and the Philippines are mentioned in the same sentence, most people, at least in the shipping industry, think about disasters. According to Silent Garden, a Philippine travel website, "There are ferries in very good condition and there are ships where only the paint prevents the rust from breaking apart." The Philippines has the dubious distinction of having the world's worst peacetime shipping disaster. In December 1987, the ferry MV Doña Paz collided with an oil tanker near Manila. The resulting explosion and fire left more than 4,000 dead.

As more recent experience shows, the Doña Paz was not a one-off incident. The World Wide Ferry Safety Association (WFSA) has compiled a database of major ferry accidents worldwide since 2002. The Philippines has consistently been near the top of the accident and fatality list along with Bangladesh and Indonesia.

Between 2002 and 2015, there were at least 22 major ferry accidents in the Philippines with a total of more than 1,700 people dead and missing. Nothing was as bad as the Doña Paz but there were four accidents that experienced fatalities of over 100. The worst exceeded 800. Despite this horrific history, there are signs of change in the Philippines. From 2002 until 2009 there were at least 18 accidents with over 1,500 fatalities. Since 2010 there have been 5 accidents with 193 fatalities. What has lead to this change and is it sustainable?

## Unique Geography, Robust Transport Needs

The Philippines has a population of over 100 million people and consists of more than 7,000 islands. The ferry industry has evolved into a large and diverse sector to serve the needs of the country. At present, there are over 30 ferry companies with a total fleet of 200 vessels carrying over 60 million passengers per year. These ships range in size from large overnight ferries with cabin accommodation and car decks capable of taking large loads of cars, buses and heavy commercial vehicles. At the other end of the scale, are small passenger-only vessels.

As a whole, the Philippine ferry fleet tends to consist of old vessels bought secondhand from other Asian countries. In some cases, these ferries were designed to operate in protected waterways such as the Japanese Inland Sea. The vessels are often not fit for service in the more exposed waters of the Philippine archipelago.

## Hands Across the Water

Three organizations have been involved in helping developing countries improve their safety record for ferries: the International Maritime Organization (IMO), Interferry (shipping association representing the world-wide ferry industry) and the World Wide Ferry Safety Association – a US-based, not-for-profit organization. These groups have been involved over the past decade in pilot programs, ferry safety forums and conferences involving in particular Bangladesh, Indonesia, the Philippines, China and Fiji. While the events have been useful, actual improvement in the number of accidents and fatalities has been difficult to document. Nevertheless, there may be a glimmer of hope from the Philippines.

In 2010, the Interferry Conference was held in New York City. Chet Pastrana from the Philippines was one of the speakers in a session on "Developments in Emerging Markets." His company, Archipelago Philippine Ferries, was formed in 2002 and in 2004 it became part of the government's new initiative – Strong Republic Nautical Highway – a plan to integrate the islands of the archipelago through a seamless Road & RoRo system of land and sea transport. Instead of competing directly with the established industry players, Pastrana focused on the secondary and tertiary routes known as the Missionary Routes. While the challenges were big in these regions, he believed they had the potential for the fastest growth and the biggest impact.

By 2010, after only eight years in business, Archipelago Philippine Ferries had carried over 10 million passengers on its "marginal" routes using a fleet of nine different ships from Europe and Japan, none of which were designed for the uniqueness of the Philippine market and operating conditions. To take the business to the next level

would require a vessel design that was safe, practical, suitable, efficient and commercially viable. After much research Pastrana discovered the mid-speed, steel hull, RoPax catamaran designed by Sea Transport Solutions of Australia.

## New Policies, Better Hulls

Jump ahead six years to the present day and Archipelago Philippine Ferries now has 10 of the newly built RoPax Cats which are now branded as "Fast Cats." They are not only the first purpose-built ferries for the Philippines, but they are internationally classed and adhere to international safety rules and regulations. Archipelago Philippine Ferries has come a long way in the ferry business in a relatively short period. Last year Chet was elected President of Interferry, a one-year responsibility that includes hosting the annual conference which took place in October in Manila with over 320 delegates from around the world.

Chet had an update for the delegates: a second lot of 10 RoPax Cats were under construction and a third lot had been ordered. He was also looking into opportunities to expand operations to the international market with potential links to Malaysia, Indonesia and perhaps other Southeast Asian countries. He also explained that his company was becoming a transport and tourism business and not just a ferry operator. He has partnered with two bus companies, JAM and Philtranco, to provide a full transportation service including a chain of budget hotels at strategic locations.

And the story continues. Archipelago Philippine Ferries is getting involved in a number of other projects related to the ferry business. The Pasig River runs through the centre of Metro Manila and is being used once again as the right of way for a commuter ferry service. But the government has been slow to develop the service so it might be time to bring in private sector partners.

Training for crew members on ferries has often been a problem in developing countries. Hence, a new e-training program is being developed by a group including World Wide Ferry Safety Association, Damen Shipyards of the Netherlands, Marine Learning Systems of Canada, and Archipelago Philippine Ferries.

In the Philippines, there is a traditional boat – the banca – which has a wooden hull and an outrigger. They are used for many purposes; an estimated 2,700 of them serve as unofficial ferries carrying up to 50 passengers and sometimes more. A plan is being developed to replace them with a safer design.

The Philippine people face many challenges: a population spread out over many islands; natural disasters such as typhoons, earthquakes, volcanic eruptions and floods; and severe poverty, especially in the outlying areas.

On the other side of the ledger: the Philippine people are friendly and industrious, many of them are well-trained seaman who make up over 30% of the crews on ships world-wide and most speak the global language of business, English; and a recent report from the World Bank (East Asia Pacific Economic Update) projects economic growth to reach 6.4% for 2016, in second place for the region, just behind China. The Philippine people have the ability to conquer ferry safety and become a role model for other developing nations facing similar challenges. Watch this space as they do.

**Image credit: Philippine Ferries Corporation*

***Len Roueche** is an Advisor to the Board at Förde Reederei Seetouristik (FRS). Additionally, he is the former CEO of Interferry, a shipping association representing the ferry industry worldwide.*

# Out in Front on Ballast Water Treatment

**In the choppy wake of the ratification of the IMO Ballast Water Treatment convention, the U.S. Coast Guard issues it first US type-approval certificate. Installations are already underway on this side of the pond.**

*By Joseph Keefe*

*Optimarin's USCG Type Approved BWT system*

When the U.S. Coast Guard issued the long-awaited and much anticipated first U.S. type-approval certificate for a ballast water management system on December 2nd of last year, the news lit a fire under a maritime industry that had so far seen tepid ballast water treatment (BWT) system sales and an even cooler approach from vessel owners and operators who were, until now, reluctant to install expensive equipment that had no guarantee of being ultimately accepted as valid. Separately, and as *MarineNews* went to press, both Alfa Laval and OceanSaver were also reporting U.S. Coast Guard approvals. With other approvals expected in the near-term, there are arguably no more excuses for vessel owners to delay, any longer.

All of that said; there are no silver bullets in the BWT game. What works for one size vessel in certain trades, won't work for another type of vessel in different waters, plying another grade of cargo. That's because a BWT system's energy consumption, throughput capacity, physical footprint and a dozen other variables all come into play when selecting the right system for a particular vessel. For Optimarin, the Coast Guard Marine Safety Center issued the certificate after its application for U.S. type approval was determined to meet the requirements of the Coast Guard's type approval requirements contained in 46 C.F.R. § 162.060.

In a prepared statement, Rear Adm. Paul Thomas, assistant commandant for prevention policy said, "While this

is a significant milestone, it is the first of multiple system approvals that are needed to mitigate the threat of harmful aquatic invasive species," said. "One size does not fit all, so we will continue to evaluate other systems submitted by multiple manufactures with the intent to provide options that meet shipping's varying needs." In other words, Optimarin may be first, but there will be other approvals.

## Strong Out of the Gate

Norwegian ballast water treatment (BWT) specialist Optimarin naturally celebrated becoming the first system supplier to gain full USCG type approval. The development, which adds to their previously achieved IMO approval and certification from a host of classification societies, means Optimarin's UV-based technology has, for now, jumped to the head of the pack. Optimarin CEO Tore Andersen said in December, "This is a huge day for our company, and our customers. The USCG has the world's most stringent testing standards, meaning that once a system has approval it is assured of total global compliance, now and into the future." Optimarin's Ballast System (OBS) utilizes a combination of filtration and 35kW UV lamps to treat ballast water without the need for chemicals. DNV GL tested the system to USCG standards for fresh, brackish and marine water at the NIVA test facility in Norway.

Optimarin says that it installed the world's first commercial BWT system in 2000, and also reports its best year in business in 2016 (unconfirmed reports of a 200% increase in business), taking orders from a wide range of shipowners, operators and yards. These include contracts with Atlantis Tankers, Vard Group, Saga Shipholding, Fincantieri Bay Shipbuilding, Fisherman's Finest, Solvang ASA, and Carisbrooke, amongst others. Optimarin's technology is certified by a comprehensive range of classification organizations, including DNV GL, Lloyd's, Bureau Veritas, MLIT Japan, and American Bureau of Shipping.

More than 60 OBS units have been retrofitted, fitted in conjunction with engineering partners Goltens and Zeppelin Power Systems. And, of particular note, Optimarin has secured a two-system contract with Fincantieri Bay Shipbuilding (FBS) in Sturgeon Bay, Wisconsin. The agreement, which will see two 500 m³/hour capacity Optimarin Ballast Systems (OBS) fitted on a newbuild single clean products barge, underlined the firm's segment position, even ahead of its USCG approval. Bob Kunkel, President of Alternative Marine Technologies (AMTECH), confirmed that his firm is controlling project management and construction supervision, with class and inspections provided by ABS and the U.S. Coast Guard.

## The Typical BWT Installation: no such thing

According to Kunkel, the FBS project will deliver in the fourth quarter of 2017, but most other details about the customer and the barge itself were otherwise being closely held. He told MarineNews in December, "The system will give the barge a combined 1,000 m³/hour of ballast handling capacity. Previously, we have installed 13 Techcross units and this is the first Optimarin."

For its part, Optimarin acknowledged that the project was an important one. "The ability to trade in U.S. waters is key to global shipowners who want flexibility for their fleets," said Andersen, adding, "Our system is technically proven, with almost 300 units installed worldwide, and number one for compliance. That is a key selling point for owners and yards that want their vessels to meet all regulatory demands now and into the future." The two new systems are being installed on a 185,000 barrel capacity barge.

Over time, AMTECH contracted as Construction Supervision for several owners, and has selected several types of ballast water treatment systems – all of which were de-

*"The ability to trade in U.S. waters is key to global shipowners who want flexibility for their fleets. Our system is technically proven, with almost 300 units installed worldwide, and number one for compliance. That is a key selling point for owners and yards that want their vessels to meet all regulatory demands now and into the future."*

**– Tore Andersen, Optimarin CEO**

pendent on the owners trading patterns, ship design, availability of power and size and location of the unit. Kunkel explained further, "We have found that each type of vessel demands a specific analysis to pair the system with operating tempos and port locations. On this particular project – an ATB Product unit trading in a specific U.S. domestic route – we found the Optimarin system to be the best choice." Kunkel added, "It was our opinion that Optimarin was the one manufacturer that was closest to USCG approval and obviously with their latest announcement of receiving same, we were correct."

But, according to Kunkel, the right system goes beyond selecting a system by price or a recognizable manufacturer or agent. The owner needs to look at his ballast system arrangement, his operation tempo affecting his ballast discharge time, the generator power required to operate the unit and the actual "type" of system purchased. This will, he said, require input from your naval architect and designer, regardless if the installation is new construction or a retrofit. Underscoring that point, he said, "In several cases, we installed additional ballast pumps to address the operational parameters listed above. But, no one system solves all of the problems associated with this regulatory requirement and with that said; the truth is at some point all of them will."

For the owner/operator who wants to install now, but is afraid to make a mistake, Kunkel had specific advice: "Work with your selected manufacturer to get off that fence and provide a guarantee that the system will meet or exceed IMO and USCG approvals. It is not an unreasonable request. If that agreement can't be reached, apply for a USCG waiver and wait for the unit you believe is the best choice to receive that approval and join the many owners who have decided to retrofit units at their next scheduled drydocking."

It is also important to understand the changes to vessel piping, valves and generator power required for the specific unit. "We see many new building specifications that claim to be 'designed and built for future installation of BWTS.' That is a difficult claim if you don't know which system has been selected. There are many reputable manufacturers and at some point in time units will be modified and improved to meet the regulations," said Kunkel.

Another popular assumption – and not always the correct one – involves the thinking that a retrofit will be more

*"One size does not fit all, so we will continue to evaluate other systems submitted by multiple manufactures with the intent to provide options that meet shipping's varying needs."*

**– Rear Adm. Paul Thomas, assistant commandant for prevention policy**

difficult to install than a BWT system at newbuilding. To that end, Kunkel insists, "Both new and retrofit can be difficult decisions. For example, the decision to install the Techcross units in South Korea at Hyundai Mipo Dockyard and STX prior to any regulatory approvals was based upon the amount of work required to complete a retrofit at a later date. Handling the install at new construction allowed us to fit the unit in the machinery spaces and move away from a deckhouse skid installation. Most of the units being sold will eventually meet both IMO and USCG approvals. You need to operate the units prior to regulatory demands and get that feedback to your manufacturer. We replaced components and worked towards a better operation in those 13 units out of Hyundai long before the vessel was actually required to place them into operation to meet regulatory issues for the IMO."

## Do your Homework, Then Get to Work

Select your unit before you decide how the retrofit will be completed at drydock. Some systems require extended power requirements that may not be available in the current vessel configuration. Others may require extended piping modifications in tank spaces that do not have affordable space to make that modification. The location of the system also becomes important. Whether the unit is ultimately installed below deck, skid mounted on deck or in the machinery casing will be dependent on the size of the system and how it actually "kills" the organisms.

At the end of the day, though, there is no 'silver bullet.' "Optimarin in our opinion was the best choice for this project, vessel design and contract requirements. We considered waivers to remove the contract timing from the equation," explained Kunkel, adding, "Optimarin and the owner's environmental ethics helped us to move away from a waiver and decide to install before USCG approvals were received. That said; this unit may not be the best selection for other owners or vessels. You need to do the research and work with the manufacturer to make that right decision. Optimarin was ready to do that work." No doubt others will do the exact same thing.

The IMO, U.S. Coast Guard and myriad other "certifying bodies" have given their edicts on BWT. Now, it is your turn. Let's get to work.

# North American Ferries: *Faster, Greener² & Safer*

**Domestic ferries adjust their business models to met regulatory pressures and exceed environmental standards with an eye towards improved service. And, not a minute too soon.**

*By Barry Parker*


Photo Courtesy Seaspan

In North America, stalwarts in the ferry business continue to shorten journey times compared to surface alternatives, while at the same time, bring accessibility to barrier and coastal islands that would otherwise be impossible to reach. Established stakeholders continually fine-tune their operations in a market where missions to provide service (and maintain fares at affordable levels) must be balanced against spiraling costs, intrusive regulatory pressures and the need to 'go green.' In particular, public ferry operators have struggled to gain funding necessary for capital expenditures.

Nevertheless, with societal concerns about sustainability and the omnipresent cudgel of environmental regulation aimed at maritime businesses, ferry operators in the North American Emissions Control Area (ECA) have begun their transition away from traditional diesel fuel, notably to cleaner burning liquefied natural gas (LNG) with its substantial reductions in sulfur and nitrogen emissions compared to diesel fuel. The continent's two largest ferry operators, both in the Pacific Northwest, have noted the favorable cost comparisons and compelling business cases for gas fueling when compared with conventional diesel fuel. The ripple impact on the domestic waterfront's bottom line has not gone unnoticed.

## Canada's Cup is Full

Privately owned BC Ferries serves 24 routes along the coast of British Columbia under an exclusive contract with the Province, leveraging a fleet of 34 boats. The operator, which carried more than 20 million passengers and 8 million vehicles in 2016, will be fitting two existing vessels to run on LNG (supplemented by diesel propulsion), and has ordered three gas powered newbuilds. In the conversion project, two of its 2,100 passenger/ 410 car vessels – Spirit of British Columbia and Spirit of Vancouver Island – will each see the installation of four Wärtsilä 34DF engines, in sequence, starting in late 2017. The list of upgrade items in the C$140 million contract will also include the controllable pitch propeller and tunnel thrusters, as well as refurbishment of the engine rooms' automation and electrical systems. Under a C$165 million contract, the same Polish yard delivered the first of three dual fuelled newbuilds, Salish Orca, in late November; the vessel is scheduled to start service on the Powell River (on the mainland) / Comox (Vancouver Island) route in the spring of 2017, followed closely by deliveries of two sisters. The delivery of the 600 passenger/145 car vessel (fitted with Wärtsilä 20DF engines, as well as Wärtsilä's LNGPac fuel systems) came a few weeks after BC Ferries announced a company-wide "SeaForward" effort aimed at sustainability.

The gas for BC Ferries LNG fueled vessels will be supplied by the utility Fortis BC, which also contributed C$10 million and C$6 million towards the two BC Ferries projects. With support in the form of incentives from the Province, Fortis BC will also supply the gas (and is contributing towards construction costs) for two new dual fueled newbuilds that will haul cargo between Vancouver Island and the mainland for another BC operator, Seaspan Ferries. The first vessel, with a capacity of 60 large truck trailers, has already delivered to its new owner, from the Sedef shipyard in Turkey, with the second coming in early 2017.

Seaspan Ferries' corporate parent, Seaspan, owns a shipyard in Vancouver, which prompted its CEO, Jonathan Whitworth, to ask rhetorically (at a briefing attended by *MarineNews*), "Why would a company that owns a shipyard not build them here?" He quickly answered his own


MV Spirit of Vancouver Island

Photo: BC Ferries

question, saying, "Our plate is full," referring to the yard's commitment to deliver a series of non-combat vessels for the Canadian government. Mr. Whitworth described a multi-year process, with a design team from Vard (part of the Fincantieri Group) in creating the exact specifications, by saying, "Unlike our present fleet, with a capacity for 30 to 40 trailers, these new ferries will have a capacity for 60 trailers, at a speed in excess of 16 knots."

The vessels will be powered by Wartsila 9L34DF dual fuel engines fed though the Wartsila LNGPac storage and containment system. The two Seaspan newbuilds are also notable for another innovation: they will utilize lithium battery power, provided by Corvus Energy, a Canadian company (backed by BW Shipping and Statoil), which will be used for in-port maneuvers. Whitworth adds, "This will be the first hybrid ship running in North America."

## Washington State Ferries

The largest ferry operator in the United States is Washington State Ferries (WSF), which serves the Seattle-Tacoma area, the Olympic Peninsula and islands around Puget Sound. It is a part of the state's Department of Transportation. At one time, planners envisioned a network of bridges all over the Puget Sound region. Instead, the ferry network is the de-facto highway. WSF, which operates 24 ferries transporting more than 23 million passengers annually, has an older fleet, one which is gradually being renewed. Its oldest vessels, for example, built in the 1950's, are being replaced by four "Olympic class" newbuilds from Vigor's Washington State Shipyard, each capable of transporting 1,500 passengers and 144 automobiles. Two, the Tokitae (2014) and Samish (2015) are already in service, with the other two, Chimacumand and Squamish, set to enter service in 2017 and 2018. Since substantial budget cuts were enacted in the late 1990's, WSF has struggled to find stable long term funding sources, carefully balancing fare policies with requisite capital and operating expenditures. That said; the overall budget for the four new vessels is $515 million.

WSF has spent several years looking at a 're-powering' project, one involving six late 1970's vintage boats (1,200 passenger capacity), operating with 12V-228 GE Diesel engines, which would be retrofitted with pure LNG or dual fuel capability, keeping in step with regulations for eventual Tier 4 compliance. As of mid December, WS-

DOT was in the process of evaluating responses to proposals that had been received prior to the end June deadline.

### *Other Stakeholders; anything but 'also-rans'*

Separately, myriad smaller operators also ply the waters of the Pacific Rim. The easternmost terminus of State run Alaska Marine Highway System (AMHS), operator of an 11 vessel fleet, is actually in the Lower 48, at Bellingham, WA. Its routes extend some 3,500 miles, linking communities north through the Kenai Peninsula and Prince William Sound and then west along the Aleutians to Dutch Harbor. In 2015, its passenger count touched 300,000. Currently, two new vessels (300 PAX/53 automobiles, each) are under construction at Vigor's yard in Ketchikan, with delivery expected in 2018.

The new boats are designed with ro-ro style bow and stern doors, which will speed up loading and discharging of cars (which, in turn, assists in control of labor costs) as compared to the AMHS existing side-doored fleet. Plans are also in the works for replacing the 1964 built M/V Tustumena. While a diesel propulsion design (from Glosten) has been developed, the timing and magnitude of available funding is still unclear.

The San Francisco Bay Ferry (part of the Water Emergency Transportation Authority, or WETA, a regional organization), is heavily skewed toward providing high speed commuter transportation with its fleet of 12 vessels, and is on a rapid expansion curve. Since its formation ten years ago, its view of ferries has shifted from "Plan B" for disruptions in surface modes, along with emergency response and evacuations, to a different focus which points to "… a system that seamlessly connects cities in the greater Bay Area with San Francisco, using fast, environmentally responsible vessels … and new docking facilities and terminals…"

The 20 year target is for 40,000 boardings per day and 10 million passengers annually, or roughly four times the level achieved in 2015. It's an ambitious plan. Most recently, in 2015, WETA ordered two 400-passenger, 27-knot, passenger-only catamarans from Kvichak Marine Industries (now merged into Vigor), with $32 million slated for design and construction. Delivery is set for 2017 for the Incat Crowther all-aluminum design. The propulsion package utilizes MTU 12V4000 M64+ engines (EPA Tier 3 compliant, with Tier 4 achieved with after-treatment of exhaust) rated 1950 BHP @ 1830 RPM- tied to ZF7600 reduction gears.

In September, 2016, Dakota Creek Industries (Anacortes, Washington) received a $62 million award to build three high speed vessels with 445 passenger capacity. A creative approach to financing buttresses these order. In describing its 2015 order, WETA said in a prepared statement, "The Vessel Replacement project is funded through a combination of Federal Transit Administration grant funds, Regional Measure 2 bridge tolls, State Proposition 1B grant funds, and Alameda County Measure B Transportation Sales Tax."

All the way across the country on the East Coast, New York City's Staten Island Ferry, serving 22 million passengers each year, continues to replace older vessels. The city's Department of Transportation received bids in September to construct three new doubled ended "Ollis" class ferries, with 4,500 passenger capacity. Plans developed by Elliot Bay Design Group call for Tier 4 engines and Voith Schneider (cycloidal) propulsion. A NYC posting indicates that responses ranged from Eastern Shipbuilding's $250.9 million, up to Dakota Creek's offer at $333.1 million, with responses from Fincantieri, VT Halter and Gulf Island Shipyard in between. The vessels (to be financed with a mix of City and Federal funding) will be delivered in 2019 and 2020, replacing a trio of boats of 1980's vintage and earlier.

Also in New York, the city's Department of Transporta-


*"Why would a company that owns a shipyard not build them here? [because] Our plate is full."*

– Jonathan Whitworth, SeaSpan CEO

tion (which oversees ferry activities) also has plans to retrofit one of its "Austin class" boats (1,280 passengers) for LNG operation. In 2014,separate RFPs for LNG propulsion and fuel storage were issued. Elsewhere, more conventional re-powering efforts are underway at the Delaware River and Bay Authority's fleet of passenger/vehicle boats running across Delaware Bay between Cape May (New Jersey) and Lewes (Delaware). Work on one vessel has been completed, with additional Federal funding (aimed at fuel efficiency and reduced emissions) slated to fund similar engine replacements of 1970's vintage engines with new EMD 8-710G7C-Tier 3 engines (with the potential for conversion to LNG fueling in the future) on two additional boats.

Not to be outdone, fleet replacement has also occurred in New England; during 2016, the Woods Hole, Martha's Vineyard and Nantucket Steamship Authority took delivery of a 400 passenger (and various combinations of cars and trucks) newbuild , powered by two MTU 4000 diesel engines. The new boat will serve the Woods Hole to Vineyard Haven run.

## New Trends & Visions for Old Problems

In many cases, old established transportation patterns cannot be shifted quickly, but that hasn't stopped ferry operators from trying. While established ferries continue to provide an alternative to inefficient or congested surface transport, start-ups and trials abound. In New York, for example, a city-backed ferry service will begin linking far flung outer boroughs with downtown; the first runs are set to begin in 2017 (see ***MarineNews*** December 2016 edition,

page 38, "Innovative boats, Unusual Cooperation."). Still further down the coast, along the Outer Banks, the North Carolina Department of Transportation has been looking to implement a new service that would provide a seasonal link between Hatteras Island and Ocracoke Island (with an aim of reducing automobile traffic on this small barrier isle).

In Tampa Bay, a six month pilot project linking Tampa and St. Petersburg, began in early November. The Cross Bay Ferry, a six month experiment, employs the 2013-built Provincetown IV, a twin-hull aluminum catamaran with a capacity of 149 passengers, able to make 29 knots. The boat is chartered from Bay State Cruises (based in Boston and running to Cape Cod during the summer months) to the operator of the Tampa Bay service – HMS Ferries. Supported by four municipalities that will each kick in $350,000, local officials are hopeful that the pilot project will yield a permanent commuter solution there.

Finally, in Glen Cove, an eastern suburb of New York City, a new ferry terminal, part of a waterfront redevelopment effort, sits idle while the city seeks an operator. Previous efforts to link this community with Wall Street, or midtown, have failed. When not subsidized, the ferries are often too expensive and runs are too infrequent, compared to existing alternatives such as driving or commuter trains. When parking and accessibility to commercial districts are issues, potential customers balk at changing their habits. Other efforts around New York, notably a New York Waterway link from Yonkers, on the Hudson River, into Manhattan, have also failed.

## Bottom Line: Potentially Fat

The hottest newbuilding market for ferries that the North American markets have seen in decades has come at a decidedly good time for local shipyards. Augmenting that boom is a raft of new initiatives designed to widen and improve the 'marine highway' even further. Add in the need to 'go green' in an increasingly intolerant regulatory climate, and the recipe for a sustained robust business climate is almost complete.

If even just a few of these visions become reality, certainly it will bode well for OEM's, engine manufacturers, shipbuilders and mariners alike. Get ready to roll up your sleeves. Your ship is about to come in; and there is plenty of room on board for those who want to make journey. All aboard!

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


# American Cruise Lines Takes the Luxury Route to River Dominance.

By Patricia Keefe

Massive, city-sized ocean liners and wide open seas are the first things most people think of when it comes to cruises, but a river runs through that market, too. In fact, the more accessible and intimate river cruising experience is heating up, according to Cruise Lines International Association's (CLIA) *"2016 State of the Cruise Industry Outlook,"* which found that the demand for river cruising is at an all-time high. Worldwide, as of 2015, CLIA counted 169 member river cruise vessels in service with 18 additional ships ordered for 2016, an increase of more than 10%.

Unlike ocean cruising, river excursions "allow passengers to experience multiple, memorable destinations in a short amount of time all while travelling the world's most famous, historic rivers," says CLIA. American passengers who aren't able to swing airfare and the time needed to take in a glamorous European river cruise, are finding that they can still experience the luxury travel provided on modern European river boats without ever leaving U.S. waters.

Savvy cruise operators like American Cruise Lines (ACL) of Guildford, Conn., the largest operator in the small ship U.S. cruise market, know they need to offer the same amenities found on European river boats – such as expansive suites, floor-to-ceiling views, private balconies and spacious lounges – along with quiet, steady sailing, to entice today's consumers. And there's the added incentive of fresh competition from Viking River Cruises, a European company that is trying to muscle its way into the U.S. river cruising market.

To meet "modern" customer expectations and to counter new competition, ACL continues to bet heavily on two attributes: "big" and "new" – as in new vessels, new technologies, and spanking new, spacious accommodations. To get that, it has successfully partnered for 30 years solely with sister company Chesapeake Shipbuilding Corp., for both construction and naval architect design services. Among the vessels designed and built over the years for ACL by Chesapeake, are the *American Eagle, American Spirit, American Glory, American Star* and *Independence.*

"By continually designing and building brand new ships, we are able to exceed the expectations of seasoned European river travelers right here in the U.S," says ACL

# Build New

vice president Timothy Beebe. Offering in-house design services is much more efficient, agrees Charles A. Robertson, president and CEO if Chesapeake Shipyards and ACL. "I dealt early on in my career with naval architecture firms and shipyards and there was always a lot of finger pointing between the two when schedules bogged down."

With a fleet of eight vessels, and three more currently under construction, American Cruise Lines says it is "committed to continuous growth through innovative shipbuilding programs that elevate the standard of cruising in America." It offers more than 35 itineraries, ranging from 5 to 22 days in length, traversing riverways and coastal waterways in the Pacific Northwest, Alaska, New England, the Southeast, and the Mississippi River.

ACL's current fleet consists of four paddlewheelers: *America* (new this year, accommodating 185 guests), *American Pride* (150), *Queen of the Mississippi* (150) and *Queen of the West* (the lone refurbish – 100); and four coastal cruise ships: *American Spirit* (100), *American Star* (100), *Independence* (stabilized and 100) and *American Constellation*, which will also feature stabilizers and support 170 passengers when it goes into service in mid-2017.

## If You Build It, They Will Come

You won't find tired, old or, with one exception, revamped vessels in the ACL fleet. The company has kept up a steady production run of new, increasingly larger vessels since its inception, adding a new ship about every year, according to ACL's Robertson. "Every ship will be more efficient, more environmentally sound than the last one. We want to continue that forever, so we'll be using technology not in existence today."

ACL's most recent new build schedule calls for three new vessels – two river boats and one modern steam boat – to be delivered over the next three years. From beginning to end, a cruise ship usually takes 16 months to complete.

Over the last five years, ACL new builds have featured two to three Caterpillar main engines, either models 3512 or C-32 (1,500 horsepower), as many as three Caterpillar generators, either C18s producing a combined 1,275kw, or C-9s producing a combined 750kw.; and stern-mounted Z-drive units from ZF Marine, and in a few cases, Rolls Royce Aquarius 50 active wing stabilizers. In terms of navigation and safety, Robertson, Sr. points to GPS and electronic chart systems, technology he says is changing and improving quickly.

## On the Books

For delivery in 2017 – at 268 ft long and 56 ft wide, with a capacity 170, the American Constellation cruise ship is designed to navigate the coastal waters of the U.S., and will feature Rolls Royce active wing stabilizers, the latest green propulsion technology, shipwide WiFi, Otis elevators and seven spacious lounges and observation decks. The 84 staterooms, said to be the largest in the industry at 250 to 450 feet, will feature private balconies, floor-to-ceiling sliding glass doors and marbled tile bathrooms. It was

**American Constellation, the first of the three to be delivered, has a capacity of 170 passengers and is scheduled to begin cruising in May 2017. Construction is currently nine weeks ahead of schedule, company officials said. The passenger vessel is being outfitted with details including marbled tile bathrooms and large sliding glass doors in each stateroom. Recently the signature red, white, and blue stack was lifted into place on the top deck.**

launched in July, nine weeks ahead of schedule, which apparently is not unusual for Chesapeake. "We always deliver early. We are very efficient and the schedules we make are realistic," says Chesapeake's Robertson, adding that "man hours per fabricated ton of steel or finished product is a lot less than it used to be and getting better all the time."

For delivery in 2018 is a yet to be named sister ship. It is well underway and will also accommodate 170 passengers. For delivery in 2019, steel is being fabricated for a third ship, which will be the first in a series of new, more sleekly designed modern riverboats that will "usher in a new class of U.S. riverboats," according to ACL's Robertson, by doing away with the traditional paddle wheel. It will carry approximately 195 passengers "with a level of comfort unprecedented on the American rivers," boasts ACL. It will look like a European river boat, but with higher, wider construction, all electronic controls, better equipment monitoring systems, quieter engines, five bladed, highly skewed propeller, state-of-the art propulsion and compliance with stringent EPA requirements.

The Chesapeake Shipyard, with over 35 years of experience, says it has "built each overnight cruise ship in the United States in recent years," including all new vessels for American Cruise Lines. "A lot of yards have the capacity to do it, but not many do. The cruise ship is a whole different animal." It has a roster of other clients it serves; for example, Vane, is a longtime client. Chesapeake delivered the 12th in a series of Sassafras-class oceangoing tugboats to Vane in July, and has contracted to build three more. The shipyard designs and builds a wide variety of vessel types for inland waterway or ocean service, up to 450 ft in length, including tugs, ferries and other passenger boats, on a 14-acre yard that includes 2,400 feet of deep water bulkhead. About a third of its production goes to ACL. Currently, it has a three-to-four-year order backlog.

### Old Can't Be Made New Again

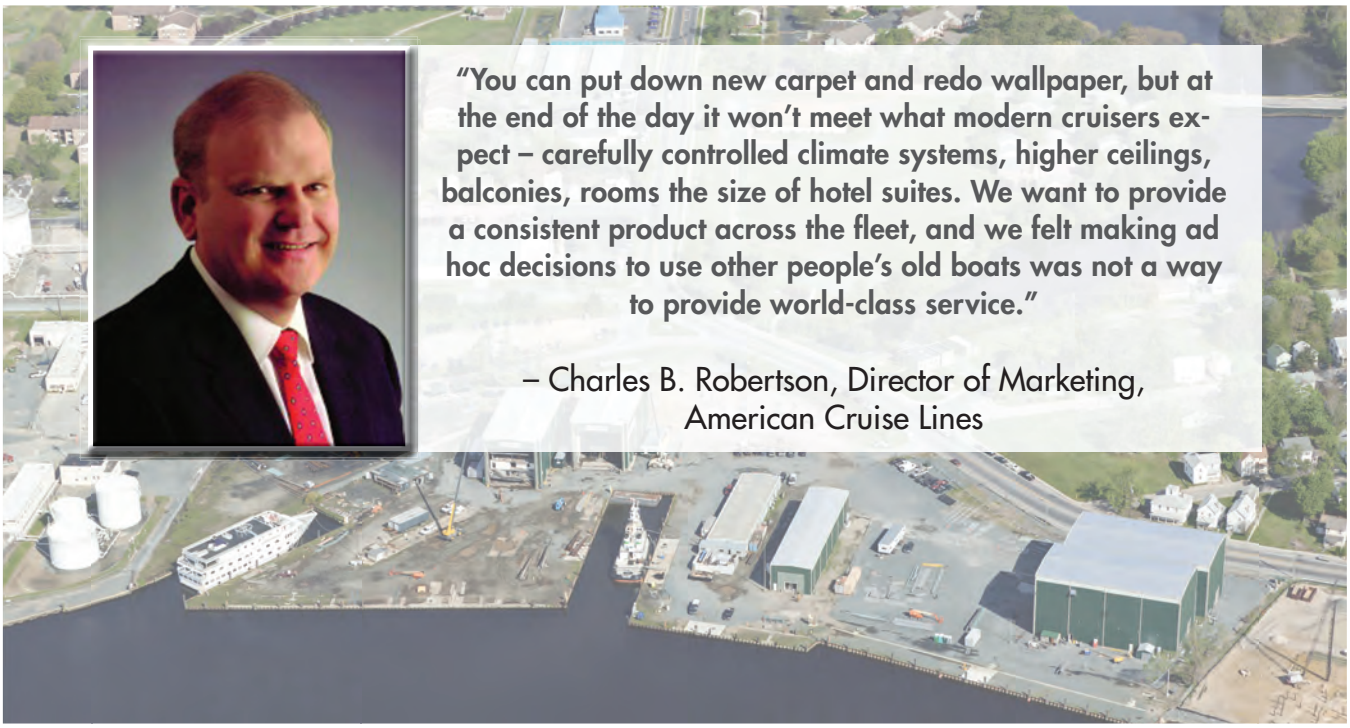
Why not save some money by purchasing a competitor's boat and revamping it to ACL specifications? Both Robertsons say they cannot find older boats worth refurbishing to meet either overall customer demand, or their specific expectations for comfort, spacious staterooms, modern amenities and more interesting itineraries.

"You can put down new carpet and redo wallpaper, but at the end of the day it won't meet what modern cruisers expect – carefully controlled climate systems, higher ceilings, balconies, rooms the size of hotel suites," says ACL's Robertson. "We want to provide a consistent product across the fleet, and we felt making ad hoc decisions to use other people's old boats was not a way to provide world-class service."

Most of the vessels out there today are too small to meet European standards for luxury cruising, agrees Chesapeake's

***275' Cruise Ship American Constellation ... at a glance ...***

| | | |
|---|---|---|
| Length: 275' | Naval Arch: Chesapeake Shipbuilding | Sewage Treatment: Scienco |
| Beam: 57' | Passenger Capacity: 174 Lower Berths | Engines: (2) Caterpillar C-35 12 |
| Draft: 9' | Stabilizers (2): Rolls Royce | Generators: (3) Caterpillar C-18 500kw |
| Speed: 15 knots | Displacement Tons: 2,430 | Generator: (1) Cummins 100kw |
| Air Draft: 55' | Bow Thrusters (2): Schottel | Windlass: (2) Coastal Marine |
| Propellers: (2) 5-blade | Stern Thruster: Schottel | Pilot Controls: Caterpillar |



**"You can put down new carpet and redo wallpaper, but at the end of the day it won't meet what modern cruisers expect – carefully controlled climate systems, higher ceilings, balconies, rooms the size of hotel suites. We want to provide a consistent product across the fleet, and we felt making ad hoc decisions to use other people's old boats was not a way to provide world-class service."**

– Charles B. Robertson, Director of Marketing, American Cruise Lines

Robertson. "When we started to build overnight cruise ships, they were 29 feet wide; now they are 67 feet wide." With that in mind, beginning with ACL's 2010 introduction of the 223-ft Independence cruise ship, Chesapeake built in a wider beam making the ship 5 feet wider than its predecessors to provide for larger staterooms, public spaces, and private balconies.

ACL is also expanding the number of passengers it can accommodate with each new vessel, and that's another requirement that refitting an older vessel can't address.

For example, in terms of customer capacity, over time the boats being removed from service that carried 50 passengers were replaced by ones carrying 100 and 150, which will be replaced by vessels such as ACL's upcoming deliveries that will carry from 170 to 195 passengers, respectively – more than three times the capacity of the earlier vessels.

And says a company spokeswoman Christine Schrager, "because we will have larger, faster, more coastal-ready ships ... we can bring people further than we've gone before in 10 days and still hit all the highlights, which we were not able to do in one of the older boats."

Those "coastal-ready" ships are aided by Rolls-Royce Aquarius 50 active-wing stabilizers, which compensate for rolling and rocking motions to provide smoother sailing. Stabilizers are controlled by sensors that automatically determine the amount of pressure needed to counteract movement, by pushing in the opposite direction, thereby taking virtually 90% of the roll out. Common in blue water vessels, stabilizers are particularly effective in rough seas, and allow the ship to move more effectively through water. These vessels also feature stern and valve thrusters, which provide the maneuverability needed to navigate tight spaces along the coastal shoreline, bringing passengers to ports along the inland waterway of the East Coast that larger ships cannot access.

The stabilizers allow ACL's vessels to "operate comfortably where we'd be operating uncomfortably – or not at

all. It really cuts 12%-15% of the roll to like half a degree, allowing the ship to become a very stable platform rather than one that moves around a lot," says Robertson, Sr., "It keeps the ship flat – it's much more comfortable for passengers," says ACL's Robertson, adding that from the ship's point of view, stabilizers allow it to go faster and "really control the itinerary better."

All new builds going forward will have the stabilizers, says ACL's Robertson, adding that the company is starting to phase out older ships without stabilizers.

## Green and Mean

Environmental efficiency is another reason ACL likes new builds, which enables it to meet the most modern regulations and emission standards. All boats are diesel and the company claims its newer vessels meet the highest EPA standards today – thanks mostly to the engine manufacturers, says Robertson, Sr. "It's not difficult to meet the requirement; just expensive. Most domestic cruise ships on the river don't meet EPA 3 & 4 because they are grandfathered in. We may be the only ones meeting it."

Ballast isn't much of an issue for ACL, but, says Robertson Sr., the vessels are able to better treat black and gray water with the latest organic system, to the extent of making the treated effluent 'almost drinkable.' "I think the way we handle gray water, A/C, lighting – they all operate with less impact on the environment, giving us a smaller carbon footprint."

Bolstered by a steady diet of new vessels, ACL's goal is to limit the age of its line to somewhere between 12-14 years. Its oldest in-house vessel dates to 2005 and it will retire 2002's *American Glory* this year. "For most of the other players, that's a pretty new boat, but it's already not good enough for us," says ACL's Robertson. The company either scraps or sells older vessels, but only overseas. The one exception to the new build rule is the Queen of the West, built elsewhere in 1995 "ahead of its time," and the lone refurbish by Chesapeake.

## Experience drives Efficiency

Efficient, safe operation is also driven by quality of crew. ACL vessels are piloted by a team of captains and officers who tend to be ex-U.S. Coast Guard or military, according to Schrager. It helps that the vessels are all new to fairly new, and feature the most modern technological and environmental systems of their generation. "Everything is new and works – that's a big thing," says Chesapeake's Robertson.

Training is another draw. "We do a lot more with training than any company in our peer group. We are the only one that owns and operates its own bridge simulator," adds Robertson, noting that as a result, "Captains come and they stay forever." Indeed, the job has been described as "working where other people vacation," which Schrager notes is "pretty unusual for most mariners."

A happy, experienced crew operating new to fairly young vessels custom built by a friendly sister company and which meet modern cruise passenger's expectations is a winning formula that has so far enabled American Cruise Lines to successfully navigate today's treacherous economy – something else many mariners today would find pretty unusual, and enviable.

***Patricia Keefe** is a veteran journalist, editor and commentator who writes about technology, business and maritime topics.*

# Shortsea Shipping: a Ferry Good Way to Start

***Tampa Bay's nascent foray into cross-channel ferry services serves to identify community needs, environmental benefits and a new way forward for domestic, shortsea startups.***

***By Joseph Keefe***

When the cities of St. Petersburg, Tampa, and Hillsborough and Pinellas Counties launched their collaborative passenger ferry service in November of last year, the effort highlighted the awakening of a local yearning for a better, cleaner and perhaps safer transportation for the citizens of the Tampa Bay area. St. Petersburg Mayor Rick Kriseman told *MarineNews* in December, "At various times over the course of many, many years, the idea would be raised by community leaders, or elected officials or grassroots organizations. Nothing formal ever materialized. It had long been a priority of mine to do this and the timing was right in that Hillsborough County leader Ed Turanchik was also pursuing this goal." And, so it has begun.

In November, HMS Ferries launched the passenger only ferry pilot project, aptly named the "Cross Bay Ferry." The unique, six-month pilot project connects the cities of St. Petersburg and Tampa. It ends on May 1, 2017. What comes next is still to be decided. In the meantime, the regional effort designed to demonstrate water transportation technology and service options to the residents and businesses of the Tampa Bay region.

The maiden voyage on November 1, 2016 began weekend-service for the month of November, and daily service began in December. According to Greg Dronkert, President and COO of HMS Ferries, "The tremendous collaboration between the four local government entities is a positive reflection on the entire Tampa Bay community. At the end of this project the community leaders will be able to better understand the waterborne transportation needs of their constituents. We are excited to be playing a part in such an important and unique initiative."

## Nuts & Bolts

Underscoring the strong local support for the new service, the Tampa City Council voted 6 to 1 without discussion to approve $350,000 towards the pilot project. Tampa was the second of four local governments to approve

the project, one which will eventually cost $1.4 million before it comes to an end. But, the partners didn't want a report – they wanted a real trial from which to make decisions. Along the way, they fist found out that amenities – alcohol, wi-fi and late sailings (to accommodate weekend dinner dates across the bay) – are important.

The "Cross Bay Ferry" employs the *Provincetown IV,* a twin-hull aluminum catamaran with a cruising speed of 29 knots and a capacity of 149 passengers. Boston, MA-based Bay State Cruises is leasing the vessel to HMS Ferries for the duration of the pilot project. HMS Ferries, a well known player in the ferry and passenger vessel markets, is also a member of the HMS Global Maritime companies, a provider of marine transportation and vessel management services to public and private clients, both domestically and internationally. At a time when reliability is especially important – especially during the trial phase of this endeavor – the Tampa-based consortium arguably couldn't have made a better choice.

At the outset, a demonstration initiative, called "Test the Waters," provided civic and business groups as well as individual citizens the opportunity to tour the vessel and take a short ride at no cost. Following that, and as the service now operates, weekend revenue service connects residents and tourists to their favorite destinations in St. Petersburg and Tampa by providing two roundtrips on Fridays and Sundays, and three roundtrips on Saturdays. Weekday service connects St. Petersburg commuters to downtown Tampa and day trippers from Tampa to St. Petersburg.

Nevertheless, says the ferry organizers, "With only one vessel and one crew for six months, the Cross-Bay Ferry pilot project can only do so much. We believe we have fashioned a program that will give a wide range of opportunities for residents and tourists to use this exciting, congestion-proof option. This program will also allow us to better assess marketplace interest in water transit, and how to more fully develop it in the event that the community supports its full-scale development." Only time will tell.

## Underway: All Aboard

"Everywhere I go, people ask me about the ferry," said St. Petersburg's Kriseman. "The Cross-Bay Ferry is a fantastic example of regional collaboration to take on an important challenge – transportation – in a way that's exciting to experience and pays homage to our maritime history. Importantly, this is a test project, and we need the community to support this if we want it to continue and expand."

Project organizers laid out a groundbreaking plan for the project. "We only have one vessel, and one crew, so we cannot do everything, but we do mean to showcase this technology to a lot of people and test ferry service in a variety of ways and markets." said Ed Turanchik with Akerman LLP, policy advisor for the project. "I think we have managed to do the most we can possibly do in a single, short pilot project."

That doesn't mean that the consortium won't reach out to potential partners for a boost and shake things up once in a while to excite the consumers. They have. Trip schedules are subject to change based on need. For example, HMS Ferries expects adjustments in April for sporting events, especially if the local Tampa Bay Lightning makes the NHL playoffs.

The cross bay trips take about 50 minutes each way. That's about 10 minutes longer than originally anticipated because the portion of the trip around Harbor Island requires a slower rate of travel (no wake zone). That also does not include boarding and disembarking. And, in this case, it isn't much faster than the usual road commute if there isn't any traffic to slow things down. But, that's not always the case and local stakeholders say that it doesn't take much – an accident or broken down vehicle – to make the morning or evening road commute pretty miserable.

The Cross Bay Ferry is a test of many things; logistics and consumer habits among them, but ultimately, at the end of the six-month trial, decisions will need to be made. According to Mayor Krisemen, the inauguration of a full time, commuter ferry could be one of the possible outcomes for the people of Tampa Bay. "I hope so.

*"So far, the only surprises have been positive. I didn't anticipate it to be so popular so quickly. I love it. I love how comfortable it is and that the boat itself is a destination. The views of our respective cities are really amazing and my appreciation of where we live has only grown."*

**– St. Petersburg Mayor Rick Kriseman**

The market will first decide that, but then it's up to the political will of our elected leaders. I will certainly work hard to make it a full-time option should the demand be there," he explained. Early support has been encouraging. For example, the local NHL Lightning team has been a loyal partner, once selling out an entire boat for a game. Separately, local cable provider Frontier Communications gave out free tickets during Thanksgiving week and additionally provided $150,000 in free AD time. Beyond this, they underwrote the cost of 'Free Ride' Sundays on the third Sunday of every month. Krisemen added, "I am very pleased and excited. It has exceeded my expectations. The numbers tell us people are mostly taking advantage of it for entertainment purposes – to enjoy what each other's cities offer. The commuter aspect of this will continue to be the challenge. The ridership numbers don't tell the entire story, for there is an economic benefit in that those traveling across the Bay are spending money in each other's cities."

The ferry's utility to the local community manifests itself in many ways. The benefits to the environment are an obvious place to start, as fewer cars on the road will translate into less air pollution, reduced road congestion, and less frequent pavement maintenance. Krisemen, however, puts the elimination of road congestion as his number one priority. He told *MarineNews*, "Reduced road congestion lends itself to convenience for local residents. The environment will benefit. The bottom line is that our current situation is not sustainable. People sitting in their cars on the Howard Frankland Bridge is not the future."

According to Kriseman, the estimate of how many people commute back and forth from St. Pete to Tampa via automobile every day is around 151,000 trips per day across the Howard Frankland Bridge and approximately 35,000 across the Gandy Bridge. That said, he conceded, "I'd be reluctant to put a number on what success looks like right now, especially given that we only have one vessel."

So far, so good. Kriseman says that the ferry has exceeded early expectations. He adds quickly, "So far, the only surprises have been positive. I didn't anticipate it to be so popular so quickly. I love it. I love how comfortable it is and that the boat itself is a destination. The views of our respective cities are really amazing and my appreciation of where we live has only grown."

## Awaiting the Final Report Card

The ferry consortium is conducting customer surveys continuously throughout the project in order to quantify consumer interest in water transportation as well as to gain better insight in how future service might be designed and operated. And, as the ferry trial continues, it has sparked interest in the community about other similar efforts. For example, local stakeholders are investigating the feasibility of a commuter ferry from McDill AFB, something which would reportedly cut a 1.5 hour commute for some to just 10 minutes.

For now, the novelty of a new and convenient option for Tampa Bay commuters hasn't worn off, ridership is slowly climbing, and the profile of what could one day be a permanent fixture for the dual county, two-city region, is also on the rise. It took a lot of local courage to spend that kind of money to try something new. At the same time, 'even money' says they will recoup that investment many times over, in a myriad of ways, amortized over time. If so, that's a 'ferry' good thing, indeed.

**www.crossbayferry.com**

# Volvo Penta Engines Power Quiet, Reliable Rides for Elizabeth River Ferry Passengers





When two new Elizabeth River passenger ferries enter service in early 2017, passengers will not likely give thought to the engines powering the vessel, but they will appreciate the outcome – a smooth and quiet ride. And the ferry operator, Hampton Roads Transit, will appreciate the reliability, fuel economy and easy maneuverability provided by the propulsion plant from Volvo Penta.

HRT specified twin Volvo Penta 13-liter 400 hp diesel engines to power its new River Ferry IV and V to provide daily, round-trip connections between the waterfronts of Norfolk and Portsmouth in Hampton Roads harbor at the foot of the Chesapeake Bay. The two 78-ft. aluminum-hull 150-passenger pedestrian ferries were designed by BMT Group and are being constructed at Armstrong Marine's shipyard in Swansboro, N.C. River Ferry IV is poised for delivery by the end of 2016, while River Ferry V will launch in the first half of 2017.

"Volvo Penta engines are known for their low noise production and pure performance," said Tracy Gable, contract administrator at Armstrong Marine. "These engines will provide a quick, reliable and easily maneuverable ferry ride back and forth across the river." The D13 engines are EPA Tier 3 compliant and are IMO NOx Tier II certified. They also meet the U.S. Coast Guard requirements for decibel levels in marine commercial engines.

HRT repowered one of its existing vessels, Elizabeth River Ferry III, with the same propulsion package in 2014, and was very satisfied with the results – in the form of improved fuel economy, reduced emissions and high performance.

"Our decision to standardize on the Volvo Penta D13s for the new boats was largely based on our complete satisfaction with the repowering experience," said Mark Stemple, project manager at HRT. "Through the course of the repower and subsequent operation of the boat, we were impressed by the engines' performance and reliability, as well as the high level of customer support from the Volvo Penta team. After we put the repowered boat back into the water, the Volvo Penta engineering team worked hard to tweak the RPM-to-fuel consumption ratio, giving us even better fuel efficiency without sacrificing boat speed."

"The D13s are real workhorses for a wide range of commercial marine applications," said Jim Reed, engines sales manager for Superior Diesel, Inc., Volvo Penta's Power Center supplying and supporting the Elizabeth River Ferry projects. "These engines are extremely popular for both newbuilds and repowers, due to their power performance, fuel efficiency, competitive pricing and low maintenance costs."

Powering the new ferries is a point of home-town pride with Volvo Penta of the Americas, which has its headquarters in Chesapeake, Va., just a 20-minute drive from the Norfolk/Portsmouth ferry terminals. From its facility on Volvo Parkway in Chesapeake's Greenbrier business corridor, the company supplies and supports engines for leisure boats and commercial vessels, as well as industrial applications. The engines are sold by 3,500 dealers in more than 130 countries.

"We take seriously our reputation for customer satisfaction in dealing with all of our customers, but it is a particularly rewarding when we're working with local businesses here at home," said Marcia Kull, Volvo Penta's vice president of marine sales for North America. "Our engines keep the ferries running smoothly, efficiently and on time, enabling passengers to have a pleasant onboard experience and enjoy the trip across the scenic river panorama and the busy waterfront."

"As we grow our commercial marine business we are seeing more repeat customers like HRT who keep coming back to us because of their experience with our engines and our extraordinary engineering and customer service teams," said Kull.

Popular with the region's visitors, HRT's river ferries, with their trademark paddle-wheel (for show only, not propulsion) at the stern, operate every 30 minutes, with 15-minute service during summer peak times. During the summer months, they also provide runs to Norfolk's Harbor Park stadium for baseball games.

# GULFSTREAM SHIPBUILDING'S CUSTOM ALUMINUM FERRY

## U.S. Department of Homeland Security awards Ferry Contract for vessel built specifically for Eastern Coastal Waters.

In December, Gulfstream Shipbuilding was awarded a contract through the United States Department of Homeland Security for a passenger/vehicle ferry to service New York and Connecticut waters. This crew boat-style vessel will be capable of transporting passengers, freight and vehicles in and around the waters of the Eastern Long Island Sound and Gardiner's Bay. The vessel has an expected delivery date of April 2017.

For its part, Gulfstream Shipbuilding is not only familiar with the waters of Eastern Long Island Sound, its production team has delivered three ferry vessels to North Ferry Company that also operates near these waters. The firm has a 35+ year history of building strong aluminum crew boats for all types of conditions.

Working with Naval Architect C. Fly Marine Services, Gulfstream's design team incorporated key design elements to meet and exceed the Critical Vessel Objective. The welded aluminum, mono hull, diesel propelled, quad screw passenger / vehicle ferry includes a 75 Hp Wesmar Hydraulic Dual Prop Thruster. Caterpillar diesel engines have been identified to meet the 26 knot performance requirement. The hull structure is robust and designed for strength with considerations for ice, but not overly heavy as to affect performance, maneuverability, seaworthiness, comfort and speed requirements. Paying particular attention to the beam at waterline and dead rise considerations, the hull design provides for minimal frictional and wave-making resistance along with the center of gravity to meet the peak performance envelope and to ensure adequate speed and efficiency.

Notably, Gulfstream's hull design is similar to that of a Gulf Coast Crew Boat, with a diminished cargo deck overall and a narrower beam at the waterline to reduce overall resistance at semi-displacement speeds. A sharp entry and moderate dead rise will provide a comfortable ride platform within the operational envelope.

Gulfstream Shipbuilding is a custom boat builder in Northwest Florida specializing in steel and aluminum vessels up to 300 feet. Formally known as "Freeport Shipbuilding," Gulfstream Shipbuilding operates in the same facility with a majority of the original management team and staff. The shipyard offers stock and custom designed vessels including U.S. Coast Guard-approved Excursion Vessels, Offshore Fast Supply / Crew Boats, Passenger / Car Ferries, Cruise Boat Tenders and Custom Specialty Boats.

***Gulfstream's Custom Designed DHS Ferry: at a glance …*** *www.GulfstreamShipbuilding.com*

| | | |
|---|---|---|
| Owner: U.S. DHS | Main Propulsion: 4x Catepillar C32 | Water: 800 gallons |
| Length: 118' | Horsepower: 1300 @1800 RPM | Lube Oil: 375 gallons |
| Beam: 27' | Service Power: 2x John Deere GK4045, 65kw | Sewage: 800 gallons |
| Draft: 6'6" | Propellers: 4x 4 blade, Nibral | Hull Construction: Aluminum |
| Depth (Molded): 10'-9" | Thrusters: 75 hp Wesmar Hydraulic Dual Prop | Controls: ZF Clear Command |
| Passengers: < 149 | Steering System: Skipper Hydraulics | Marine Gear: ZF 3050A |
| Fuel: 9500 gallons | Certification: USCG subchapter T(< 100 GT) | Delivery Date: April 2017 |

## Derecktor to Build Second Hybrid Series Vessel

Derecktor Shipyards of Mamaroneck, New York and Harbor Harvest of East Norwalk, CT announced their next revolutionary project providing an alternative transportation platform for organic food shipping. Combining Derecktor's reputation with a cutting edge BAE HybriDrive propulsion system and utilizing Cummins QSB6.7 engines, the vessel is based on a 19m aluminum Catamaran platform designed for efficient operation in coastal waters. This Catamaran Organic Market delivery vessel will be Derecktor's third Hybrid Series vessel. The future series of vessels has been reconfigured to carry 9,000 pounds of protected refrigerated cargo and 3,000 pounds of deck cargo. For approximately 3 voyage hours without recharge, the Organic Market Delivery Vessel can travel emission free on its Lithium battery component. In an attempt to reduce carbon footprint, Derecktor has teamed up with Harbor Harvest to create an eco-friendly marine coastal network that will integrate a retail space along with the support of the organic farm market in the Connecticut/Long Island Gold Coast and Long Island Sound area. The trade routes have already been tested to confirm the fuel efficiency and battery life, and the vessel will be able to be charged at shore side facilities along its route. Trade routes have been determined based on farm locations and will support a wide range of coastal areas. This forward-thinking project will work to move freight back onto the water, decongesting roadways and providing one of the most environmentally sustainable farm-to-market systems that is in operation today.

## JB Marine Service Delivers 55' Towboat to Gateway Dredging

Gateway Dredging has taken delivery of a 55' 1,200 HP twin screw conventional towboat. The Shearer Group, Inc. (TSGI) provided the design and engineering services to JB Marine Service. The towboat was constructed in St. Louis, MO. It was designed to ABS rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways. Notably, it was also designed with TSGI's best interpretation of the USCG 46 CFR Subchapter M regulations, since it was still pending at the time of design. The towboat is the first of two designed by TSGI and constructed at JB Marine Services. The second is a 68' 1,500 HP twin screw conventional towboat and is currently under construction.

## Seaspan Ferries Announces Arrival of First LNG Fueled Vessel


Seaspan Ferries Corporation (SFC) has taken possession the Seaspan Swift, the first of two new dual-fueled/hybrid (diesel, liquefied natural gas and battery) ferries to its fleet. The new state-of-the-art vessel, currently docked at the SFC Tilbury Terminal in Delta, arrived home after an eight-week journey that spanned a total of 10,661 nautical miles following its construction at Sedef Shipyard in Istanbul, Turkey. Another first occurred this week at SFC, with assistance from VARD, FortisBC and Redwise, when the Seaspan Swift was successfully bunkered using a tanker truck to deliver LNG onboard the vessel. The 148.9 meter ferry, which can accommodate up to 59 trailers, will undergo a series of regulatory inspections and crew training programs throughout December before entering operation on January 2, 2017. The Seaspan Swift, along with its sister ship the Seaspan Reliant, mark the first vessels added to SFC's fleet since 2002. The Seaspan Reliant, SFC's second dual-fuelled/hybrid ferry, nearing completion and undergoing testing and trials in Turkey, is expected to arrive in Tilbury early 2017.

## BCGP Awarded $72 Million Contract

Brunswick Commercial & Government Products (BCGP) was recently awarded a multi-year, multi-unit contract valued at $72 million. The single-award, indefinite-delivery/indefinite-quantity contract is for both 32-foot and 37-foot Boston Whaler Justice boats and will include spare parts, maintenance and training support for The United States Southern Command (SOUTHCOM) area of responsibility, which includes Central America, South America and Caribbean nations. BCGP was awarded the initial contract for Boston Whaler Justice boats to support the SOUTHCOM area of responsibility in 2011. To date, BCGP has delivered 38, 37-foot and 17, 32-foot Boston Whaler Justice boats.

## *Damen wins 13-tug order from ECO*

Transportation provider and the USA's largest operator of OSVs, Edison Chouest Offshore (ECO), has teamed up with Damen to build a total of 13 heavy duty mooring assistance and escort tugs. These will be deployed on two major maritime projects for which ECO has recently won contracts, based in part on the use of well-proven Damen tug designs. The vessels will be built using ECO's network of five shipyards and Damen's support. The first of these is a contract that ECO won earlier this year with a new Corpus Christi based LNG export terminal. The agreement is for the supply of four escort tugs with a bollard pull of 80 tons, to operate at this new LNG terminal in Texas, which is currently under construction. The Damen tugs will be of the well proven escort/mooring ASD 3212 design. More recently, ECO also won a long term contract in Alaska. ECO is taking over the ship escort-response duties out of Valdez, Prince William Sound, from July 2018, for which it will require nine, high-powered escort tugs. For this highly environmentally-sensitive project, Damen and ECO will work together to deliver four more ASD 3212 tugs with a bollard pull of 70 tons each and five of the most powerful ASD tugs ever built; the ASD 4517 with a bollard pull of 150+ tons. This is a joint Damen and ECO developed escort tug specifically designed for the sometimes challenging weather conditions in the Prince William Sound. The contract has been handled by Damen's new Area Support office in Houston, which opened on 1 August 2016.

## Signet Shipbuilding Builds ASD for E.N. Bisso

On the morning of October 12, 2016, E.N. Bisso and Signet Shipbuilding & Repair (SS&R) Pascagoula, Mississippi, christened and launched E.N. Bisso's newest high technology Robert Allan Ltd. (RAL) design tug. Mrs. Deborah F. McDonald, wife of Mr. William H. McDonald, President, E.N. Bisso, New Orleans, Louisiana, was the Christening Sponsor. The Gladys B, SS&R Hull 109 was launched immediately following the ceremony, and was delivered on-time and on-budget in December. This ASD tug is the fourth RAL design vessel constructed by SS&R, with two new build contracts currently under negotiation.

*Gladys B at a glance …*

| | | |
|---|---|---|
| LOA: 80 feet | Engine: (2) MTU 16V 4000 M64 EPA Tier 3 | ASD: (2) Rolls-Royce, US 205 P20FP |
| Beam: 38 feet | Generators: (2) John Deere 6068 AFM 85 | Bollard Pull: 60 metric tonnes |
| Class: ABS | BHP: 2681 each @ 1800 RPM | Hawser Winch: Markey DEPGF-42S |
| Pumps: Blackmer | Hose Crane: Rapp Marine HP30 5F | Number of Cargo Tanks 6 |

Harris


Corrigan


Hatley


Parker


Murray

## Fred Harris Retires

NASSCO's **Frederick J. Harris** has retired, effective January 1, 2017. **Dirk Lesko** will be a vice president of the corporation and appointed as president of General Dynamics Bath Iron Works, and **Kevin Graney** will be a vice president of the corporation and appointed as president of General Dynamics NASSCO. Throughout his extensive career, Harris has held leadership roles at all of the corporation's shipyards and made significant contributions to the U.S. Navy's shipbuilding programs. An icon in U.S. shipbuilding, Harris embraced the practice of efficiently churning out series-build hulls for decades. Arguably, nobody did it better.

## BC Ferries Corrigan Named Interferry CEO

Interferry's new CEO is to be **Mike Corrigan**, currently president and CEO of Canada's BC Ferries. He will leave this role on March 31 next year and immediately take up his new post. The announcement came at the AGM held during Interferry's 41st annual conference. Interferry represents the ferry industry worldwide with a diverse membership of more than 200 companies from 35 countries.

## Wärtsilä's Hatley elected as RINA Fellow

The Royal Institution of Naval Architects (RINA) has elected **John Hatley** PE, Vice President, Americas, and Director of Market Shaping, Wärtsilä Marine Solutions, as a Fellow of the institution. Candidates for election as a Fellow (FRINA) must have demonstrated exceptional contributions to the profession, a record of superior achievements in their career and having held positions of responsibility. RINA was founded in 1860 to advance the art and science of ship design.

## WCI Elects Parker as Chairman

The Waterways Council, Inc. (WCI) named **Tim Parker,** President of Parker Towing as its Chairman of the Board. Parker succeeds Merritt Lane, President and Chief Executive Officer, Canal Barge Company. Parker also serves on the Board of Directors of Mercedes-Benz U.S. International, Inc.; as Past Chairman of the Board of the Alabama State Port Authority; Past Member of the Inland Waterways Users Board; Past President and Certified Member of the Alabama Chapter of the American Society of Transportation and Logistics; Past President of the Tennessee/Tombigbee Waterway Development Council; and a past Board Member of Regions Bank of Tuscaloosa.

## Gulfstream Shipbuilding Welcomes Murray

**James Murray** has joined the Sales Management Team at Gulfstream Shipbuilding. James is the son of Jim Murray, who originally opened the shipyard 35 years ago as Freeport Shipbuilding. He built a variety of custom boats at the shipyard before venturing off to start his own successful passenger excursion company. James returns to partner with the current owner Stuart Reeves on a new generation of custom shipbuilding.

## Alfa Laval Names PureBallast Business Manager

**Kristina Effler** has been named Global Business Manager for Alfa Laval PureBallast. Effler assumes the role as the global shipping industry prepares for the implementation of the IMO BWM Convention's entry into force in September 2017. She brings 12 years of experience, most recently serving as the Global Business Manager for the PureNOx system within the company's Marine Division.

## Brian A. McAllister to Receive Honorary Doctorate from SUNY

**Capt. Brian McAllister** will receive an honorary doctorate from SUNY Maritime College on January 27. The chairman of McAllister Towing, he has been with his family's company since 1959. He received a bachelor's degree in Marine Engineering and a U.S. Coast Guard third assistant engineer's license from SUNY Maritime in 1956. Capt. McAllister has every year donated his company's time and resources to tow the college training ship as it leaves and returns on summer sea term. In 1974, he and other members of the fourth generation purchased the company from the third generation of McAllisters. He became president of the company in 1984 and its sole owner in 1998.


Effler


McAllister


McArdle


Moore


Sörenson

## Vesconite Appoints Marine Representative

Vesconite has appointed **Sharon McArdle** as its new marine representative. McArdle comes to the position from the industrial side of Vesconite sales and is well-versed in the polymers' performance qualities and specifications.

## AdvanTec Global Innovations Strengthens Management Teams

AdvanTec Global Innovations announced that **Charlie Moore** has assumed the position of Industry Specialist, Cranes/Yacht, with responsibility for business development and growth of the Steelhead and Pacific Coast Marine brands within the marine products portfolio. Moore brings over 20 years of marine experience working in shipyards and has worked at Derecktor, Austal and Bradford Marine in production and management roles.

## Marine Jet Power Announces New Executive Leadership

**Magnus Sörenson** has been appointed CEO of Marine Jet Power. He joined Marine Jet Power in January 2016 as EVP Sales & Marketing and is Naval Architect (M.Sc.) and has over 15 years experience in shipbuilding, shipping and defense. His previous experience includes serving as Project Manager Combatant Craft at the Swedish Defense Material Administration.

## New Leadership at NWF


Allegretti


Calhoun


Mecklenborg

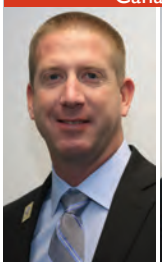

Toohey

The National Waterways Foundation (NWF) elected **Dan Mecklenborg**, Senior Vice President, Chief Legal Officer and Secretary, Ingram Barge Company, as Chairman. Also named as trustees were, among others, **Tom Allegretti**, President and Chief Operating Officer, American Waterways Operators, **Cherrie Felder**, Vice President, Channel Shipyard Companies, **Michael Hennessey**, Vice President, Sales and Marketing, Brownsville Marine Products, **Merritt Lane**, President and Chief Executive Officer, Canal Barge Company, and **Peter Stephaich**, Chief Executive Officer, Campbell Transportation Company.

Named as Foundation President was **Michael Toohey**, the President and CEO, Waterways Council, Inc. **Matt Woodruff**, Director, Public and Government Affairs, Kirby Corporation, Kirby Corporation, was elected as Treasurer of the Foundation. **Debra Calhoun**, Senior Vice President, Waterways Council, Inc., was named Secretary.


Holt

Canaveral Port Authority


Loyd


Harvey


Weinberg


Debnath

## Emsys Maritime Welcomes Holt as Marine Service Manager

Emsys Maritime Ltd (UK) has announced the appointment of **Tim Holt** who joins the company as Marine Service Manager. Holt has an extensive background in the design, installation and maintenance and support of maritime emissions monitoring technology. He has held senior positions specializing in complex maritime and land based emissions measurement applications. His new role will be to spearhead the expansion of Emsys Maritime's Spares and Service Department.

## Weinberg Elected Chairman of Canaveral Port Authority

Canaveral Port Authority board members selected **Tom Weinberg** to serve as Chairman of the Canaveral Port Authority. Newly elected **Micah Loyd** and **Bob Harvey** were also sworn in to begin their terms. Elected in 2010 and re-elected in 2014, Weinberg's career included positions as Chief of Staff for former U.S. Senator Mel Martinez and Deputy County Administrator for Orange County, Florida. Micah Loyd is a Certified General Contractor and sits on the North Brevard Economic Development Zone Board. Bob Harvey served 33 years in the United States Army and Air Force as a fighter pilot and combat veteran. He retired as a Colonel and is a published author and airline pilot.

## Viega Names Debnath VP of Sales & Marketing

Viega LLC announced **Sean Debnath** as its new vice president of sales and marketing. Debnath has more than 20 years of industry experience. He started his career as a hands-on scientist and gradually transitioned himself to the commercial side of the business. Prior to joining Viega, he has held vice president and director level positions in sales and marketing at Kaydon Corporation, Rexnord and Thermo Fisher Scientific.

## Woodhead Named KVH SVP

KVH Industries announced that **Mark Woodhead** has been named to the newly created position of KVH senior vice president for training and content. Woodhead will direct KVH's maritime crew welfare, safety, and productivity services, which include Videotel maritime training packages and numerous news and entertainment brands, such as NEWSlink. Woodhead has been managing director of KVH's news and entertainment brands since 2013. The new position will bring KVH's maritime training, news, and entertainment under one umbrella for the first time.

## Crowley Scholarships for Six USMMA Cadets

Crowley Maritime Corporation awarded six U.S. Merchant Marine Academy (USMMA) cadets with Thomas B. Crowley Memorial Scholarships during last month's Containerization and Intermodal Institute's Connie Awards luncheon. Crowley's


Wookhead


Crowley Scholarships


Eisenhart, Crowley, Hilburn


Parkhurst


Campbell

Jenny Terpenning, supervisor, marine recruiting, presented the scholarships to Midshipmen (MIDN) Stacee Glass, Connor Sexton, John Terselic, Tanner Evans, Dylan Rabbitt, and Chandler Chiappe, all of whom were chosen based on their academic performance, financial need and interest in pursuing a career at sea after graduation. Since 1984, Crowley has provided more than $3 million dollars in scholarship funding for more than 1,000 students.

## Eisenhart, Hilburn Honored with Thomas Crowley Awards

Crowley Maritime Corporation's **Jeannie Eisenhart**, director of talent acquisition and employee services, and Bleu Hilburn, director of logistics business development, have been honored with 2015 Thomas Crowley Awards, the company's highest honor for its employees. Eisenhart and Hilburn each received a limited edition bronze sculpture that depicts company founder Thomas Crowley ferrying goods in a row boat across San Francisco Bay in the early 1890s. The award serves not only as a tribute to the founder of the company, but also to those honorees who have aligned themselves closely with the company's values displaying outstanding performance, dedication, leadership and initiative.

## WheelHouse Technologies Staffing Update

The WheelHouse Board announced that **Craig Parkhurst** has been promoted to the position of president and **Kenny Campbell** has been hired as national sales manager. Parkhurst joined Wheel-

## Sea Tow Honors Outstanding Members

Sea Tow Services International recently honored members of its national network for outstanding customer service and dedication to boating safety. Sea Tow Franchise of the Year, awarded to the franchise that most exemplifies Sea Tow's high standards of service and operation, was won by Sea Tow Central Florida Lakes (Fla.), owned by **Capt. Kerry Kline**. Sea Tow Rookie of the Year went to Sea Tow Portland/Midcoast (Maine), owned by Captains **Matt Wilder** and **Bruce White**. The Sea Tow Foundation Hero Award, presented to the franchisee who most exemplifies the Foundation's mission to promote boating safety, went to Sea Tow Eastern Connecticut.

**Lister**

**Tinto**

**Short**

**Ludwig**

House in 2009 as Operations Manager where he was responsible for the implementation of all yacht and commercial fleet accounts. Kenny Campbell joined WheelHouse Technologies this month as national sales manager. Kenny previously led business development at a technical instrumentation company, and prior to that, as port engineer for a fleet of 17 high speed passenger vessels.

### Seaspan Marine Appoints Lister as VP, Commercial Services

Seaspan announced that **Peter Lister** has joined Seaspan Marine as Vice President, Commercial Services. Peter brings over 20 years of experience as a research and innovation leader in the forestry sector. He holds a Masters and Bachelor of Applied Science in Mechanical Engineering from the University of British Columbia (UBC), and recently served as Director of both the Canadian Wood Council and Canadian Construction Innovations.

### Vancouver Shipyards Appoints Tinto as VP

Seaspan's Vancouver Shipyards announced the appointment of **Tony Tinto** to Vice President, Planning & Estimating. Tony joined Vancouver Shipyards in 2006 as a Project Manager, before moving over to affiliate company Vancouver Drydock in 2007 in a similar capacity. In 2012, Tony returned as Director, Planning & Production Control, and was appointed to the role of interim Vice President, Planning & Estimating in November 2016. He holds a diploma in Civil Design from (BCIT), a professional diploma in Yacht Design from the Westlawn Institute of Marine Technology and an Executive Education certificate from the UBC's Sauder School of Business.

### Chris-Craft Names Two to C-Suite Sales Roles

Chris-Craft named **Norm Kraus** as Regional Sales Director. Norm comes to Chris-Craft with 40 years of experience, as a District Sales Manager for Eagle Trailers, and most recently Regional Business Development Manager at Mastercraft Boats. Separately, the firm also announced that **Justin Short** has also joined the team as Regional Sales Director. Justin previously spent the last 10 years with the Yamaha Marine Group and comes to Chris-Craft with an extensive marine industry background in both sales and operations management.

### Coast Guard Foundation Appoints Ludwig as President

The Coast Guard Foundation, a non-profit organization committed to the education and welfare of Coast Guard members and their families, announced that Regional Director of Philanthropy **Susan Ludwig** will replace **Anne Brengle** as president. With ten years of non-profit fundraising and administration work, coupled with two decades of experience working in corporate sales and product management, Ludwig is well positioned to lead the organization effort to increase awareness for the Coast Guard and the Foundation.

## BACTEST Ltd & CTG's Speedy Breedy SeaSure BWT Monitor

BACTEST Ltd and Chelsea Technologies Group's SpeedyBreedy SeaSure is a one-stop shop to determine if treated ballast water is compliant to IMO D2, VGP and other standards and the only ballast water testing solution suitable of testing for microbial, phytoplankton and chemical contamination. This data is automatically input into a secure report called Ballast Log that is suitable for transmission to a secure audit trail.

www.speedybreedyseasure.com

## Optimarin's BWT System Obtains USCG Approval

Optimarin has become the first system supplier to gain full USCG type approval. The development, which adds to IMO approval and certification from a host of classification societies, means Optimarin's environmentally friendly UV-based technology now leads the market in terms of global compliance. The Optimarin Ballast System (OBS) utilizes a combination of filtration and powerful 35kW UV lamps to treat ballast water without the need for chemicals.

www.optimarin.com

## Ecochlor's BWTS

Ecochlor's ballast water treatment system (BWTS) uses a two-step process to treat ballast water – filtration followed by disinfection with the well-known biocide, chlorine dioxide. It works in all variations of salinity, temperature and turbidity. The small size, low power, and low maintenance characteristics of the Ecochlor system make it ideal. Ecochlor has completed all testing for USCG Type Approval and will soon its USCG application.

www.ecochlor.com

## Venturi Oxygen Stripping (VOS) BWTS

VOS is a physical process that introduces a very low oxygen gas into the ballast intake through a venturi. The venture creates a very fine "bubble emulsion" which strips the dissolved oxygen out of the water suffocating all organisms. A slight decrease in PH assists in elimination of organisms. VOS requires no filters, retreatment or chemicals and works in all conditions. It has USCG AMS and numerous flag state approvals.

www.nei-marine.com


## Wärtsilä, CSSC Ink Agreement for BWMS

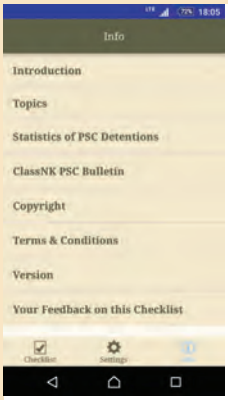
Wärtsilä has signed a manufacturing license agreement which provides CSSC with access to technology and the rights to manufacture Wärtsilä's Aquarius EC Ballast Water Management System (BWMS) under license for applications to CSSC customers. Wärtsilä gains access to CSSC's new manufacturing facility, thereby further supporting supply and demand needs for the Wärtsilä BWMS direct to Wärtsilä customers. The systems will be supplied with Wärtsilä Type Approval.

www.wartsila.com

## BWC Seaforth Mobile BWM System

Ballast Water Containers' patent pending BWC SEAFORTH and BWC BUTE mobile ballast water management systems are available with full US Coast Guard type approved technologies including industry leading components from manufacturers Optimarin & Wartsila. The USCG type approved technologies make the BWC products the world's first mobile ballast water management solutions suitable for guaranteed compliance worldwide.

www.ballastwatercontainers.com




## ClassNK's Mobile app for PSC Inspection

ClassNK's ARRIVAL CHECKLIST is a preparatory checklist mobile app for PSC inspections. The app categorizes items that are frequently pointed out as deficiencies at PSC inspections. Inspection results can be input along with notes and photographs for each corresponding checklist item. ARRIVAL CHECKLIST for PSC mobile app is available for download from the App Store for iOS / Google Play for Android.

www.classnk.or.jp

## Life Cell Achieves SOLAS Certification

Life Cell Marine Safety's buoyancy device, Life Cell, has achieved SOLAS certification. Life Cell is a Throwable Buoyancy Device and has the capacity to support 1-4 people depending on the model. It is suitable for installation up to a height of 30 meters above the waterline. The added advantage of the Life Cell is that essential safety equipment can be stored to ensure survival at sea.

www.pinpointelectronics.com

## MOB Lifesaver: MOB Retrieval for Lifejackets

Lifesaver is 3 meters of bright yellow line, spliced into a loop with a triangle at one end. The other end is fitted to the lifting becket in an automatic life jacket. When the jacket inflates, the Lifesaver floats out and is easier for rescuers to grab with a boathook and secure the casualty to the boat. Lifesaver lifts up to 1.5 ton with its Dyneema line.

www.moblifesavers.com


## Ahead Sanitation Systems

Ahead Sanitation Systems designs manufactures and distributes Sewage Treatment Systems, Products and Supplies for the Marine, Passenger Vessel and Recreation Industries. Sewage Treatment Systems are Type II Marine Sanitation Devices with two Certificates of Approval: USCG Certified in accordance with USCG Title 33 Code of Federal Regulations 159.015 and IMO certified and accepted worldwide in accordance with the latest IMO Resolution MEPC.227 (64).

www.aheadsanitationsystems.com

## Parker Kittiwake's Water Test Kit Protects Passengers, Crew

Parker Kittiwake's HPC Water Test Kit represents a breakthrough for testing the overall microbiological cleanliness of a vessel's system, quickly alerting seafarers to potential safety risks and prompting action before further contamination occurs. With a single sample, mariners can detect the presence of harmful bacteria and confirm the efficiency of a vessel's water disinfection system, without the need for specific training.

www.kittiwake.com

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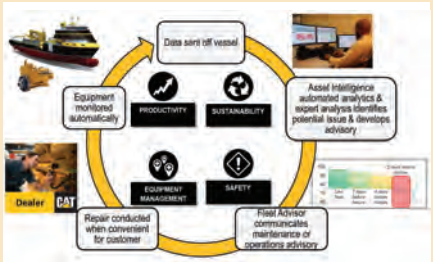
www.fciwatermakers.com




## Caterpillar's DNV GL Certified Cat Asset Intelligence System

Caterpillar Marine has received Type Approval certification from DNV GL for Cat Asset Intelligence (Cat AI) software. Cat AI advanced predictive analytics and expert advisory services, with onboard and shore based modules, can be configured for a single vessel or an entire fleet. Cat AI increases uptime by predicting and avoiding failures, better maintenance planning, and decreased operating costs, through fuel efficiency and reduced maintenance.

www.cat.com/marine

## Tier 4 Certification for EMD 710 Series Engine

Progress Rail's EMD 710 Series Model E 23B Tier 4 marine engine has received U.S. EPA certification – the only Tier 4-Final, two-cycle engine of its kind to achieve this distinction. The EMD 710 Series 12-cylinder marine engine has the same compact footprint as the previous product. This system incorporates reliable Selective Catalytic Reduction (SCR) technology to produce fewer emissions while operating at the highest efficiency.

http://progressrail.com/powerproducts

## GE's EPA III/Tier 4 Marine Diesel Engine

Engine technology had to advance to meet new global environmental standards. Many turned to aftertreatment; adding chemicals and operating cost. GE kept it simple and built it right into the engine. GE's Exhaust Gas Recirculation (EGR) system needs no aftertreatment, no messy chemicals, no change to operating processes and no ongoing urea cost. Best-in-class fuel economy provides 15 percent more power while maintaining the same footprint.

www.ge.com


## Sevaen Industrial Series Workwear

Sevaen's new Industrial Series marine workwear line is designed for workboat, tugboats, cargo ship and wharf workers. Sevaen designs, tests, engineer, and manufacture its clothing in North American and sources fabrics and trim items from North America. Looking for longer lasting hardcore waterproof workwear that can take the abuse of the marine industry? The Industrial Series is for you!

www.ClintonDesveaux.com

## Rolls-Royce to Power NY Ferry

Rolls-Royce has won a contract to supply power and propulsion to New York's newest and largest high-speed luxury ferry; using four high-speed MTU diesel engines type 12V 4000 M64 from Rolls-Royce. The four EPA Tier III engines offer low emissions and will drive will drive four Rolls-Royce Kamewa 63S4 waterjets, providing both reliability and redundancy.

www.Rolls-Royce.com

## Revolt Custom Boats, Mercury Marine in New Partnership

Mercury Marine has announced a partnership with Netherlands based Revolt Custom Boats. The first boats to hit the water are Revolt 31X's powered by twin Mercury Racing 400R Verado outboards. The new partnership with Mercury Marine will allow Revolt to provide its customers with a custom boat package equipped with the most reliable power option in the marine industry.

www.revoltcustomboats.com

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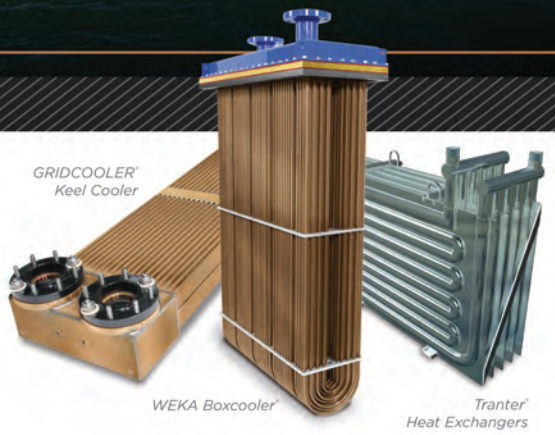


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