MARITIME LOGISTICS PROFESSIONAL

May/June | Volume 9, Issue 3

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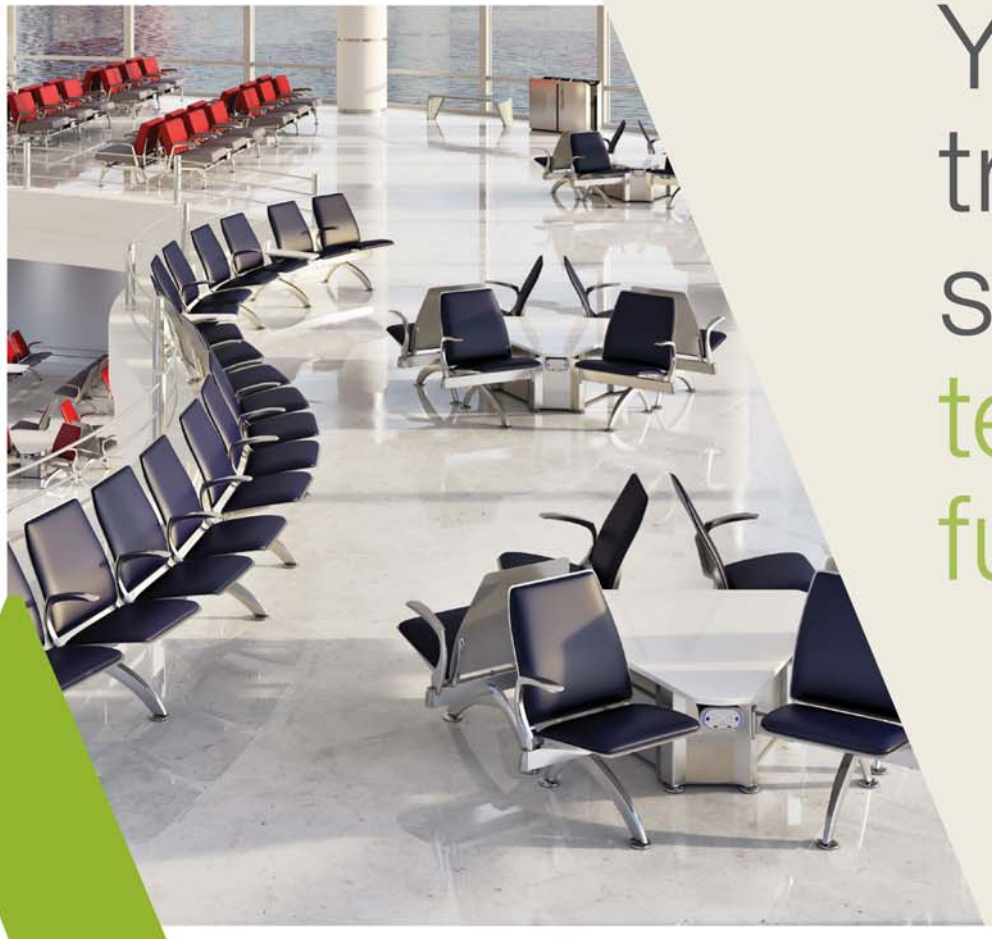
SHORTSEA SHIPPING
AT LAST – THE FUTURE OF INTERMODAL SHIPPING

PORT DEVELOPMENT
DEEPER, WIDER – AND HIGHER



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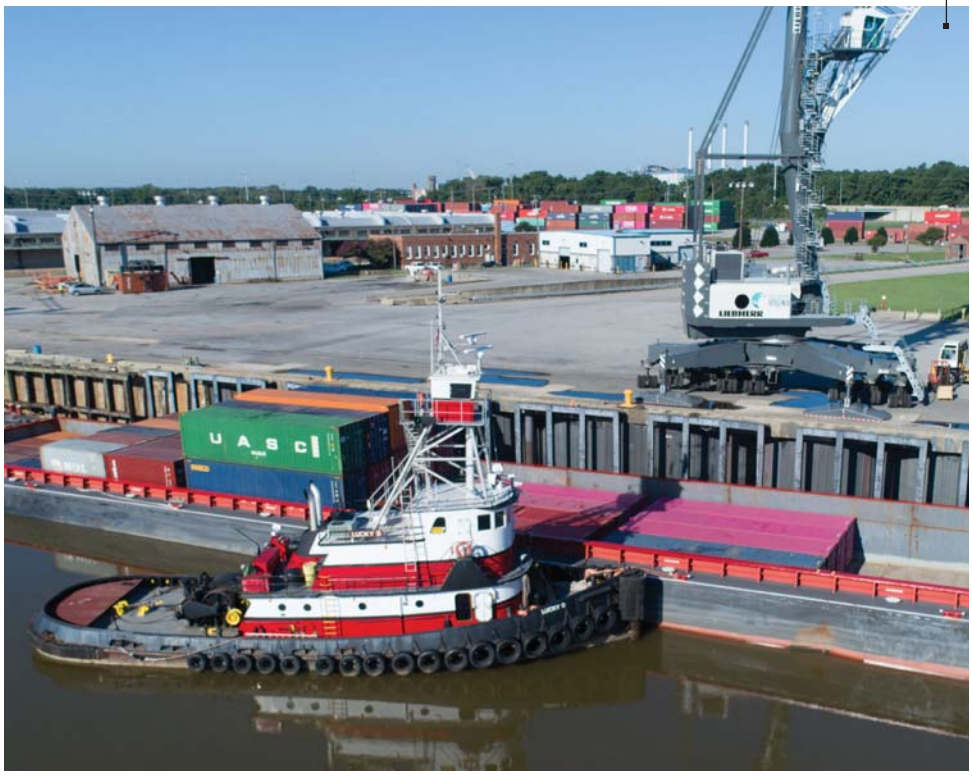
"We have ample capacity to grow business at RMT and think a realistic ceiling is somewhere in the 60,000(+/-) containers-a-year mark. We are continuing to invest in the terminal and there may be new technology available that allows us comfortably and efficiently push past that ceiling. An important aspect of the barge that is sometimes overlooked is its environmental benefit."

– John F. Reinhart,
CEO and executive director
Virginia Port Authority (VPA)



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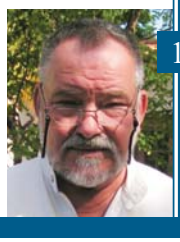

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2 **Edward Lundquist** is a retired naval officer who writes on naval, maritime, defense and security issues. He is a regular contributor to Maritime Reporter, Marine Technology Reporter and all the New Wave Media titles.

3 **Barry Parker** of 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

ON THE COVER

Visit any commercial big box distribution center and you'll find scores of military veterans working there. A closer look at the U.S. Navy's far flung and sophisticated supply chain operations reveals the many reasons why. The story begins on page 24.

Image: U.S. Navy photo by Isaac Maxwell

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Credit: U.S. Navy photo by Mass Communication Specialist Seaman Madysson Anne Ritter/Released

Editor's Note

Building Better Ports

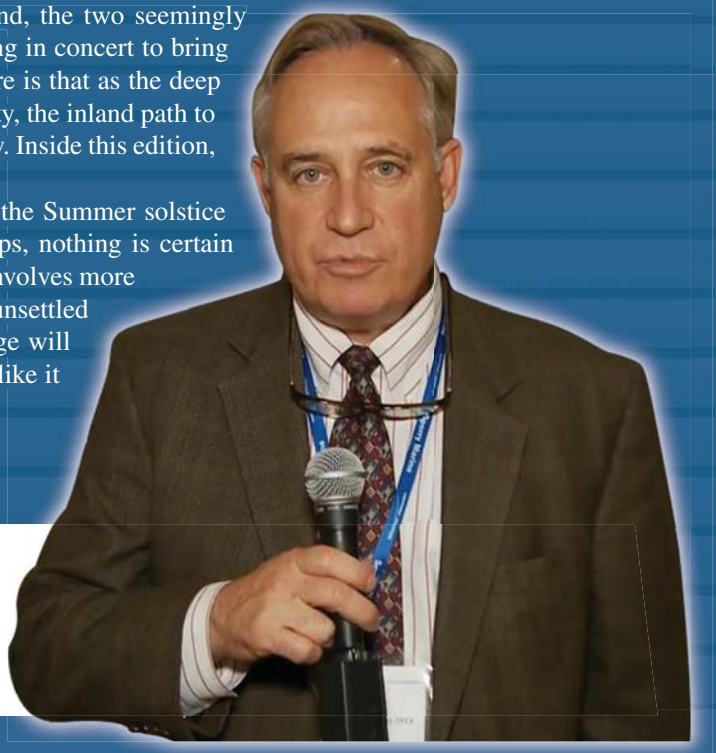
It was in early May when the Virginia Economic Development Partnership (VEDP) sponsored a press tour of the commonwealth's rapidly expanding maritime supply chain. The three-day event was an eye-opener on many levels, but none more so than visits to several big name distribution centers situated in close proximity to key supply chain intermodal connections. I suppose that was very much the point: *the supply chain itself is only as strong or as weak as its connections to each and every part of that process.*

As a maritime editor, first and foremost, I admit to being not too thrilled at the news that we would see not one, but three big box – one million square feet each – distribution centers in close sequence. I wanted to see the ports; inland and deep water. But, as I soon found out, if you've seen one distribution center, well, you've seen just one distribution center. What they all had in common, however, was their commitment to making sure the best people were an integral part of making it all work. More often than not, that involves hiring U.S. military veterans.

It turns out that the military's supply chain, in many respects, is second to none. It is also a massive undertaking. It is global, it supports millions of personnel and their dependents, and like the world's underappreciated merchant marine that transports virtually 95% of everything we depend on for our very existence, it operates quietly in the background, hidden behind the noise of bigger headlines. And while one goal in logistics is to provide material and services in a stable and predictable fashion, that goal sometimes runs counter to the unpredictable nature of military operations. In this edition, Edward Lundquist's look into the fascinating world of U.S. Navy logistics gives another view into how the supply chain works – and works well. The story begins on page 24.

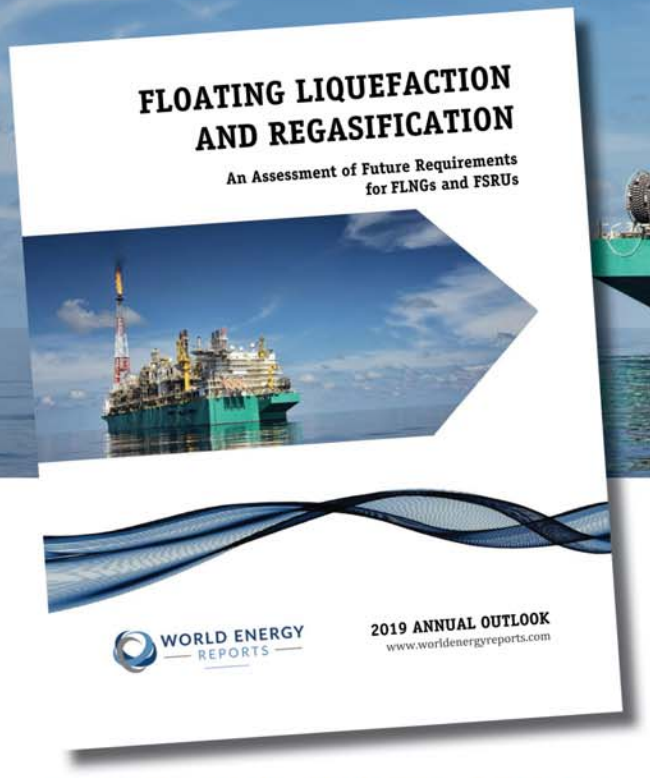
Separately, and closer to home, the much anticipated arrival of shortsea shipping is finally upon us, along with focused dredging operations all along the U.S. East Coast. From Long Island Sound all the way down to Hampton Roads and beyond, the two seemingly disconnected efforts, each as important as the other, are working in concert to bring new efficiencies to the intermodal supply chain. The lesson here is that as the deep water ports expand their depth, footprint and throughput capacity, the inland path to the hinterlands and that all-important 'last-mile' also has to grow. Inside this edition, that much becomes painfully obvious.

As you read this, our latest edition of ***MLPro***, midyear and the Summer solstice have both come and gone. But, unlike those annual timestamps, nothing is certain about what will come next for the global waterfront. Logistics involves more than just boats and docks. A global trade war, an increasingly unsettled Middle East situation and the tsunami of post-Panamax tonnage will all eventually arrive on the pier in North America, whether we like it or not. Count on ***MLPro*** to cover those events, as they unfold.



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

POWERFUL MARKET INTELLIGENCE



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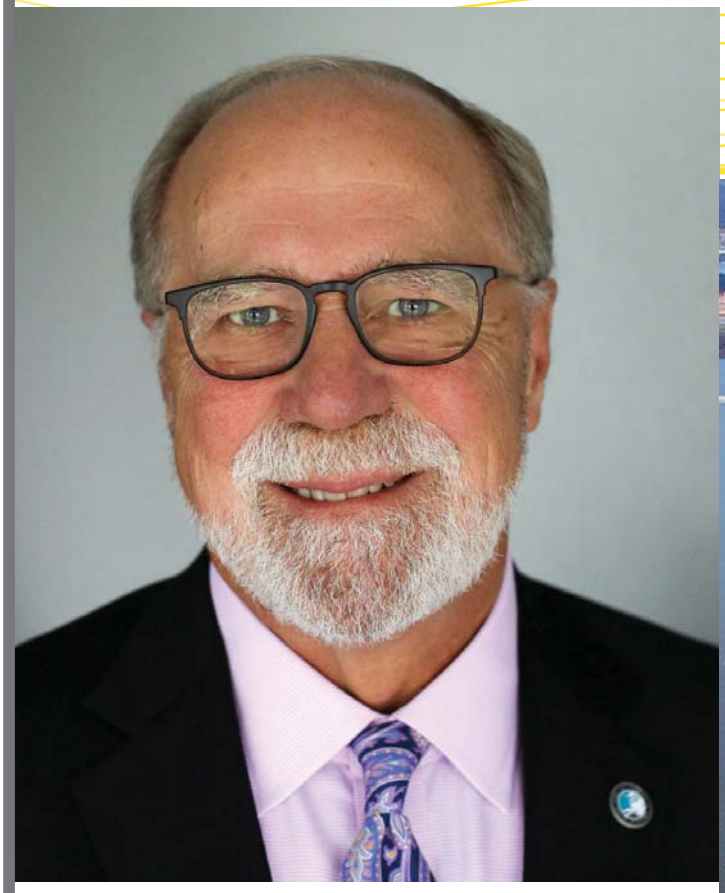
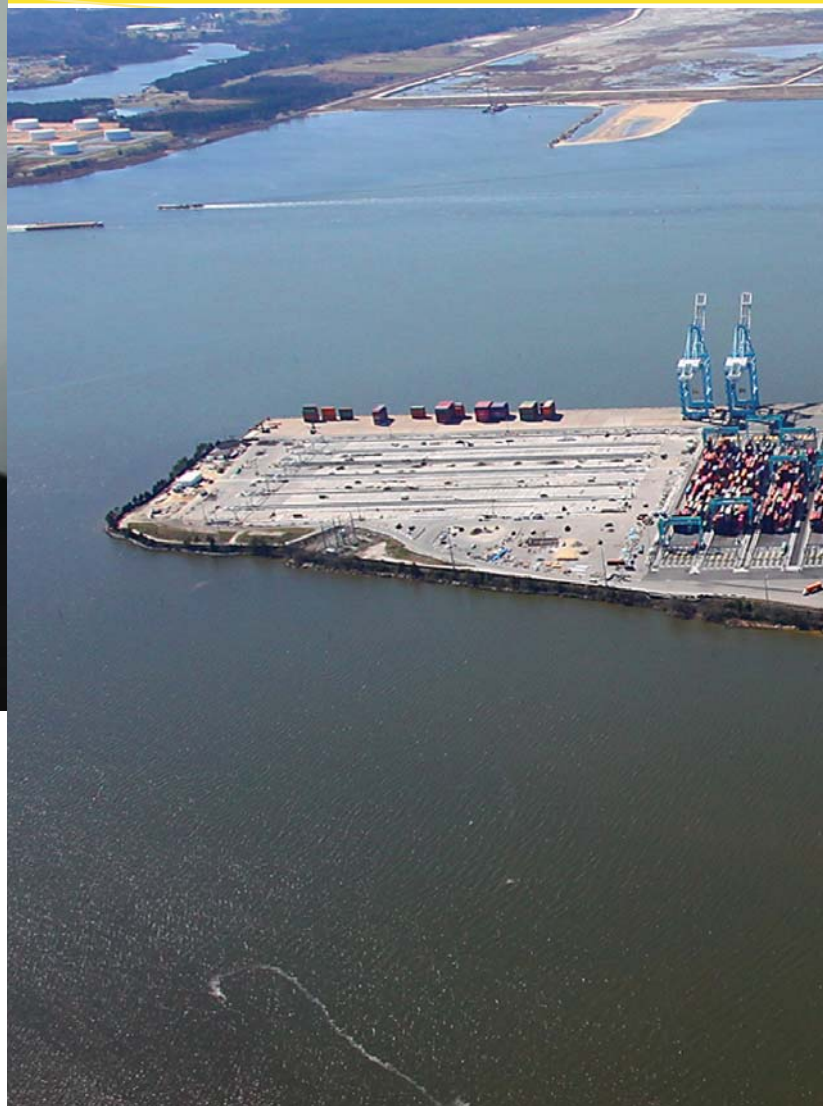


CEO & Executive Director,



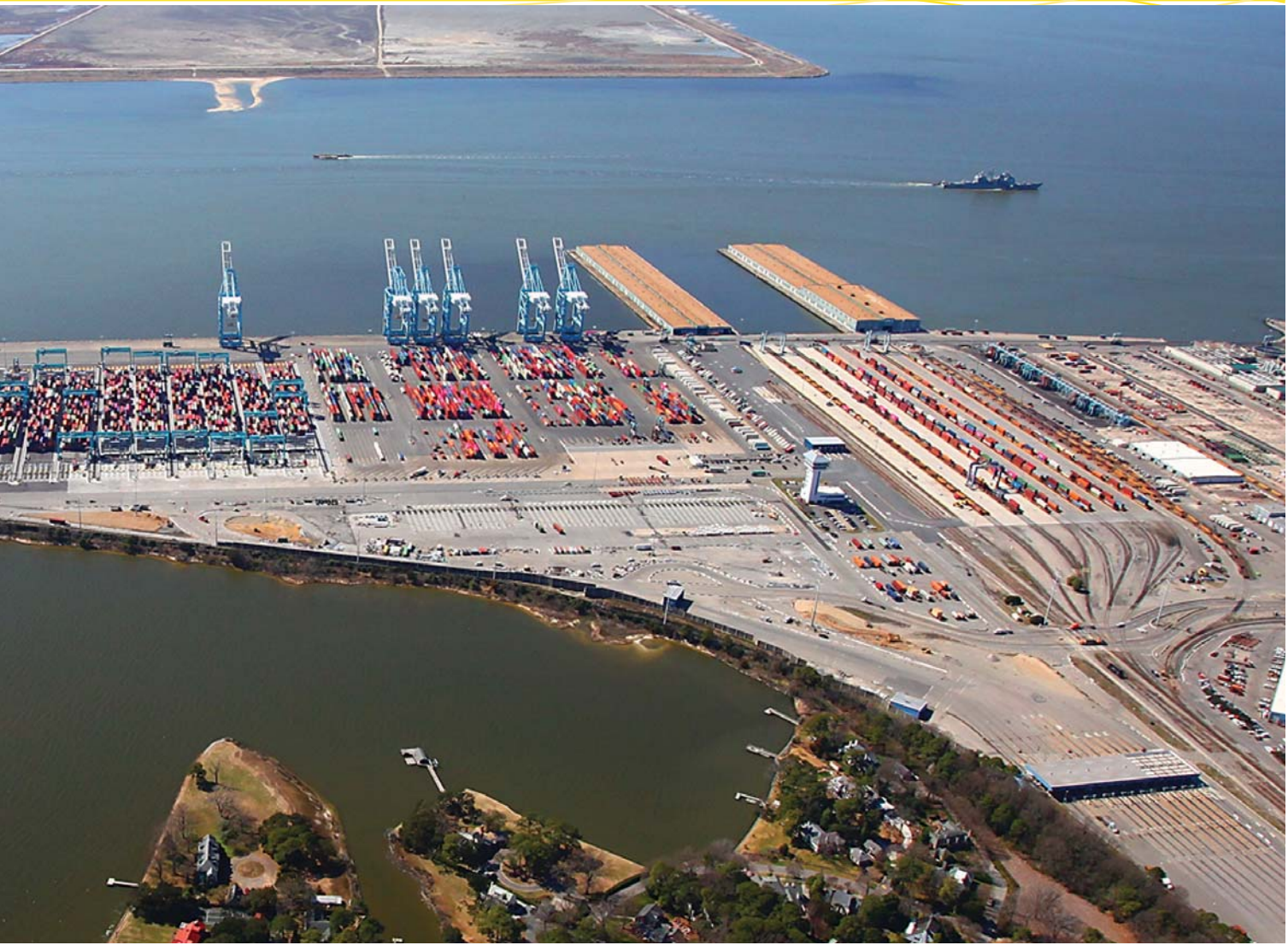
John F. Reinhart

John F. Reinhart is the CEO and executive director of the Virginia Port Authority (VPA). He is responsible for the broad programmatic areas of business development and growth, strategic marketing, finance, and operations of Virginia's marine terminal facilities: Virginia International Gateway, Newport News Marine Terminal, Norfolk International Terminals, Portsmouth Marine Terminal, Richmond Marine Terminal and the Virginia Inland Port.

Under his leadership, the goal has been to reinvent and accelerate the evolution of the port in order to become a catalyst for commerce and economic development and improve competitiveness in a global marketplace. Most stakeholders would agree that he is well on his way to doing just that. Reinhart comes to the commonwealth with deeps roots in liner shipping and the greater supply chain. Prior to joining the VPA, John worked for the Maersk organization for 23 years. He served from 2000-2014 as CEO of Maersk Line, Limited (MLL) and a member of the board of directors. During his career with Maersk, he held the positions of President, UMS, senior vice president and regional director. John received his bachelor's degree in general studies and political science from Ohio University and later earned his Executive MBA from the University of Michigan.

Last month we caught up with Mr. Reinhart, and he provided

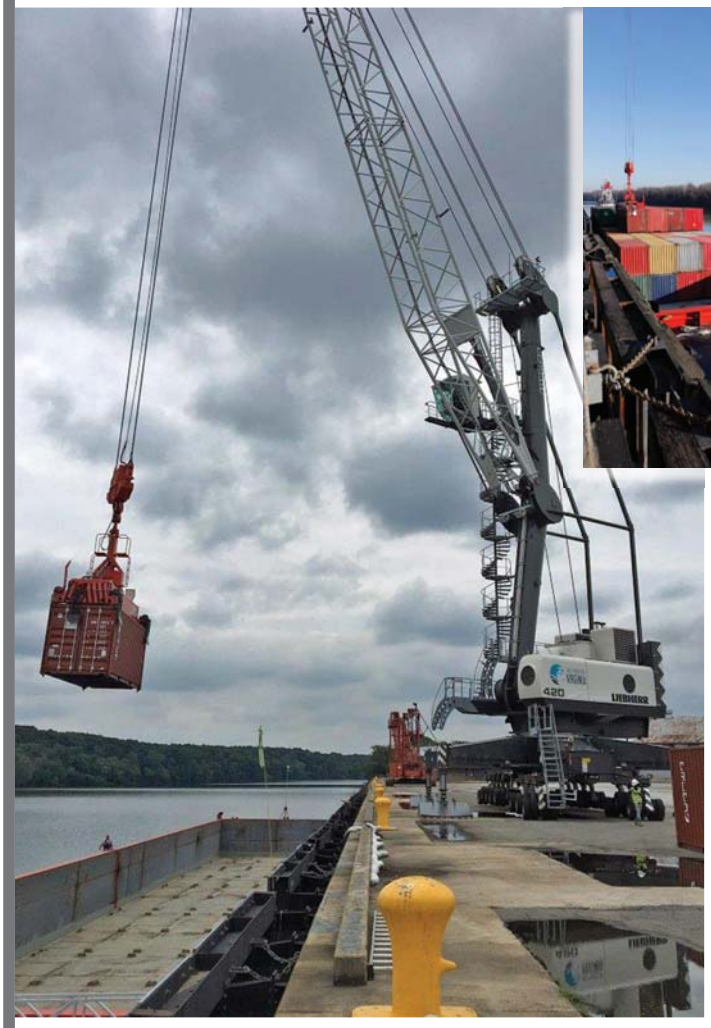
Virginia Port Authority (VPA)

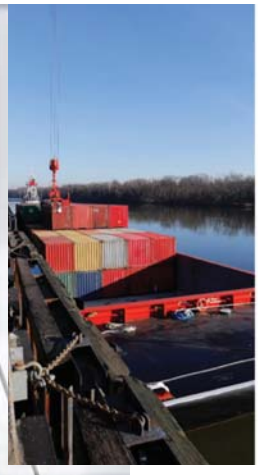


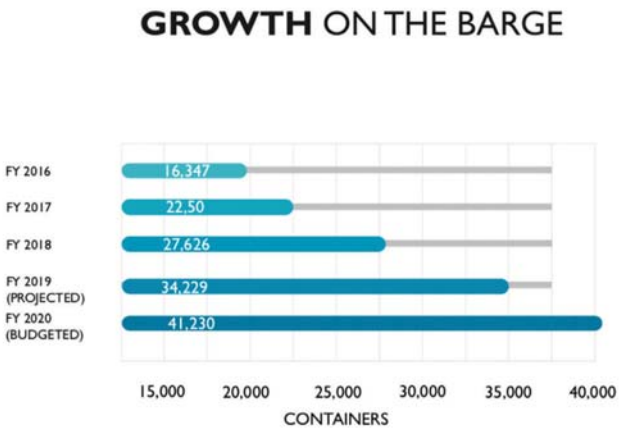
insights into what is driving business in the commonwealth of Virginia today, and where the port resides in that greater strategy.

As the environment becomes ever more important, ports like LA/LB on the West Coast have been given marching orders for a 'zero emissions' future, starting in 2030. What is your port complex doing about its environmental footprint today?

We use the Chesapeake Bay and local waterways every day and we see it as our duty to be good stewards of these public assets. Additionally, we work to be good, clean and responsive neighbors in the cities where our terminals reside. In that effort we employ very proactive sustainability and environmental policies and are taking the necessary steps to comply with, or get ahead of, any local or state mandates. Our Environmental Management System (EMS) is an industry-leading commitment to improving efficiencies and preserving our environment in accordance with International Organization for Standardization (ISO) guidelines. In fact, in 2018 we completed the migration of our facilities to the newest standard. After being recognized as the first East Coast port to meet and exceed requirements for the ISO 14001 standard 11 years ago, our port now meets the most current ISO 14001:2015 standard. And unlike most U.S. ports, our ISO program covers everything within the fence lines at every one of our terminals.







You are currently one of the deepest ports on the East Coast and planning to get deeper. How deep will the port get and what will be the ultimate impact of these improvements?

The effort to make The Port of Virginia the deepest and safest port on the U.S East Coast is advancing and we are preparing to issue an RFP shortly for the first phase of dredging. We expect to see dredges in the water by January 2020 and have the project complete by late 2024. The result of our Wider, Deeper, Safer effort will allow the largest ships in the Atlantic trade to call Virginia safely, without tide restrictions and have two-way, unimpeded passage to and from the harbor. The dredging project will take the channels to 55 feet deep and widen them in select areas up to 1,400 feet to allow for two-way traffic of ultra-large container vessels. The deeper harbor also gives ocean carriers the opportunity to load their ULCVs to their limits and therefore maximize the investment they have made in their ships. That reality, combined with the land-side investments at VIG and NIT will drive more ocean carriers to make Virginia a first-in or last-out port call. Such decisions allow exports and imports flowing across Virginia to reach their markets/destinations more quickly. When Wider, Deeper, Safer: the Norfolk Harbor will be without rival on the USEC.

Your other terminals (NIT in particular) are looking at automation as well, aren't they? Tell us about that development.

We are using technology to our advantage to drive efficiency and predictability across all phases of our operation and at all of our terminals. Behind the technology are jobs and our long-time labor partner, the ILA. The technology we are using at NIT mirrors what we are using at VIG: Navis N4 is the unified, terminal-wide operating system; ProPass; the truck-gates are 21st century, so technology allows drivers to quickly enter and exit; the new container stack yard is driven by 60 new rail-mounted gantry cranes (RMGs) that are remotely operated. Having operations that largely mirror one another allows for greater interchangeability of people between terminals and creates a better environment for data collection/sharing, comparison, problem-solving and operational management.

A port is only as weak or as strong as the modes that connect it to the final mile. How important are the inland ports – Richmond and Front Royal – and what are the future plans for these facilities?

The inland terminals are critical to our success and efficiency. Our cargo volumes are growing and ability to take a significant amount of cargo and immediately push it to an inland destination (or collect it at that destination and push it to the Norfolk Harbor) in a single train or barge move is important. Our plans are to continue to invest in these facilities to ensure we have the necessary capacity and capability to meet demand. The port is investing $26 million in two projects at VIP designed to improve traffic flow and safety on a local road and expand the terminal's overall cargo handling capabilities. The port is funding the projects through two infrastructure grant programs, one federal and one state.

The road project will be built using a U.S. Department of Transportation BUILD (Better Utilizing Investment to Leverage Development) grant. Specifically, $15.5 million will be used to build a highway-bridge, grade-separation at the at-grade crossing on State Route

Port of Virginia Environmental Commitments

The Port of Virginia is the first and only major port on the East Coast to have all its cargo handling facilities ISO 14001 Certified for Environmental Management
The James River Barge Line service utilizes tugboats powered by low emission engines reducing emissions by 38% on cargo moves to Richmond, VA.
The Port of Virginia utilizes two 2,000-horsepower ultra-low emission gen-set locomotives, which reduce nitrogen oxide emissions by 80% and consume 50% less fuel, compared to conventional diesel locomotives.
In 2018, The Port of Virginia's James River Barge Line eliminated 31,544 containers from interstate highways, reducing congestion and 3,671 tons of ozone contributing pollutants.
The Port of Virginia is the first port in North America to introduce hybrid shuttle carriers into its operating fleet, funded through a grant from the EPA.
Air quality from The Port of Virginia operations improves annually by as much as 10%. We've cut our emissions by more than 50% over the last decade despite a 12% increase in business.

658 (Rockland Road). The project involves building a new bridge on State Route 658 that will run above the existing railroad tracks.

Inside the terminal, the port is investing $3.3 million that will be matched by $7.7 million from the state's Rail Enhancement Fund. The $11 million project will expand capacity and improve cargo flow at VIP. The optimization project consists of building three new railroad tracks on terminal (bringing to eight the total number of railroad tracks at VIP), lengthening existing track and purchasing two pieces of hybrid, low-emissions cargo moving equipment.

We are committed to the Richmond Marine Terminal (RMT) and are investing there. Currently we are developing a secure, outside-the-gate drop lot for motor carriers that need to operate past normal business hours. In addition, we have purchased a new mobile harbor crane and a heavy-capacity forklift. We have invested in repaving, improvements to the on-dock rail, maintenance dredging at the berth, repairs to the wharf, improvements to the truck gate and technology upgrades. Many of these upgrades have been made using grant money from the state or federal government that gets matched with port dollars.

We have ample capacity to grow business at RMT and think a realistic ceiling is somewhere in the 60,000(+/-) containers-a-year mark. We are continuing to invest in the terminal and there may be new technology available that allows us comfortably and efficiently push past that ceiling. An important aspect of the barge that is sometimes overlooked is its environmental benefit. From an environmental standpoint the barge helps to reduce diesel emissions: since 2008 when the service began, the truck volume on I-64 has been reduced by more than 250,000 truck trips: had it not been for the barge, every one of those containers would have gone onto a truck and moved between RMT and the Norfolk Harbor and most would have been a roundtrip move. The barge also helps to reduces wear-and-tear and congestion on I-64.

The completion of the VIG rail expansion is almost complete. What percentage of your total cargo (TEU's) depart and arrive via rail (as opposed to trucks)?

The work at VIG was completed in May and now we are addressing normal punch-list items. We are focusing on growth and now have the necessary infrastructure to grow our rail product. Our near-term goal is to have 40 percent of our total cargo volume moving by train and the longer-term target is 50 percent. Our goal is to hit that 40 percent mark in by 2022 and thus far in FY2019 we are moving nearly 35 percent of our total cargo volume by rail and that number has been as high as 37 percent (in FY2017).

VIG has also nearly doubled its capacity for refrigerated cargo. That's important, given the billion dollar agri-business that exists within 250 miles of your front gates. How much more reefer traffic are you hoping to capture?

We will offer more than 2,300 total reefer plugs (VIG - 1212, NIT - 887, PMT - 120, RSA - 100) when construction is finished. We have not yet put a number on that area of focus, because we first needed to have the infrastructure. Now the infrastructure is in place and we are aggressively marketing our capabilities in this area. A significant amount of reefer cargo traditionally flowed over ports in the Northeast and was moved by truck into other markets. With the USDA's In-Transit Cold Treatment Program in place here, Virginia is now a destination and we can compete on a more level playing field.

This development has the potential to drive import volumes and could create opportunities for Virginia-based cold-storage warehouses and distribution centers to be trans-load destinations for this type of cargo: the cargo comes to a local warehouse (vs. one in the Northeast), gets loaded into trucks and moves to its destination. An off-shoot of that is more equipment in the region: the reefer containers, the equipment needed to keep them cold, the folks to maintain that equipment -- and possibly more new cold-storage investments. In addition, increased reefer business means the possibility of more USDA inspectors in the market and having that availability creates efficiency and can be a factor in driving this business in Virginia. When that equipment/support/infrastructure is readily available in the market, it creates opportunities for exports and we become more competitive on that side of the business.

All the Right Moves *(Finally)*

By Barry Parker

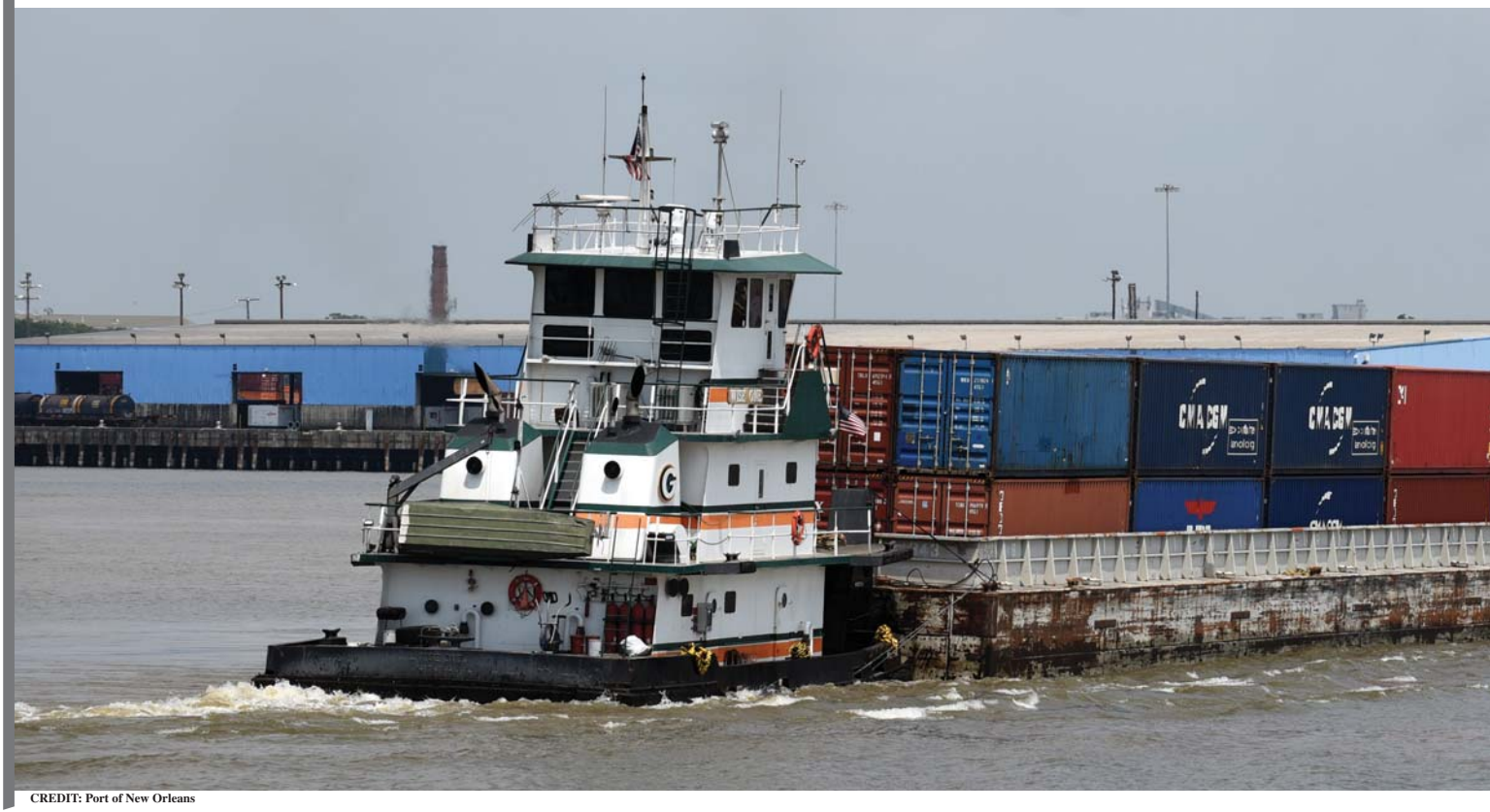
In the United States, landside infrastructure is at a crisis point. Congestion at the big hub ports, exacerbated by imperfect intermodal interfaces with surface transport serving cargo hinterlands is at the heart of the matter. As politicians bicker over a possible infrastructure package, the Highway Trust Fund, funded by taxes on gasoline and diesel fuel, has continued its downward journey towards further deficits (now $144 billion). And, where countless U.S. ports have reported record TEU volumes, an October 2018 report by the American Transportation Research Institute pegged the annual cost of congestion to the U.S. trucking industry at $74.5 billion in 2016.

These issues are not lost on transport planners; attention is increasingly moving to the water though coastal shipping must compete with surface transport modes. The trucking and rail lobbies are powerful and well funded, long entrenched with cargo owners. Eventually, when the discussion turns to shortsea shipping, container-on-barge and/or the uniquely American 53' roll-on/roll-off modes have emerged as the preferred choices to improve efficiencies.

(HANDICAPPING) THE SHORTSEA EFFORT

Coastwise transportation in the United States requires American built tonnage. The projected costs of building a coastwise feeder vessel, handling containers delivered to deep draft ports and delivering for the final short leg to smaller niche ports, would drive the cost of (coastwise) waterborne transport to levels uncompetitive with truck or rail. Add to that the double whammy of the Harbor Maintenance Tax (HMT) when handling that container twice, and the formula has been shown to have no sea legs.

Separately, more than a decade after its inception, the U.S. Mar-



CREDIT: Port of New Orleans

Marine Highways Gain Traction in the Intermodal Supply Chain

itime Administration's shortsea shipping initiative, the so-called Americas Marine Highway program, is finally gaining traction. The DOT's initial justification for shortsea shipping was to reduce road congestion, but its mandate has now broadened to include environmental concerns and a more efficient supply chain.

Today, the federal government is finally giving the issue more than lip service. With freight levels expected to increase by more than 40% over the coming decades (Marad projections), a series of 2019 Marad grants saw $6.8 million awarded for three shortsea projects. $3.2 million went to a project sponsored by the Port of New Orleans, for continued buildout of a container-on-barge service that runs between Baton Rouge and New Orleans (route M-55). Another container-on-barge run, the Port of Virginia (and Norfolk Tugs), received $1.8 million to expand an existing service (M-64) between Richmond and Hampton Roads terminals. A similar amount, $1.8 million, went to Harbor Harvest, a newly launched service linking Long Island with southern Connecticut (circumventing the worsening I-95 and I-495 snarl in the NYC metro area.

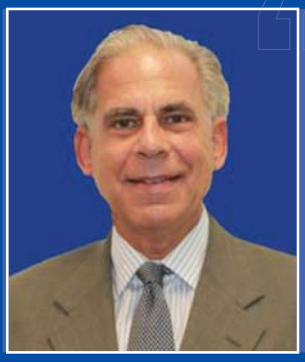
The three programs mentioned above, today small in actual volumes, represent important nodes in the broader supply chain. For example, cargo loaded at Baton Rouge actually originates further up the river system. Seacor AMH, operator of the M-55 lower Mississippi River service, gathers empty containers out of Memphis (a junction point for Class 1 railroads), and barges them down to Baton Rouge. On the export side, increased petrochemical activity has led to an uptick in exports of cargo, notably polymer resin out of Louisiana. The containers are then loaded up and sent down to New Orleans.

In 2018, more than 27,000 boxes were moved in this way, off the highway, in a more efficient and environmentally correct fashion. Local entrepreneurs are even aggressively pushing for the construction of fit-for-purpose, self-propelled inland tonnage to greatly expand the effort between St. Louis and the GoM.

Separately, shortsea shipping expert Bob Kunkel and his nascent Harbor Harvest operation envision collaboration with trucking companies to obviate the metro area highway bottleneck delays. Harbor Harvest benefits from a subtle but important change in criteria necessary to obtain designation as a Marine Highway; services hauling palletized or individually packaged cargo are now eligible. This broadened mandate comes as transport paradigms for local distribution are shifting, with greater emphasis on the 'last mile' delivery.

THE BIG PICTURE: SHOW ME THE MONEY

Previously a matter of congestion, efficiencies and the environment, shortsea shipping has finally caught the attention of the bankers. Edward M. A. Zimny, President and CEO of investment bank Seabury Maritime LLC recently weighed in with MLPro, saying, "With hub ports increasingly backed up on the landside, the big ports will need to work closely with their regional and complimentary regional ports. The new ecosystem will see multi-modal links on the landside, for cargo originating inland, but will also finally experience a viable coastal ocean alternative transportation, likely taking the form of container or trailer on barge, as a vital connector to out ports." Asked to elaborate, he explained, "Examples of these



With hub ports increasingly backed up on the landside, the big ports will need to work closely with their regional and complimentary regional ports. The new ecosystem will see multi-modal links on the landside, for cargo originating inland, but will also finally experience a viable coastal ocean alternative transportation, likely taking the form of container or trailer on barge, as a vital connector to out ports.

– Edward M. A. Zimny, President and CEO of investment bank Seabury Maritime LLC

feeds are the Delaware River ports, in between New York and Norfolk, and New London, on up the coast from New York/New Jersey. We've have been fortunate to be involved in a recent transaction advisory with both of these, and a regional offering is key to the value proposition to the two and their respective business cases."

Ongoing projects funded by DOT's marine highway program also include a cross-harbor container barge in New York- linking the container ship docks in Port Newark, New Jersey with the waterfront in Red Hook, Brooklyn. The project sponsors, New York City's Economic Development Corporation and the Port Authority of New York and New Jersey (PANYNJ), received almost $300,000 in the late 2018 AMH funding round. In turn, they hope to further expand this service, linking to mid Atlantic and Northeast ports.

One project in the works, which has already garnered AMH funding after receiving Marine Highway designation is a potential barge service linking the Brooklyn docks in New York Harbor with Davisville, RI, on Narragansett Bay. In late 2018, $855,000 from Marad was earmarked for the purchase of dockside equipment in Rhode Island. Marad, in a prepared statement, said, "The barge service will include a dedicated run twice a week utilizing one 800 TEU capacity deck barge transporting north and south bound import and export cargo via the East River, Long Island Sound, Block Island Sound, and Narraganset Bay."

If and when money becomes available, Marad could make more AMH awards in late 2019, twice in 2020 and 2021, and in early 2022. But Marad is not the only funding source; short sea services have benefited from regional funding sources. In New York, the EDC has issued a Request for Proposals seeking terminal operates who would contract barge operators to distribute food and produce presently moving through the Hunts Point market by truck. As contemplated, the EDC would re-purpose landside warehouses into a marine terminal, adjacent to the East River in the Bronx. This marine effort is part of a broader 'Freight NYC' initiative, described as a $100 million plan.

The EDC and the PANYNJ, working jointly, have also spearheaded formation of a new working group, the North Atlantic Marine Highway Alliance, which will identify cargo and explore barge transportation from Maryland to Maine. The new group's mandate is support the realization of a financially viable, regional barge network.

Marad, in describing the nearly $300,000 award mentioned above, explained, "The grant will assist with funding a planning study to look at how marine highway services can be expanded throughout the Northeast region from New York Harbor to other points. The study will provide the data necessary to establish the business case to support shipping container movement by barge between terminals and beyond."

TWO STEPS FORWARD; ONE BACK

Not all short sea projects have been successful. A barge service linking Stockton, California with the deepsea container docks at Oakland saw more than $10 million in funding from DOT Tiger grants for cranes and other equipment. In 2015, after failing to attract even modest amounts of container traffic, the service was shut down. Various reasons were cited for its failure, among them the failure to cement a tie-up with a major ocean carrier. In the end, bad timing may have played a bigger role. Around that time, the cost of fuel had dropped precipitously, which worked in favor of surface alternatives.

Even the Richmond Express in Virginia took a decade to get on its feet, at no small cost. Maritime consultant Donald Frost, a Connecticut Port Authority board member, weighed in on the difficulties which face shortsea startups. "All short sea shipping proposals focus almost entirely on reducing highway traffic; nobody works with the cargo shippers," he insists, adding, "The Gold Coast of Connecticut is too close by road to New York City, so the very competitive consumer goods sector opts for trucking. Certainly for consumer goods, in this age of Amazon Prime and just in time inventory, barges are too slow."

Mr. Frost's remarks hit home for this nascent but promising market. Consider that Port of Virginia CEO John Reinhardt brings an intimate knowledge of the industry and its influencers. He was previously the top man at Maersk's U.S. subsidiary. Hence, it is probably no accident that fourteen ocean carriers of-

fer bills of lading with RMT as the final destination or point of origin for cargo. The Richmond terminal also coordinates with Columbia Coastal Barge, a long established service in the mid-Atlantic with scheduled container on barge runs linking Norfolk, Baltimore and Philadelphia. As is the case with successful short sea runs in Europe, the waterborne route from Norfolk into Baltimore is actually shorter than a comparable highway run. After receiving 2019 AMH funds, Reinhart offered, "We are investing $700 million to expand the capacity at The Port of Virginia and it is important that we grow our barge capabilities in parallel." And grow, it has: the service in 2018 moved more than 31,000 boxes between Richmond and Norfolk.

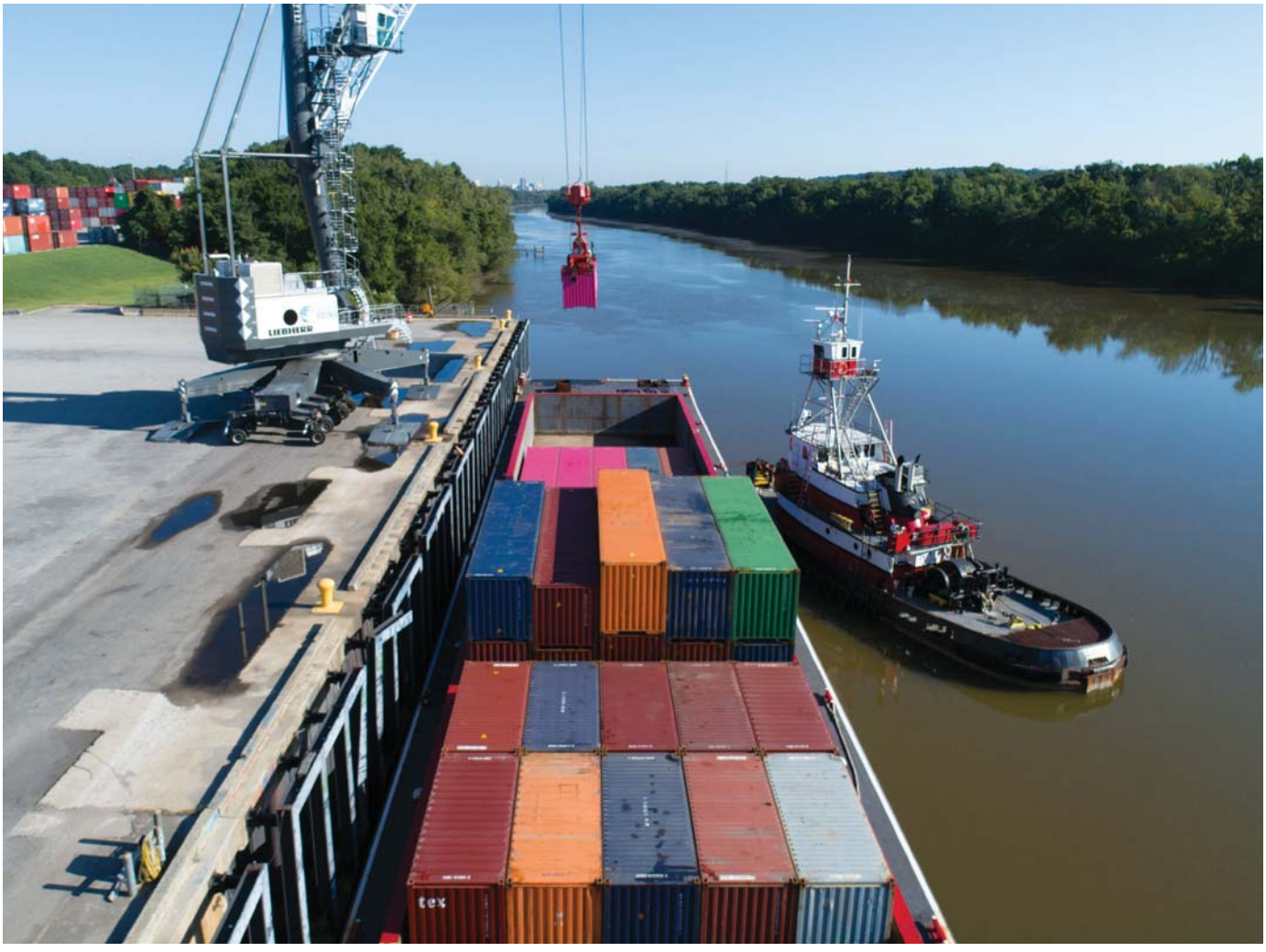
Like the James River run, the Seacor AMH service in Louisiana is a key part of petrochemical supply chain there. Scheduling is closely coordinated with ocean carriers, including CMA CGM, on the export side. To Mr. Frost's point, congestion mitigation is a component of short sea success – but, not the only one.

Brent Dibner of Boston-based Dibner Maritime Consulting, told ***MLPro***, "Sometimes, the simple economics of trucking cargo may defeat a well intentioned barge service. Where cargo is to be barged, there may well be a truck component, in the form of drayage costs and waiting time around a terminal. These can substantially increase the cost." He continued, "In some cases, it's very hard to compete with the truck economics." At Richmond, VA, the barge terminal is very near to I-95, helping to make the barge competitive because of the convenient road/waterfront interface.

LESSONS LEARNED

"Build it and they will come" does not apply when it comes to shortsea shipping. Rather, and as the concept evolves, it will be driven by the crushing increases in freight that Marad says will soon overwhelm domestic highways and rail. Similarly, the realization that largely under-utilized rivers and coastal waterways – what the Waterways Council, Inc. (WCI) calls the 'silent R' in our intermodal equation – deserve the same consideration as every other aspect of the greater supply chain, will yield yet another gem of wisdom.

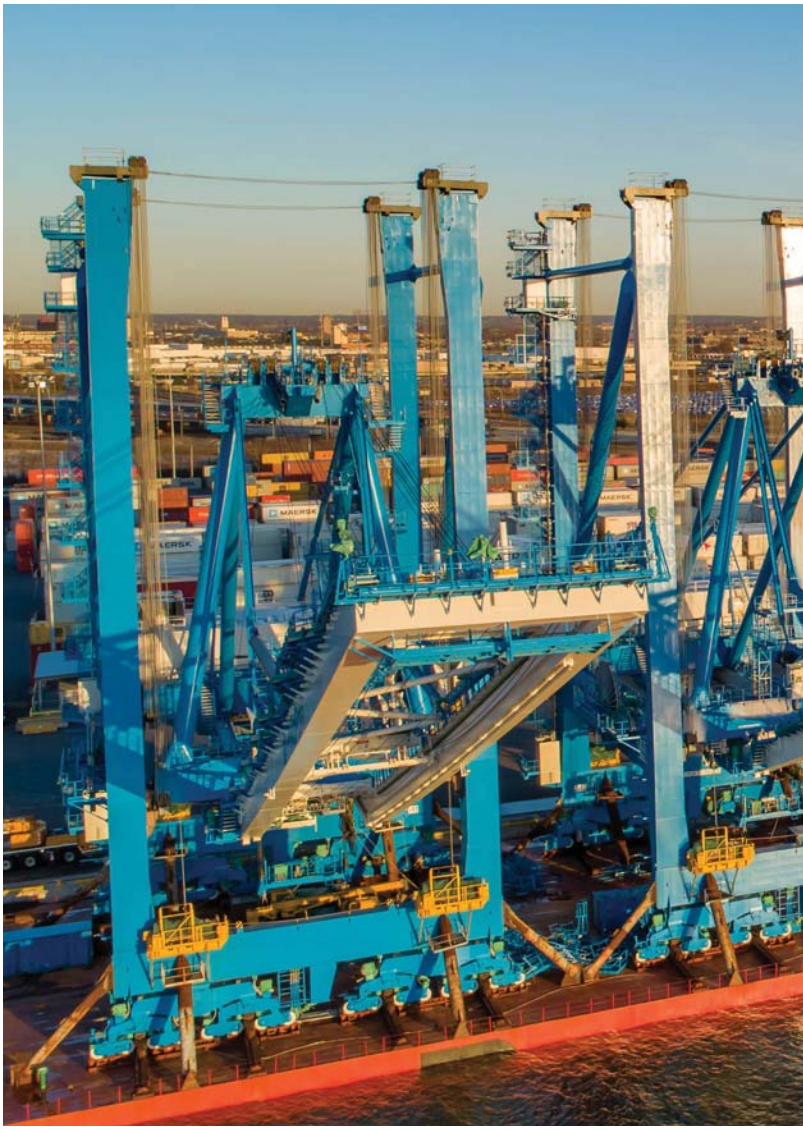
The supply chain is only as strong or as bad as its weakest link. At the moment, that weak link is the inefficient interface between ports and the hinterland. And, that's got to change. Shortsea shipping can get us there.



RAMPING (UP) TO LIFT PORT PRODUCTION

As North America's larger ports continue to increase capacity, dredging and air drafts are receiving the attention they deserve. As bigger post-Panamax boxships begin to arrive, none of that means anything unless truck turn times and TEU moves per hour can be improved. The innovative and evolving supply chain of cranes is the ultimate answer.

By Joseph Keefe



As 2019 passes its midpoint, the backlog 2019, one firm, Shanghai Zhenhua Heavy Industry Co., Ltd. (ZPMC), a global heavy-duty equipment manufacturer listed on the Shanghai Stock Exchange, finds itself as the undisputed leader of the container crane supply chain. That's right: the supply chain itself. That's because ZPMC's turnkey model is unlike any other in this market sector, and its innovation arguably second-to-none. Moreover, the firm's North American backlog is robust and it is growing.

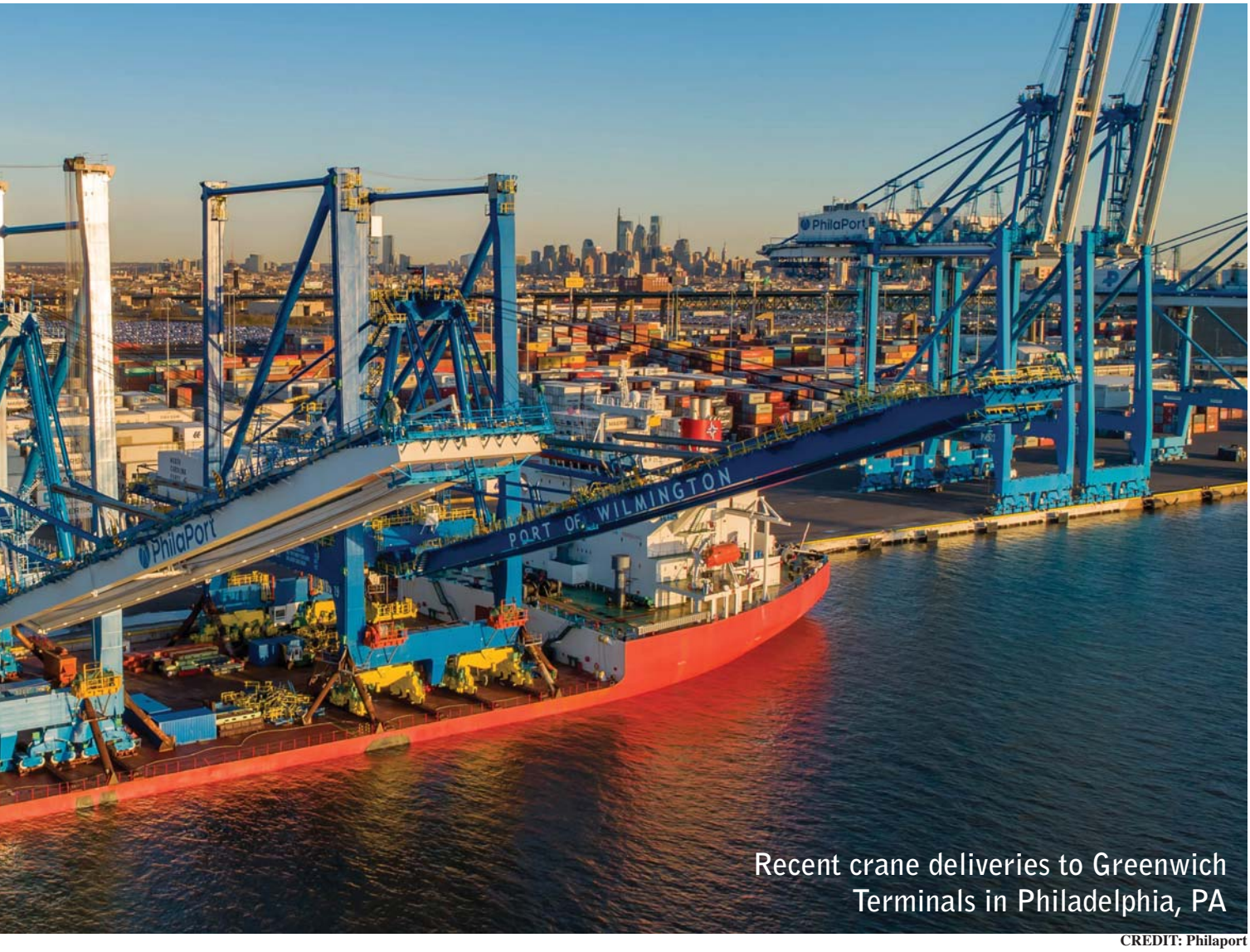
At a time of unprecedented port growth in this hemisphere, there are very few variables which can slow this juggernaut. A trade war is one of them.

POLITICS

As the trade spat between the U.S. and China heats up, there is much at stake. ZPMC has as much skin in the game as anyone. In late June testimony before the U.S. International Trade Commission in Washington, port advocates weighed in on the issue. Glenn Wiltshire, Acting Chief Executive and Port Director at Port Everglades, testified, "It is of critical importance to the Port for the Committee to remove gantry cranes, classified in subheading 8426.19.00, Harmonized Tariff Schedule of the United States (HTSUS), from the list of items that would be subject to ad valorem duty up to 25 percent. A 25 percent duty would immediately increase Port costs by $10,350,000 for a current gantry crane order."

ZPMC is currently the only company in the world that manufactures low profile super post-Panamax rail mounted container gantry cranes. There has not been a rail mounted container gantry crane manufactured in the United States in many decades. In separate testimony, Kurt Nagle, the outgoing President and CEO of the American Association of Port Authorities (AAPA), was more direct, saying, in part, "… we are deeply disappointed ship-to-shore cranes and other tariff codes that include port equipment are back on the proposed List 4 ... At a time when infrastructure investment is a national priority, we urge you to avoid increasing the cost of infrastructure through the imposition of new tariffs."

As this issue of ***MLPro*** went to production, AAPA and its member ports were making best efforts to ake sure the ship-to-shore gantry cranes would not be added to the tariff list. That's because the increased cost of these cranes might cause ports to rethink their expansion plans to handle the new mega-container vessels. It might also prompt them to look at yet another rapidly emerging ZPMC turnkey service.



Recent crane deliveries to Greenwich Terminals in Philadelphia, PA

CREDIT: Philaport

RAISING CRANES

The profusion of projects has become routine for ZPMC USA in its third full year as official service provider for ZPMC North America in the U.S. and Caribbean. ZPMC handles all of it in house. Beyond this, the firm has opened six U.S. service centers. Each service center serves as a central location for customers to get local service. Recently, the raising of existing cranes has become much more common. Price and timing are the two reasons why.

"It is a bit of both," explains Jeff Rosenberg, ZPMC Crane Service's VP of Sales & Marketing, who adds, "New crane deliveries are now 12-18 months away. We typically we can raise a crane in three to four months (after engineering), and at about one-third the price of a new crane." That latter metric – with the escalating trade tensions – might become even more important. That's because, says Rosenberg, new cranes are going for $10 to $12 million, and raising a crane costs about $4 million. Given the uncertainty in today's trade climate, it isn't hard to see why ZPMC's unique ability to raise and/or alter an existing structure is so attractive.

In May, Rosenberg told ***MLPro*** that ten cranes at APM in Los Angeles had been raised; four more in Charleston and three of nine in New Jersey had been completed. Scores more, internationally, had also been accomplished. In fact, as much as 30% of ZPMC's existing business involves crane alterations.

The same proprietary care and expertise that ZPMC applies to its new build efforts also goes into any alteration of existing units. That's because, insists Rosenberg, it isn't just about raising a crane, it involves doing it as efficiently as possible. "We also relocate cranes using our own SPMT's (self-propelled modular trailers)," explained Rosenberg, who continued, "This is a big plus for the terminals as we can easily move cranes around to place them out of the way while they are being worked on, to avoid conflicts with terminal operations."

Rosenberg makes it sound easy, but there is far more to raising

a crane than meets the eye. Myriad design issues precede every operation. These include, but are not limited to:

How high do we go?	Can dock handle the weight of newly raised crane?	Can it be jacked up off the dock?
Which jacking frame to use?	How will increased height affect Crane stability?	Do you to Jack up off the crane?
Weld or bolt leg inserts?	What other upgrades make sense at same time?	Will it impact hoisting machinery?

As port customers are looking to upgrade local equipment, two big issues need to be considered when contemplating what to do next. Specifically, as they look for height, the weight of these new cranes is becoming a factor as existing docks were not built for the new wheel loads.

The purpose of 'crane raising' is to accommodate the large post-Panamax tonnage, but this involves (to date) an increase in height only, as opposed to also having an increased outboard reach. The higher crane really does provide that much more of an advantage, especially given the ever-increasing beam of these newer vessels. Rosenberg agrees, saying, "We haven't been asked to extend any booms yet. I also believe there was some forethought on the part of the terminals, ordering cranes with booms for 22 TEU's width."

Now, as the enlarged Panama Canal brings exactly what was promised, that sort of forethought is also proving to be prescient. "Yes, it's all about larger ships. We are in the 'raising cycle' right now. Most terminals have at least a few new cranes large enough to attract the larger ships. Now they are raising their older cranes to increase capacity." And, it goes without saying, quickly increase capacity.

Indeed, raising STS cranes is fast becoming the signature project for ZPMC USA. For his part, Rosenberg isn't aware of any other firm that also plays in this sandbox. ZPMC has four proprietary jacking systems available for crane raise work in the U.S. that accommodates varying pier loading situations and height increases. Two of the jacking frames load off the dock, and two are designed to jack the crane from its own structure to avoid putting any extra weight on the pier. Rosenberg explains, "These are patented systems; devised and designed by ZPMC."

The scope of these projects is enormous. In fact, the tallest port crane in North America was recently raised to that height by ZPMC, which raised the crane 33 feet (10.08 meters) to prepare for Ultra-Large Container Vessels calling at APM Terminal's Pier 400. In a landmark project that kicked off July 1, 2016, ZPMC upgraded 10 cranes for APM's Pier 400 Terminal. The cranes can now service ships carrying up to 20,000 twenty-foot equivalent containers (TEUs). Prior to this crane raise, the largest vessels that could be serviced at the Port of Los Angeles were 13,000 TEUs.

"We also relocate cranes using our own SPMT's (self-propelled modular trailers)," explained Rosenberg, who continued, "This is a big plus for the terminals as we can easily move cranes around to place them out of the way while they are being worked on, to avoid conflicts with terminal operations."

- Jeff Rosenberg, VP, Sales & Marketing, ZPMC Crane Services

ZPMC

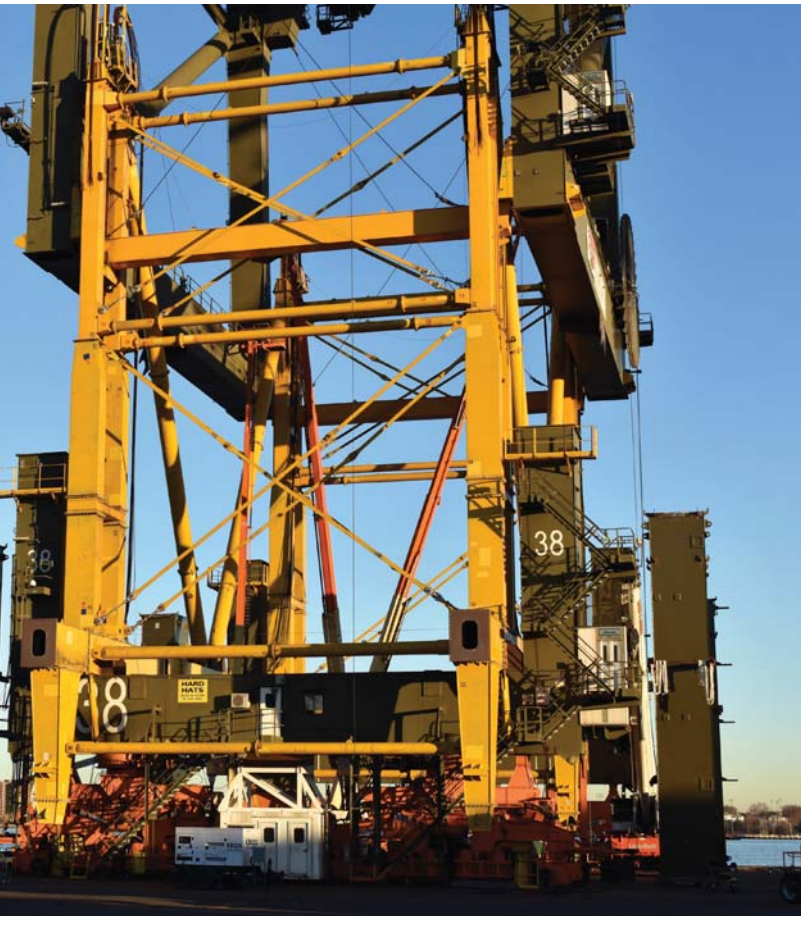
ZPMC impressively owns and operates 25 heavylift ships ranging in capacity from 60,000 to 100,000 DWT, delivering products all over the world. ZPMC North America is the operating company for North America, and ZPMC Crane Services is its North American service subsidiary. The firm boasts annual revenues of $5 billion and employs more than 30,000 personnel. With eight factories in the Shanghai area, the firm claims a 70% global market share of the STS Crane market. What is particularly noteworthy is that when ZPMC sells a crane, the sale often involves the manufacture of that crane, its transport from point A to point B, the dismantling and/or removal of the old crane and the in situ delivery of the new one. That menu is about to expand.

The firm delivered more than 200 STS cranes in 2016 alone. 2019, especially on this side of the big pond, promises more of the same. Nevertheless, and beyond the crane raising trend, ZPMC isn't sitting on its hands. For example, automation is the hot topic now. Rosenberg told ***MLPro***, "ZPMC has had numerous successful automation projects around the world. LBCT is the flagship in the USA." Beyond this, a smaller, second hand crane market is emerging. Rosenberg says that ZPMC will get involved, when and if the project makes "regional" sense.

CLEAR GOALS IN AN UNCERTAIN CLIMATE

The process of acquiring or shedding a container crane is a carefully planned event – in and of itself a supply chain; all its own. The success or failure of that kind of operation can be the 'make or break' for any port in the fast moving world of ever bigger boxships. No one wants to get left behind in the competitive quest to keep and grow TEU market share. Now, with the rapidly expanding crane raising option, ports not only get it done faster, it'll be far cheaper.

International trade disagreements may drive the decision process, but if the newest post-Panamax crane is out of reach, it is likely that the raising of an existing one will not. If so, it is ZPMC that can be thanked, for that.



MARITIME LOGISTICS PROFESSIONAL

A Closer Look

Credit: U.S. Navy photo by Mass Communication Specialist 3rd Class Isaac Maxwell/Released

Sailors secure cargo aboard the Arleigh Burke-class guided-missile destroyer USS McCampbell (DDG 85) during a replenishment-at-sea with the dry cargo and ammunition ship USNS Ameilia Earheart (T-AKE 6). McCampbell is forward-deployed to the U.S. 7th Fleet area of operations in support of security and stability in the Indo-Pacific region.

US NAVY PORTS

Delivering parts, fuel, mail over 52 million square miles

In Port and at Sea: *NAVSUP Fleet Logistics Center Yokosuka Supports Navy Ships and Crews. Understanding how that happens can benefit commercial stakeholders, as well.*

By Edward Lundquist

As the post-Cold War Navy once again faces near-peer competitors at sea, it must reposition itself and step up sustainment of ships at home and abroad. While admittedly a goal in logistics is to provide material and services in a stable and predictable fashion, so that operations can proceed unimpeded, that goal sometimes runs counter to the unpredictable nature of military operations. That is especially true now, as the Navy is using the concept "dynamic force employment" to keep potential adversaries off balance.

Far Flung Sealift Support

To provide support to the fleet, the Navy Supply Systems Command (NAVSUP) operates eight Fleet Logistics Centers (FLCs) around the world at Norfolk, Jacksonville, San Diego, Puget Sound, Pearl Harbor, Bahrain, Sigonella, and Yokosuka.

Formerly known as the U.S. Naval Supply Depot and later the Fleet Industrial Supply Center, the NAVSUP Fleet Logistics Center Yokosuka (FLCY), Japan has an area of responsibility (AOR) in the Indo-Pacific region that covers 52 million sq. miles and is the largest overseas logistic center in the U.S. Navy, second only to Norfolk in terms of volume.

Capt. Frank Nevarez, the commanding officer (CO) of FLC Yokosuka said the FLCs have similar missions, but the scope and magnitude of the functions vary because they have different customers in different parts of the world. "We support Commander U.S. Seventh Fleet, and the forward-deployed Seventh Fleet operational units, including 12 surface combatants plus a carrier in Yokosuka; eight ships at Sasebo; and four fast attack submarines and two submarine tenders in Guam. We support the aviation squadrons and the Military Sealift Command (MSC) ships, as well as various shore installations and activities. We provide support in eight nations and 14 locations from Korea to Diego Garcia and over to Singapore, Australia and Hong Kong."

The FLCY answers to the Navy regional commanders in Japan, Korea, Singapore and the Marianas. "We handle inventory management for the Navy to support our forward deployed naval forces. We support base operations; management of hazardous material; industrial support for maintenance; household good shipments; and contracting support that is not associated with military construction. We also provide the supply function for Naval Facilities Engineering Command (NAVFAC) in the Seventh Fleet AOR," Nevarez said.

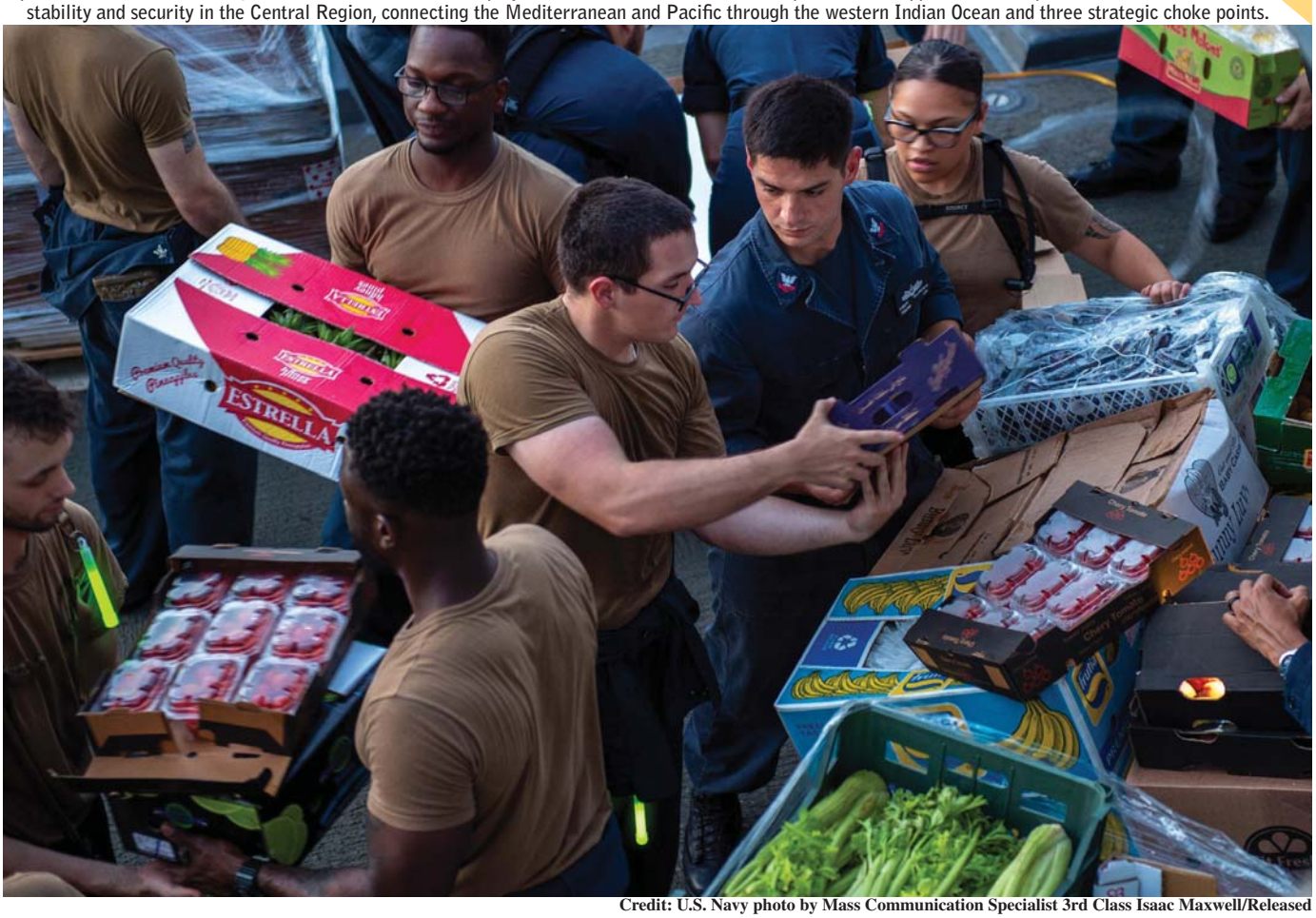
Nevarez' command employs about 1,200 people across the Indo-Pacific region. The FLCY currently has 33 officers, 270 enlisted personnel and 170 U.S. civil service employees throughout the AOR, and about 716 are local national employees known as master labor contractors.

Leaning Forward

Ships send a logistics requisition message or LOGREQ in advance of any port visit, or for delivery at sea "If it's food, we work with DLA Troop Support; if it's fuel, we coordinate with DLA Energy; and if it's parts, we work with our folks. In the case of an underway replenishment, we would schedule a T-AO or T-AKE to load out in a port like Sasebo, which is a major loading hub for Military Sealift Command (MSC) replenishment ships, and deliver everything to the warships at sea."

FLC has deployable Contracting Officers and Logistics Sup-

Sailors assigned to the Arleigh Burke-class guided-missile destroyer USS Nitze (DDG 94) off load cargo during a replenishment-at-sea with the fleet replenishment oiler USNS Big Horn (T-AO 198). Nitze is deployed to the U.S. 5th Fleet areas of operations in support of naval operations to ensure maritime stability and security in the Central Region, connecting the Mediterranean and Pacific through the western Indian Ocean and three strategic choke points.



Credit: U.S. Navy photo by Mass Communication Specialist 3rd Class Isaac Maxwell/Released

port Representatives (LSR) to provide boots-on-ground logistics assistance for austere ports and exercise support. "Our LSRs work with the ships, the schedulers, base operations, base supply officers, and coordinate the movement of material to the ships," Nevarez said. "Our fleet freight router will determine where a ship can pull in to get resupplied, or where they can be staged for replenishment at sea from one of the MSC Combat Logistic Force ships."

When parts fail, systems can operate with reduced effectiveness, or not work at all. Ships submit casualty reports (CASREPs) when gear breaks or is degraded, and include what parts are needed to rectify the situation. Parts requisitions to correct CASREPs are given high priority and are tracked very closely. "CASREPs can limit a ship's ability to conduct its mission, so the parts are expedited and micromanaged," Nevarez said.

He said the FLCY teams help coordinate parts movements. "If something is coming into a commercial airport and then flown out to a ship at sea, it may have to clear customs, or we may have a foreign military agreement to help facilitate the processing and movement of those parts or material for us," Nevarez said.

The estimated contracting capacity to support all those foreign port ship visits over the next five years could reach $6 billion, not including ships coming into the Navy ports. "We do approximately 700 port calls a year, supporting 160 ships, 185 aircraft and nine submarines," he said.

While it may seem straightforward, Nevarez said it can sometimes be a challenge to fully understand the requirement from the end user, whether it's a ship or aviation squadron. Support is often provided through contracts. In dealing with local vendors and ship Husbanding Service Providers (HSP), there can sometimes be cultural and language barriers. Having a Contracting Officer on site provides attention and oversight and ensures contract actions are appropriate and legal, especially in light of the integrity issues that arose following the Glenn Defense Marine Asia affair back in 2013.

The HSP contractors have already been vetted and approved and can bid to support individual port calls, providing liberty launchers, fuel, trash removal, pumping out chemical holding tanks and oily wastewater in the bilges, and delivering a myriad of other services. And the process allows new companies to get certified. "No longer will you have the same company providing husbanding support services all the time," said Nevarez. "It opens up competition."

Payment functions have been passed from the individual ships

> *Our LSRs work with the ships, the schedulers, base operations, base supply officers, and coordinate the movement of material to the ships. Our fleet freight router will determine where a ship can pull in to get resupplied, or where they can be staged for replenishment at sea from one of the MSC Combat Logistic Force ships.*
>
> – Capt. Frank Nevarez, Commanding Officer (CO), FLC Yokosuka

to Commander, U.S. Pacific Fleet to manage. LOGREQs have been standardized so ships don't ask for something they don't need or shouldn't have, and to remove the ship's supply officer from the financial transaction. "If you're an aircraft carrier, this is what you're going to get; and if you're a guided missile destroyer, this is what you're going to get," said Nevarez. "It's more of a 'push' than a 'pull.'"

Fuel for the Fleet

To provide the fuel to power the military, the Navy and the other services are responsible for maintaining and operating their own infrastructure, while Defense Logistics Agency (DLA) Energy procures and owns the fuel. "We own – or in some cases contract for – the tanks, trucks and barges, and we manage the daily moving of fuel to our customers."

Within the Seventh Fleet AOR, Indo-Pacific region FLC Yokosuka manages nine Defense Fuel Supply Points; eight deep draft terminals; and two supported airfields. Fuel can be delivered to ports and bases by pipeline or truck, or in the case of Yokota, by train.

From strategic to tactical, DLA and FLCY work together. Nevarez said DLA handles the "strategic" by replenishing tanks, while FLCY takes on the "tactical" by coordinating with the base, ships, barge contractors, port operations, and environmental for delivering the fuel and ensuring proper fuel samples are analyzed for quality control.

Within the Navy logistics enterprise, operations are accomplished with GOGO, or government owned/government operated), GOCO (government owned/contractor operated) or COCO contracts. For example, fuel delivery in Diego Garcia is a GOCO operation, with a contractor delivering the government fuel. In Singapore or the Philippines, DLA has a COCO existing contract with vendors who supply their fuel.

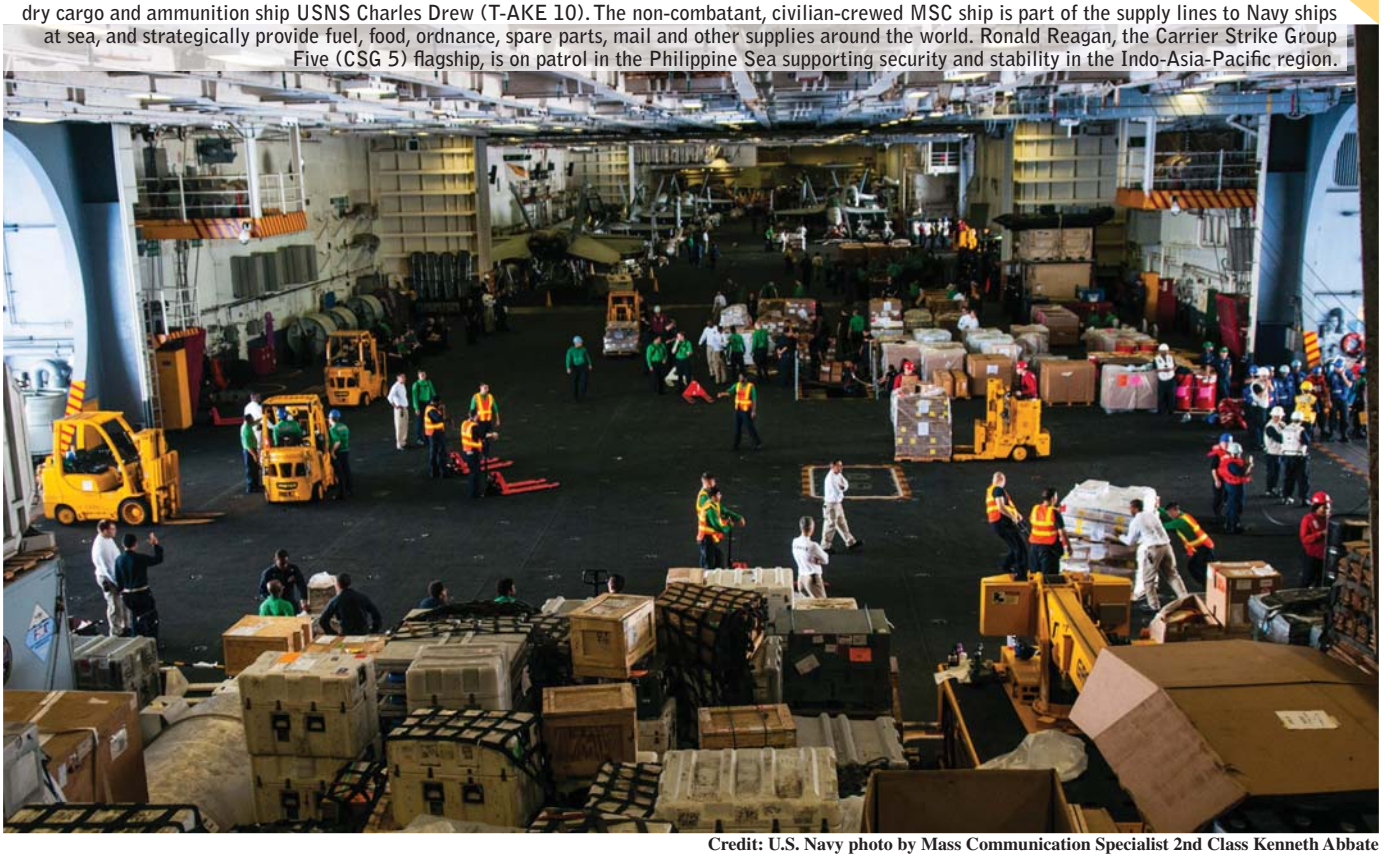
DLA Energy buys fuel on the open market. Nearly half of the Navy's fuel is managed by FLC Yokosuka in the Indo-Pacific region; 33 percent of all of the Navy's fuel, and 10 percent of DoD's fuel, is located in the Seventh Fleet AOR. Nevarez' team also supports some Army and Air Force installations in the theater. "Fuel is a very important function that we perform here at FLC Yokosuka," he said.

Aircraft refueling at a DoD or non-DoD military or commercial facility can use the DLA Energy AIR (Aviation Intoplane Reimbursement) Card to purchase fuel, pay landing fees and arrange for de-icing and other ground services with pre-approved suppliers. Ships can get fuel using the DLA Energy SEA (Ships' Bunkers Easy Acquisition) Card using an online platform. Smaller craft can purchase fuel at locations such as marinas with the Swipe SEA Card.

Mail Call

Mail is another important supply function. The Navy no longer has the Postal Clerk rating. Today mail is handled by enlisted Logistics Specialists. In the Indo-Pacific region, the Navy handles all mail transportation for the military services, as well as embassies and consulates. FLC Yokosuka manages 13 postal activities

Sailors arrange stores in the hangar bay of the USS Ronald Reagan (CVN 76), during a replenishment-at-sea with the Military Sealift Command (MSC) dry cargo and ammunition ship USNS Charles Drew (T-AKE 10). The non-combatant, civilian-crewed MSC ship is part of the supply lines to Navy ships at sea, and strategically provide fuel, food, ordnance, spare parts, mail and other supplies around the world. Ronald Reagan, the Carrier Strike Group Five (CSG 5) flagship, is on patrol in the Philippine Sea supporting security and stability in the Indo-Asia-Pacific region.



Credit: U.S. Navy photo by Mass Communication Specialist 2nd Class Kenneth Abbate

and base post offices on Navy installations, in five different regions, while the other services run the local post offices on their respective bases.

Mail delivery is still a much anticipated event on ships. Even though the Internet has replaced a lot of the "snail mail," cards and letters, today Sailors are ordering a lot of items online, so the volume of mail is growing exponentially. Nevarez said 22 million pounds of mail is processed a year by the Fleet Mail Center in Yokohama, which is the main hub for FLCY, much of it being packages from Amazon. "We support approximately 180,000 customers and have $5 million in postal revenue annually," he said.

But even if there wasn't an operation, exercise or contingency to respond to, Nevarez and his team are always busy. The FLCY is in the process of doing a 100 percent inventory of all its 49,000-plus line items, valued at $614 million. They maintain the Inventory database of buildings, structures vehicles and other real property, and there are regular audits and inspections, as well as visits by the Navy Food Management Team and Fleet Assist Team to the various commands and activities.

In addition, FLCY supports Ships Stores, which provide items for sale on board ships, such as snacks, drinks, apparel and electronics, and contribute to the command welfare and recreation

Gas Turbine System Technician (Mechanical) 3rd Class Raymond Htut inspects a fuel sample for color and clarity aboard the Arleigh Burke-class guided-missile destroyer USS Curtis Wilbur (DDG 54) during a replenishment-at-sea with the fleet replenishment oiler USNS John Ericsson (T-AO 194)

Credit: U.S. Navy photo by Mass Communication Specialist 2nd Class Taylor DiMartino/Released

funds. Nevarez said there is always something challenging to look forward to at FLCY, such as managing the homeport swap involving with USS America (LHA-6) and USS New Orleans (LPD-18) replacing USS Wasp (LHD-1) at Sasebo, or preparing to bring the littoral combat ship and 2,000 new line items to Singapore.

With the constant personnel turnover, there are always lots of household goods (HHG) shipments coming and going. FLC Yokosuka manages more than 12,000 HHG shipments throughout the region, with a large number of those taking place during the summer months as families rotate between school years.

Nevarez says his team pays close attention to safety, security, fiscal responsibility and environmental stewardship throughout the FLC Yokosuka enterprise, which requires regular involvement of the CO all the way down to the deck plate level.

One part of his job that he finds gratifying is the bilateral relationship the US Navy shares with its host nation counterparts in the Japanese Maritime Self-Defense Force. "We do a lot of relationship building here in Japan. Because we all work together in this busy AOR, we do a lot to help each other." It turns out that in the military, relationships in the supply are every bit as important as those in the commercial sector. Here, there is arguably more riding on the final outcome.

The Author

Edward Lundquist
is a retired naval officer who writes on naval, maritime, defense and security issues. He is a regular contributor to Maritime Reporter, Marine Technology Reporter and all the New Wave Media titles.

What *IS* PORTCON 2019, anyway?

The latest version involved panels and presentations from a raft of port professionals, and an impressive array of port security technology.

By Rick Eyerdam

PORTCON 2019, this one in May at Port Canaveral, is the semi-annual event hosted by the MacDonnell Group and the (CPE) Certified Port Executive Program. The plan is to meet the constantly evolving needs of senior management from port authorities; terminal operators, government and industry supply chain partners with a unique professional learning opportunity.

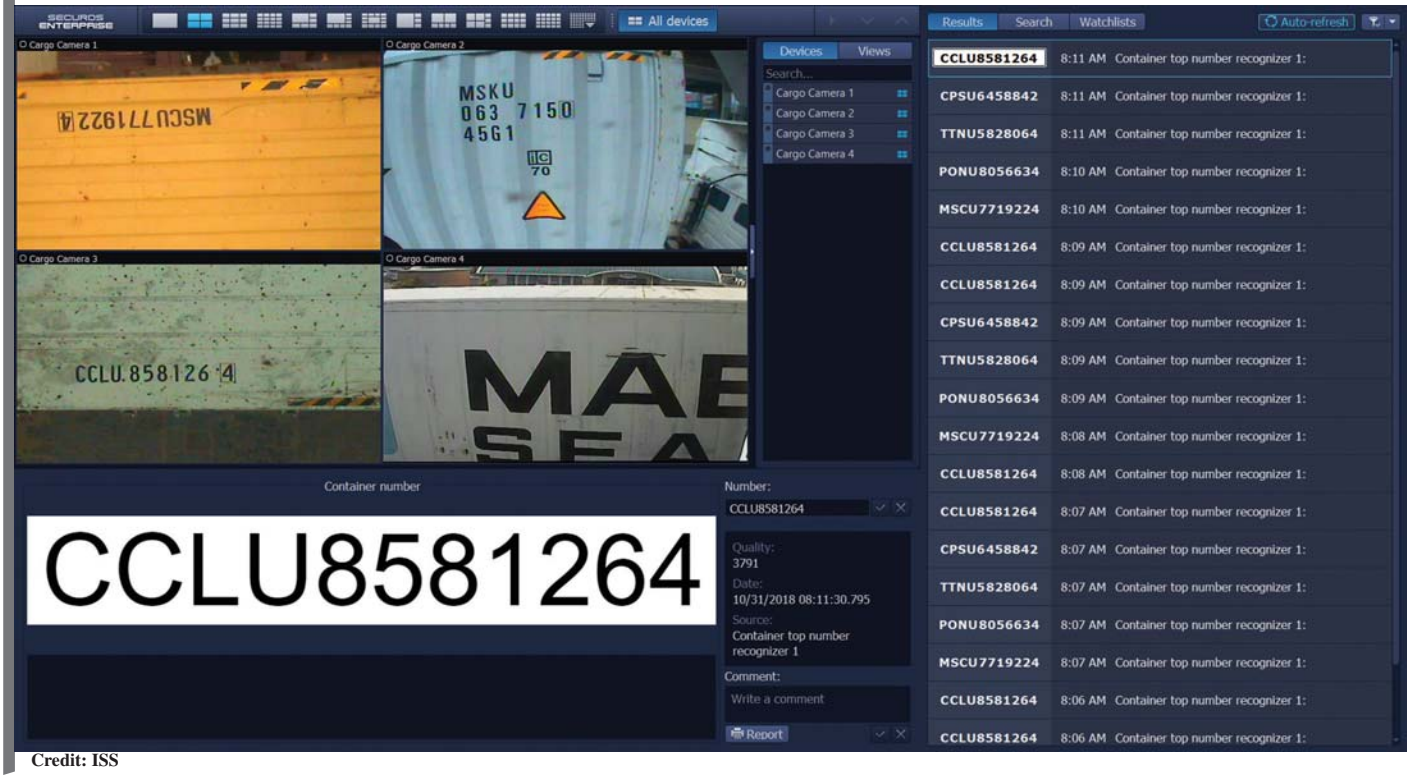
PORTCON 101

Though the PORTCON meetings are typically held in sunny ports; Tampa, Miami, Long Beach are recent examples, and they are sold as sessions where attendees learn from the speaker presentations and panels, from the solution providers in the expo, and by networking with their peers. The program awards participants 1.5 Continuing Education Units (CEUs) toward the ultimate goal of a CPE.

These (CPE) Certified Port Executive Program attendees are the ascending middle echelon of the nation's port and terminal personnel. Rarely does a deputy port director move up to a port director position without the CPE behind his name. PORTCON calculates alumni of over 500 seaport managers, and PORTSTAR, an online seaport security training solution that over 20,000 seaport employees have participated in.

The conference also acts as the opportunity for an annual update for senior seaport management on key issues. MacDonnell Security Risk Management provides a wide range of comprehensive security solutions to ensure compliance with Maritime Safety Regulations.

This year the PORTCON student sessions were: Leadership, Security and Technology, Optimization and Digitization, Climate Change, Automation and Port Infrastructure. They were structured around presentations and panel discussions over the course of two full days. Senior professionals from the industry shared their expertise and experiences with the audience. In fact, ***Maritime Logistics Professional*** Editor Joseph Keefe moderated a panel discussion which surrounded the top issues facing port professionals today.



Credit: ISS

"ESI Convergent brings the correct people to the exact issue that your business or agency is facing and we define a roadmap that makes the most sense to move forward. We connect the dots with the right resources that you are in need of."

– Pierre Bourgeix, President, ESI Convergent

ESI Convergent

So, we asked attendee Pierre Bourgeix what he did at ESI Convergent and what he thought of this year's session. Bourgeix says that ESI Convergent, where he is president, was formed to "help end users with their security and compliance needs and manufactures in defining the proper strategy to drive products successfully into the marketplace."

In other words, it seemed, he helped buyers of port security technology find sellers of the needed port security technology. But it is far from that simple, he said. "ESI Convergent brings the correct people to the exact issue that your business or agency is facing and we define a roadmap that makes the most sense to move forward. We connect the dots with the right resources that you are in need of," he explained.

"The cost of these services range from an hourly rate to fixed bid. However, at times we will simply refer you to the company that can service your needs," Bourgeix said. "As the name states ESICONVERGENT's goal is to converge the security industry and bring the best of minds and technology together, to solve the greatest concerns facing all of us today," Bourgeix said.

So we asked what "converging the security industry" could possibly mean. And, we were not prepared for the extent of the answer.

Converged Gap Assessment, one of his services, evaluates liability and risk by assessing existing assessments that have been performed during the previous 12 months against current assessments. ESI asks critical questions that are specific to the industry and the arena of business within IT, Cyber Security, Operational Technology, IoT, and Physical Security, he said.

Once this is done ESI will create a report defining the gaps. Then building on that data, ESI will rate the level of risk. ESI will also be able to assess products and services and add them to the ESI Universal Security Convergence standard to define the client's current product and services rating regarding legacy or current technologies and map it to their business goals as well as their converged liability assessment rating.

These assessments will give a client their exact liability score, which can be used to leverage budgeting, define insurance costs, and lower operating expenses by specifically orienting people, process, technology with correct policies and procedures, Bourgeix said.

The products or system also undergoes penetration testing, recommendations and fulfillment, vulnerability assessments, information security and risk assessments, web application assessments, minimum baseline security solutions, IT security solutions and firewall review, Network Architecture Review, device security assessments and penetration testing.

We asked from what background he had to craft a need for "a convergence approach to the security industry." He chuckled, "My path has taken me on a long and winding road from the physical security barrier industry then to gate control. I then moved to electronic security. Then I managed services security and finally I was in the cyber security arena.

Along the way I spent 20 years as a global security business development consultant and innovator, at such industry leaders as ADT, HySecurity, Wallace International, Tyco, and SecureState."

Bourgeix mentioned another PORTCON exhibitor he was consulting with who had an amazing computerized (VMS) vehicle management information system that was in dozens of ports around the world, including Singapore, the most efficient port in the world.

I called Janet Fenner, Marketing Director for Intelligent Security Systems (ISS), headquartered now in Woodbridge, NJ. ISS also participated in PORTCON 90.

ISS

She later confided that ISS is a leading developer of security surveillance and control systems for networked digital video and audio recording, video image pattern processing and digital data transmission in Latin America, Arabia and the Far East. It has just opened sales offices in the States. This was her first American

show. And her job is to sell American ports and terminals her ISS access control systems; either to improve the performance of the ones the ports now use, or to replace legacy systems. Florida's ports are an early target.

And, she was ready to talk business: "We do VMS (Vehicle management systems). And what we do is we actually have analytics – a lot of analytics – we have high-end analytics that run on neural networks. And one of the analytics we have is container recognition. We are able to even actually able to check in containers at ports four times as fast, with our system, than an individual person."

"It will grab the license plate recognition it will grab the 'VIN" number and it will grab every number off the container. It will even do a visual inspection of what the container looked like when it came in, for liability purposes. And we also have a chassis recognition that allows us to capture the license plate and the chassis number," she added.

"We also are really good for weight stations, making sure that the weight is coordinated to the tag number and the license plate they have," Fenner said.

Asked if these analytics had been approved by FEMA for grant funding she replied, "It is United States based technology. We have been doing this for many years. "We do actually ports globally. We just recently have done the port in Montreal. We have done ports in Brazil; all over the world."

We then asked if the analytics can interface with other systems and she said, "ISS systems can be integrated with access control systems, fire and life safety, and can be made compatible with virtually any third-party security equipment."

It turns out that the scientific and experimental potential of the company was based on fundamental research in neural networks, pattern recognition, and robotic control systems, initially conducted in the aerospace industry, and in flexible, automated production systems.

Today, over 120,000 deployments using Intelligent Security System technology are employed in 53 countries. The products are implemented in banks, office complexes, industrial and manufacturing sites, retail locations and supermarkets, petrochemical processing facilities, marinas, sports arenas, casinos, hospitals, schools and ports.

ISS has patented object-oriented event driven core firmware, Delta Wavelet video compression, intelligent video motion detection and digital video recognition capabilities. It has working relationships with major global players such as IBM, Axis Communications, Bosch Security, Anixter, Hanwha Techwin and Dell.

The company has an ascending load of properties it sells. A top ranked one is called SecurOS Enterprise. This ISS' global standard for video management, access control and video analytics, SecurOS Enterprise is suited for managing large and demanding installations.

The Enterprise framework can manage and monitor an unlimited number of cameras and devices, apply intelligent video analytics, and act as an integration platform for a variety of 3rd party systems. Built to handle enterprise level deployments, SecurOS Enterprise, comes with built-in Native Failure functionality, Microsoft Active Directory / LDAP integration, and has an extensive set of Cyber security features making it one of the most reliable and secure video management platforms in the market today

The Enterprise system manages an unlimited number of cameras, servers, access control devices, and analytic modules. SecurOS Enterprise has no limits and can handle any network regardless its size.

Its most popular analytics include License Plate Recognition, Facial Recognition, Container Number Recognition, Object Tracking / Unattended Object Detection, People Counting, etc. Project based custom analytics are available.

Port Security: High Tech and Evolving

Port security has evolved considerably since the attacks of 9/11. Millions of dollars in federal port security grants have helped to elevate not only physical security at the nation's ports along 95,000 miles of coastline, but also the sophistication of those arrangements. PORTCON was one place to see many of those security options on display.

ISS and ESI Convergent were just two of many firms at the PORTCON event. *A partial roster looked something like this:*

Name of Firm	Business Sectors	WEB site
Id Software Security	Security Software	www.idsoftware.us/
G4S Software	Security, Risk, System Integration	www.g4s.com/en-us
Vetted Solution	Safety Equipment / Turnkey Solutions	www.vettedsolution.com/
Boon Edam	Turnstyles / Entrance Security	www.boonedam.us/
Avigilon	Video Security	http://avigilon.com/
ESI Convergent	Physical & Cyber Security	www.esiconvergent.com/
ISS	Video Security	https://www.issivs.com/

The Author **Rick Eyerdam**
is a Miami-based, national award-winning journalist and editor. He is a former editor of Florida Shipper Magazine and has served as an adjunct professor of communications at Florida International University. Eyerdam graduated from Florida State University with a double major in English Literature and Government. His articles have appeared in myriad maritime publications.

Connecticut Port Authority:

(*) all images courtesy CPA

2019 brings new missions, strategies and new optimism for this three-port Northeast gateway.

By Joseph Keefe

The Connecticut Port Authority began operations in 2016. The quasi-public agency's mission is to grow Connecticut's economy and create jobs by strategically investing in the state's three deepwater ports and small harbors. In a nutshell, the Connecticut legislature teamed up with the governor to create the Connecticut Port Authority by statute in 2014.

When it fully stood up, CPA's first full time employee was none other than Evan Matthews, CPA's Executive Director. He got right to work. Matthews explained, "We're working on our third operating budget. And we've gone from about $400 thousand in state appropriations, and today, we have close to a $1.6 million dollar budget and five employees."

There's no previous model for what Matthews and his colleagues are trying to stand up. "We have an interesting mandate – we are to promote the maritime sector focusing on the shipping activities in three deep water port complexes in Bridgeport, New Haven, and New London. They're all slightly different," he said.

SHIPP: Funding the Mission

Coordinating the development of Connecticut's ports and harbors, while working with other state, local and private entities to maximize the economic potential of maritime commerce, CPA created SHIPP as a central part of its strategy to support development throughout Connecticut's waterfront communities.

Through a separate mandate from the legislature to invest in small harbors throughout the state, last year CPA did its first round of Small Harbor Improvement Projects (SHIPP). A SHIPP Grant may be used on a wide range of improvements including: marina repair, dredging, boat ramp facilities improvement, breakwaters, harbor management plans and feasibility studies. The goal is simple: to strengthen the long term growth of Connecticut's maritime economy. Locally, the Connecticut Legislature likes the SHIPP projects because they're a good way for them to connect with their constituents through these projects.

"We had 18 different projects and invested about $4 million

the future is now

and that funding was provided by the State of Connecticut," Matthews explains further, adding, "We partnered with municipalities on small projects like boat ramps, visitors docks, small dredging projects, and we've funded some harbor management plans. It's a wide range of activities that we support. And we also license and administer the Connecticut State Pilots."

Fair Winds Propel New London's Infrastructure

In May, the Connecticut Port Authority, Gateway Terminal, Eversource and Ørsted announced a partnership to revitalize State Pier and establish New London as a major northeast center for the growing offshore wind industry. The estimated $93 million investment promises to transform State Pier into a state-of-the-art facility, while creating a platform for heavy lift cargo, such as offshore wind components. The wind component is especially important.

The two-phased redevelopment plan involves a three-year planned upgrade of the facility's infrastructure to meet the heavy lift requirements of Bay State Wind's offshore wind components. The plan is for Bay State Wind to enter into a 10-year lease agreement granting the joint venture between Eversource and Ørsted exclusive use of State Pier for assembly and deployment of offshore wind components. Gateway Terminals, originally of New Haven, CT, signed a long-term concession agreement in January and will act as the new terminal operator.

Evan Matthews is confident that the deal with come together successfully. In this case, he's got logistics on his side. "New London is one of the only ports on the eastern coast that doesn't have any overhead bridge restrictions. This will allow the inshore building of wind turbines in shore, promptly loading onto an installation vessel, and then bringing it out to the foundation. Both ports in Narragansett Bay and the New York ports have airdraft restrictions."

Notably, the newest public-private partnership in the Constitution State includes investment bankers Seabury Maritime. At its heart, the latest investment is designed to position Connecticut as a leader in the offshore wind industry and expand economic opportunity throughout the region. The Connecticut Port Authority will oversee the project, with construction beginning in January 2020 and anticipated for completion in March 2022.

Dredging: Digging Deep for the Future

For Connecticut's ports – more so than most others along America's 95,000 miles for coastline – dredging operations will be the key to future success. Today, the controlling depths in the state's three big ports just aren't deep enough. New London stands at 36 feet; New Haven about 38 feet, and Bridgeport – authorized to 35 feet – currently stands at just 28 feet.

Currently, the only plan in place involves the deepening of the port of New Haven. A U.S. Army Corps of Engineer (USACE)

"New London is one of the only ports on the eastern coast that doesn't have any overhead bridge restrictions. This will allow the inshore building of wind turbines in shore, promptly loading onto an installation vessel, and then bringing it out to the foundation. Both ports in Narragansett Bay and the New York ports have airdraft restrictions."

– Evan Matthews, CPA's Executive Director

study is now complete, and the hope is to deepen the New Haven channel to 40 feet.

"It should go into design as soon as we authorize the funding to do that. The State's portion is probably about 26 million – it's about a 74 million dollar project in total. We would hope to get that (into a bill) as soon as we get the chief's report and everything is authorized to go," said Matthews.

Although CPA works closely with USACE Engineers to manage federal navigation projects, their relationship with local ports is unlike most other typically US ports. Matthews explains, "Although we're not in charge of any of the deepwater ports, each of the deep water port cities has its own port authority. So we work in various ways with those smaller port authorities to support their activities through sharing costs of marketing and membership dues and that sort of thing."

Matthews continues, "Each city has its own port authority. So we've got a different relationship with each one of them. But, because we were given our sole asset that we have, and our only source of revenue is the State Pier in New London. Our relationship with the New London city and the port authority is closer than it is in Bridgeport."

Matthews is pragmatic about what CPA can accomplish, and what it cannot. In terms of Bridgeport, he said, "We're not trying to take them over; we're trying to leverage and support their mission with the funding sources that we have. The biggest benefit that we have as a state agency is that we have the ability to request capital dollars in the governor's budget. We also have the ability to go before the State Bond Commission and request bond funding that's been authorized by the legislature."

In Bridgeport, CPA is trying to help them dredge to 35 feet; the authorized depth. "We're working on that to get more ship traffic in. Most of Bridgeport's traffic today involves domestic barge petroleum products or aggregate. That's all US flag tug and barge stuff so they don't really need a deep channel. There's also a ferry operation there, as well," adds Matthews.

The Way Forward: A Maritime Strategy Document

CPA doesn't operate in a vacuum. In fact, CPA is mandated by state law to produce a Maritime Strategy Document. The latest iteration took nine months and a thorough strategic planning pro-

cess to produce. The document pinpoints eight objectives that will drive and guide CPS's future investment strategy. These include:

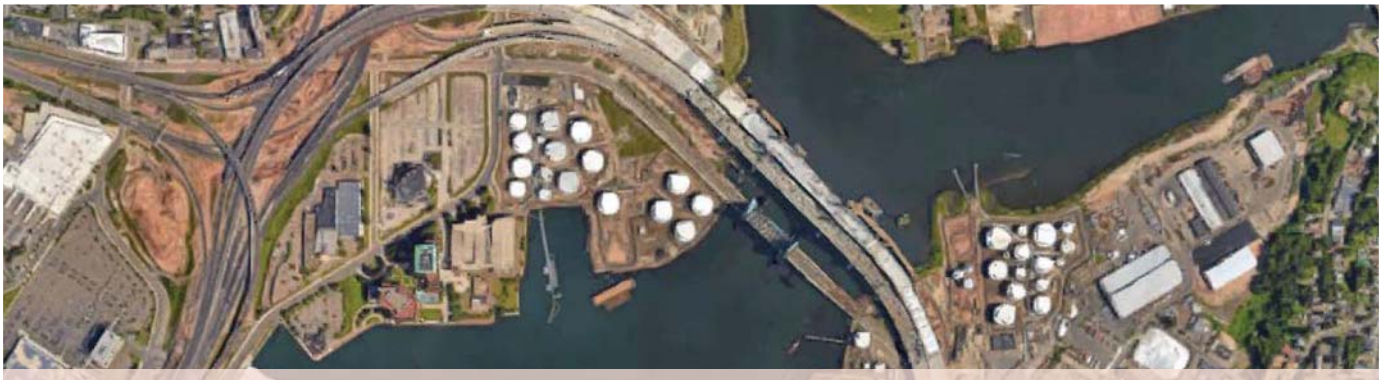
- *Manage the State Pier, Increase Utilization*
- *Build More Volume in Connecticut State ports*
- *Support Dredging of Connecticut's Ports & Waterways*
- *Support the Small Harbor Improvement Projects Program (SHIPP)*
- *Create Intermodal Options*
- *Leverage Emerging Opportunities*
- *Enhance Ferry Systems and Enhance Cruise Coordination Activities*
- *Ensure Future Support of CPA*

Building volume in the state's commercial ports involves a three-port strategy. Like Seattle and Tacoma in the Pacific Northwest, Connecticut has realized that three niche ports can't survive if they are competing against one another. "I think one of the things in the past is Connecticut struggled about getting a coherent message out there that it is one network – it's one gateway that's got three different ports. If we had Bridgeport competing with New Haven they'd never get that holistic, unified vision."

In terms of passenger vessels, Matthews knows the state has work to do. Much of the traffic going in and out of Newport and New York is simply sailing by without stopping. He insists, "If we have the proper facilities, we could entice them to stop for a night, as well as an alternate to Newport, or another New England port on their way up to Canada or wherever their ultimate destination is."

On the intermodal front, without a true container port or container facility, Connecticut shippers are forced to truck their containers to an intermodal yard, typically in Massachusetts or New York. The solution will ultimately involve shortsea container-on-barge operations. In advance of that, conventional wisdom says that a fully functioning intermodal would need to first be in place.

In Connecticut, the fledgling CPA is moving forward, in ways never before contemplated. "It's kind of a unique approach. It's a work in progress, so to speak," says Matthews, who also knows that CPA's success will ultimately be defined by financial independence. "We're working to create an asset base that produces revenues to support the functions of that organization without having a need to go to state legislature for a direct appropriation." So far; so good.



Key Cargoes Driving CPA Growth

Domestic: *The deepwater ports of Bridgeport, New Haven, and New London handle shipments of commodities domestically, or the movement of goods within the United States, and this trade is much larger by volume than the foreign traffic through the ports. Together with Stamford Harbor, the deepwater ports handled over 9.2 million tons of domestic commodities in 2016, or three times more than the foreign trade through the three deepwater ports. In 2016, much of the domestic traffic through Connecticut's ports was gasoline, kerosene, and fuel oils, followed by sand and gravel as well as iron and steel scrap.*

Import/Export: *In 2017, over 2.5 million tons of imports and 247,000 tons of exports moved through Connecticut's three deepwater ports. The value of these commodities was over $1.1 billion. Imports and exports through Connecticut's deepwater ports are largely of bulk and break-bulk commodities, with iron and steel, petroleum products, and salt and related products comprising the largest categories. Most of the international trade through Connecticut's deepwater ports was through the Port of New Haven, with this port handling 87% of imports by volume and almost all exports by volume in 2017. Imports included petroleum products, such as home heating oil, gasoline, kerosene, diesel, and jet fuels along with salt, steel, and other products. New London handled 11% of imports by volume in 2017, and Bridgeport handled the remainder.*

COMPASS LEADS THE WAY

As YILPORT Rolls Out the Navis' Compass Visual Workflow Management Application, the collaborative tool promises improved planning and greater visibility across five terminals. And, that's just the beginning.

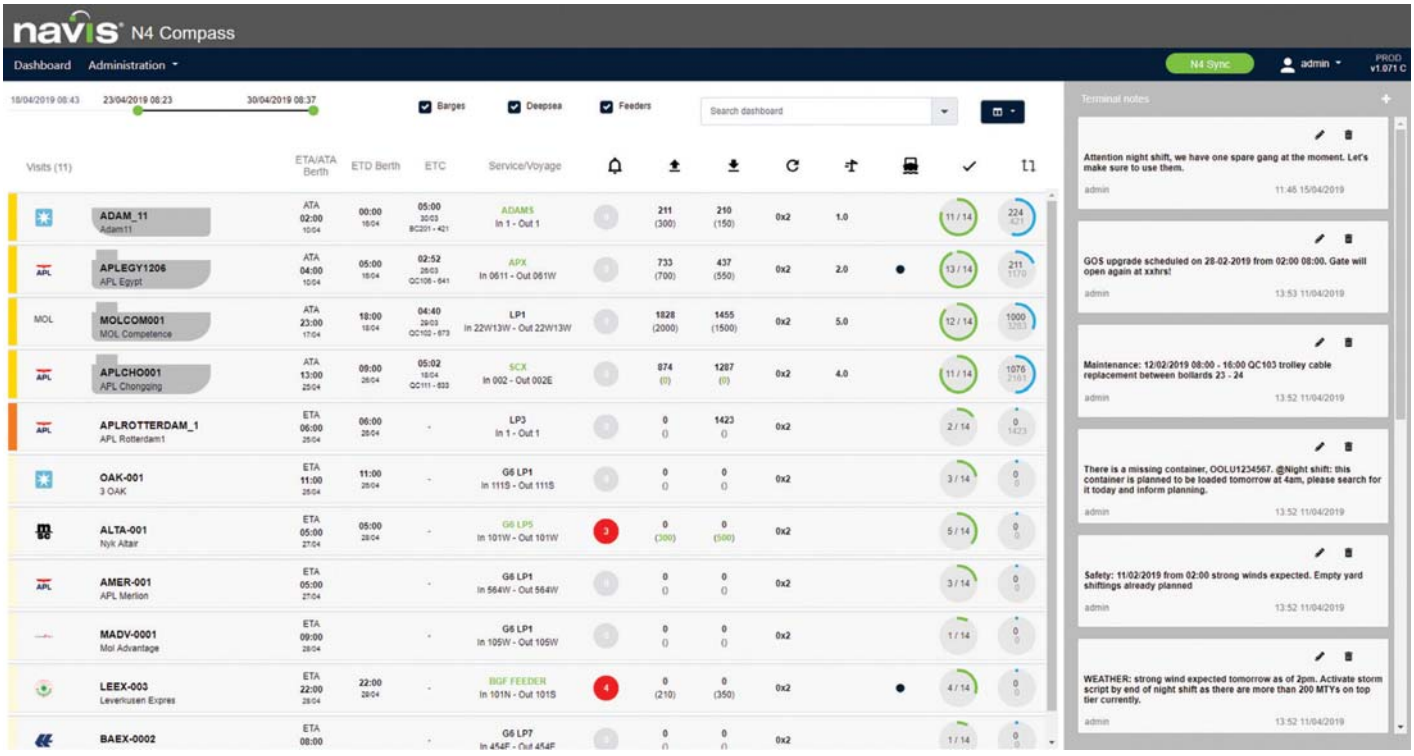
By Joseph Keefe

In May, Navis announced that YILPORT Holding Inc. would roll out Navis' Compass visual workflow management application to five terminals that already use Navis N4. The goal is to bring enhanced visibility, communication and collaboration to the planning process across all of the terminals. In a nutshell, the Compass application not only digitizes workflow, but also standardizes the way terminals work to improve the quality of the planning and tracking process to improve the terminal's efficiency.

The latest rollout of Compass will take place the Yilport Gebze and Yilport Gemlik, both in Turkey, Yilport Oslo, Yilport Setubal (Portugal) and Yilport Ferrol (Spain). The Compass application, says Navis, is easy to implement, with multiple deployment options suitable for every terminal, and utilizes the 'Navis Smart' technology to unlock vast amounts of data within the TOS for greater visibility and speed across all parts of an operation.

The latest rollout follows a successful pilot period with Compass for YILPORT's Oslo terminal. During this pilot, YILPORT utilized Compass to track the planning and execution process for vessels from the Global Logistics Center (GLC) in Gebze, Turkey. Compass aided in making relevant information available to all terminal actors in real time, which helped to reduce miscommunication across locations and will help prevent claims going forward.

During the one month trial period, YILPORT and Navis continued to enhance the Compass application to gather feedback on the priority of features that should be added and how those features should work to best incorporate Compass into the terminal planning processes. This collaboration ensured that Compass incorporated the features that were most valuable to the end users



and help YILPORT to reach their strategic targets.

The End of Siloed Data Streams

Andy Barrons, Navis Chief Strategy Officer Andy Barrons describes the compass application as one which seamlessly consolidates multiple data sets into a single view. "Imagine you're running a very busy terminal, you've got multiple vessel arrivals, you've got multiple berths – how do you manage optimize the planning of all those vessel visits? Compass provides an overview that can be shared amongst multiple end users within the terminal. It's a change in the planning paradigm, to some extent, because you've got a team view."

According to Barrons, the next level of Compass comes when the software starts to learn, recognizing the process and can start to be proactive in making a recommendation if there's an exception in a particular work flow. "Ultimately, that's where Compass will develop. The software is looking at all the data and then making decisions of what's the next best move in the terminal."

The initial release of Compass is for terminal planners only. It facilitates end-to-end planning for vessel visits, by the team in the terminal. Over time, the Navis vision is to connect other planning operations within the terminal – barge planning, truck planning, etc. Barrons explains further, "What's exciting about Compass is that it is the start of a new kind of planning paradigm. Compass takes advantage of new technology we're employing called 'Navis Smart.' And, why that's exciting for customers, is that you can build applications on top of the core TOS without having to upgrade the system. A core operating system, you have to upgrade from time to time, to get the new functionality to your team in the terminal."

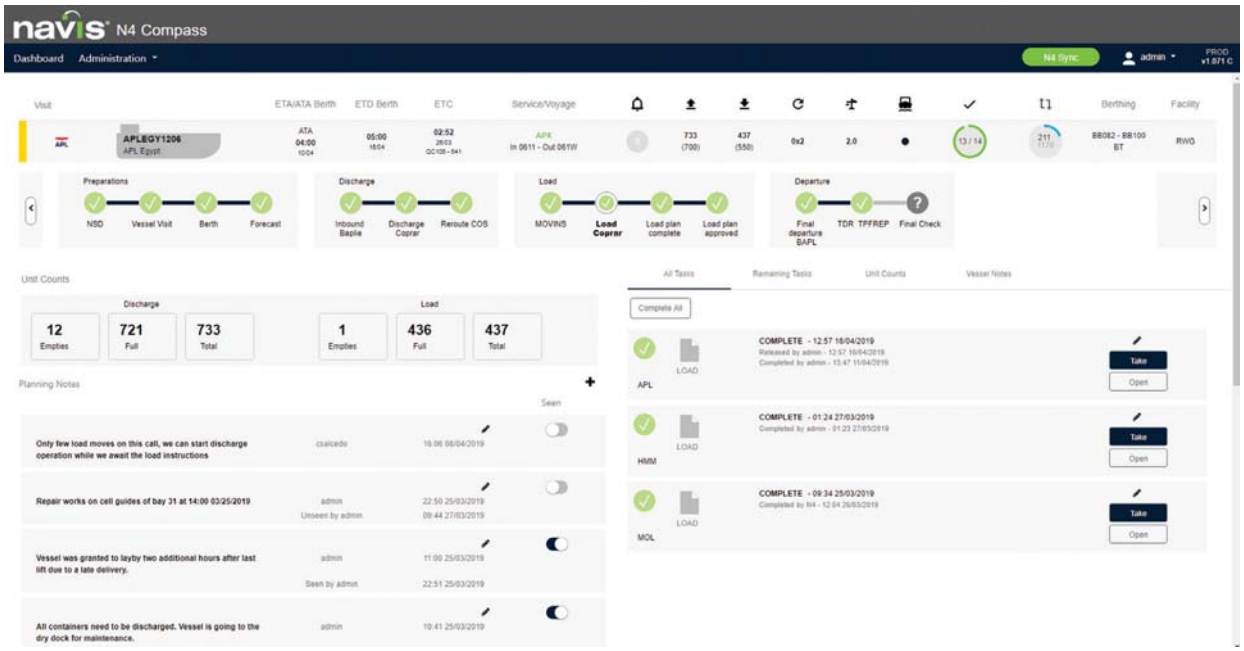
Through Navis Smart, functionality is delivered much faster to a terminal than it was ever to be done in the past. As a starting point, says Barrons, one of the strengths of Navis is that it is highly configurable. "We're in about 350 terminals around the world. And so when you're building software for a global market, you have to make the software highly configurable in order to meet the different workflow processes or different ways they want to use the functionality. For example, we're working on what's called BI Portal Analytics and Ops Monitoring dashboards. The user can see what happened when they worked that last vessel and how that can be improved in the future.

At Navis, the current view is that data is the biggest untapped asset in terminals. Capturing, combining and analyzing that stove-piped data will eventually drive innovation, says Barrons. Previous improvements involve terminal design, automation, and increased productivity. Looking ahead, Compass is an example of how data that is sitting in multiple different places within a core system can be brought together so that the planning process is easier – and faster.

Compass Points the Way

As terminals evolve, the terminal operating systems that help them get the job done will also become more sophisticated. That sophistication, however, translates into easier metrics, a single source view of all data streams that, in turn, will produce greater efficiencies. Andy Barrons sums it up neatly by saying, "It is really about continuously improving operational performance within these critical nodes in the supply chain."

For its part, YILPORT already uses the Navis N4 Terminal Operating System (TOS) at 9 terminals and they are working to standardize on N4 as their TOS for their strategic terminals. YILPORT's long term vision is to become a top 10 global port operator by 2025. The numbers indicate that the company is well on its way to achieving this target. Recently, YILPORT Holding was ranked as the 12th biggest international terminal operator in the world (source: Drewry's 2017 ranking). As they grow, it looks like Navis will be a big part of their ongoing success.



Maritime Training Insights Database:

Results from the second annual Maritime Training Insights Database (MarTID) 2019 have been released, and training budgets – both money spent by companies and mariners themselves – continues to rise.

What is MarTID?

MarTID is a non-commercial initiative collaboratively founded by the World Maritime University, Marine Learning Systems and New Wave Media, publishers of ***Maritime Reporter & Engineering News*** and ***Maritime Logistics Professional*** magazine. The mission of MarTID is to provide the maritime industry with objective and comprehensive data on how it manages and conducts training for shipboard competencies and the effects of drivers, such as technology, on this training.

This data, updated annually by means of a global survey, is designed to provide insights that can lead to enhanced policy-setting, decision-making, benchmarking and operational optimization by industry and regulatory authorities at all levels.

The secure and anonymized MarTID data provides insights into training practices, budgets, priorities, challenges and perspectives as well as a global picture of maritime training that is not currently available elsewhere.

While a complex and time-consuming endeavor to plan, execute, compile and analyze, the ultimate mission of MarTID is quite simple: creating a knowledge database that is freely available and open to all, helping companies, educators and seafarers to discover (and hopefully utilize) best maritime training practices.

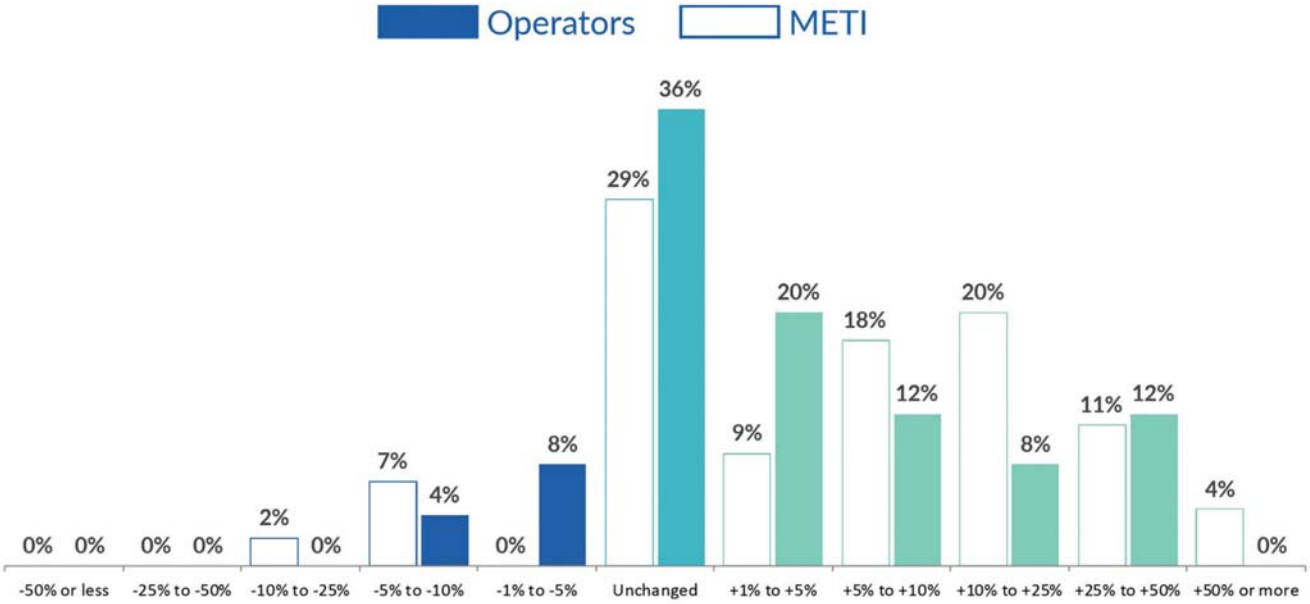
Education, training and human resource development is critical for the sustainability of any industry endeavor. This is especially the case in the maritime industry where there is broad agreement that a significant percentage of maritime accidents involve human factor causes. Well trained and competent crews are critical to ship safety and security, as well as to the environmental and commercial sustainability of shipping and by extension of world trade.

MarTID 2019 Highlights

Budgets Rise, Safety Rules, Autonomy Impacts (a Little!)

Though estimates vary by source, the international shipping industry is responsible for approximately 80-90% of world trade, with more than 90,000 merchant ships trading globally, transporting every type of cargo imaginable, from raw materials to fin-

BY WHAT APPROXIMATE PERCENTAGE HAS YOUR ORGANIZATION'S TRAINING BUDGET GROWN OR SHRUNK OVER THE PREVIOUS FISCAL YEAR? (OPERATORS AND METI)



2019 Training Practices Report

ished products, from nearly 30 million cruise ship passengers to livestock. While ships, technology and increasingly the logistics chain as a whole garner the headlines, the seafarer is the lifeblood of world commerce, and in total, globally, there are 1,647,500 seafarers (774,000 officers and 873,500 ratings) serving on internationally trading merchant ships, according to statistics from The International Chamber of Shipping.

But the role of the modern seafarer is changing.

Driven by automation on the ship and throughout the transport logistics chain, seafarers today are increasingly asked to operate ever bigger, more complex and technologically sophisticated vessels with smaller crews. They are tasked to deliver ship and cargo safely and efficiently, guided by a rapidly increasing list of regional, national and international rules, with a rapidly decreasing impact on the environment. And by all accounts, they are succeeding.

With this as a backdrop, the MarTID 2019 survey found:

BUDGETS RISE

Maritime training budgets continue to trend upwards, compared to the year before: more than 52% of vessel operators reported an increase in training budget, while more than 62% of maritime education and training institutions (METI) reported a larger budget for training. Around 60% of operators and 68% of METIs expect further increases in their training budget for the coming year.

SEAFARERS SPEND MORE

More than 68% of seafarers have increased their personal seafarer training expenditure over the last five years, and more than 55% expect their personal training expenditures to grow in the upcoming year.

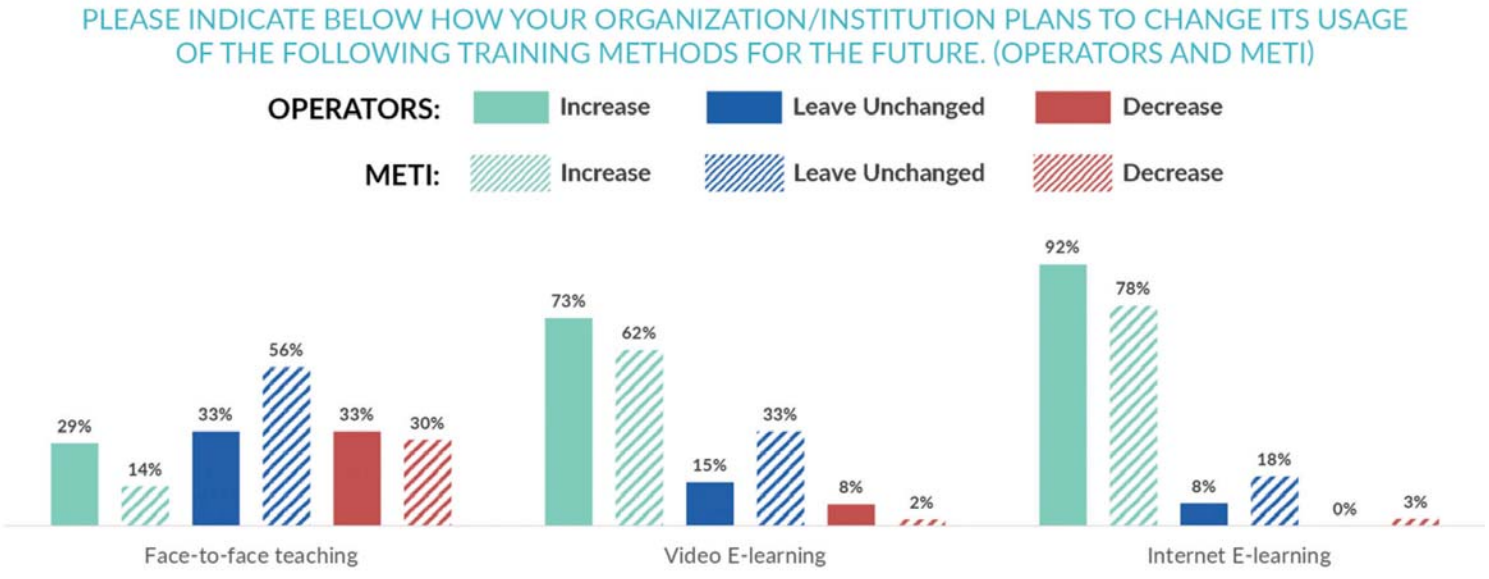
SAFETY RULES

While there are myriad training drivers, the top three drivers for MarTID 2019's target groups include:

- ***Vessel Operators:*** *Reducing accidents, complying with regulations and managing crew competency;*
- ***METI:*** *Complying with regulations, improving safety and improving crew competency, and;*
- ***Seafarers:*** *Safety, ship operations and security.*

AUTONOMY IS COMING:

While automation and autonomy are 'hot' fodder for the trade press, views on the pace of adoption of autonomy on the working waterfront vary widely. General consensus and common sense suggest that full automation on oceangoing international routes is a generation or more away. While the technology has quickly matured, major hurdles include matters such as global political agreement, maritime and cyber security, and insurance. More tangible activity is accelerating on local/regional/national fronts



where such agreements and arrangements are easier to make. In overview, vessel operators have the most conservative view on the future of autonomy, while METIs are most optimistic. From the perspective of vessel operators, today 62.5% are at no autonomous function; while 20 years from now 20% expect to reach AL4 (Human in the loop - Operator/supervisory) and approximately 7% expect fully autonomous operations. More than 40% of the METI respondents see an autonomous future in the AL5 and AL6 range.

METHODS CHANGE

Predictably, with increasing automation and technology in personal and professional lives, seafarer training methods are changing. While face-to-face and classroom instruction continue to dominate, the tide is turning toward increasing levels of online eLearning and video instruction, music to the ears of seafarers that pay for their own training, as travel and accommodation lead their expense list.

2019 Results: A Deeper Dive

The total number of responses from all three groups was 174 from all global regions. This represents a 58% rise over the 110 responses received for the inaugural survey in 2018. The 2019 survey was broken into three targeted versions in order to collect and compare data from each of three important maritime industry constituents. Of the three groups, the METIs are the most represented, with 40% of the responses.

SEAFARERS

Seafarers today are in the spotlight, arguably more than ever, with an increased international focus on seafarer issues such as health and wellness, both physical and mental. At the same time the maritime industry, following trends on land and in the air, actively pursue various levels of automation which will eventually change the responsibilities, the roles and perhaps even the very definition of "seafarer." Regardless, training and education will remain a core tenant for seafarers, and increasingly they are picking up the cost of their own training.

The vast majority (96%) of the seafarer respondents are male, and the average age was 44 years old at the time of the survey. The average age of last year's survey respondents was somewhat higher at 48 years old. A large majority of the respondents hold a management-level certificate of competency, with an average 17.5 years of experience as a seafarer.

VESSEL OPERATORS

For responding vessel operators, organizational headquarters were spread out mostly between Europe, Asia-Pacific and North America. A smaller percentage of respondents were headquartered in the Africa and Latin America. The average vessel operator has 56 vessels under management.

METIs

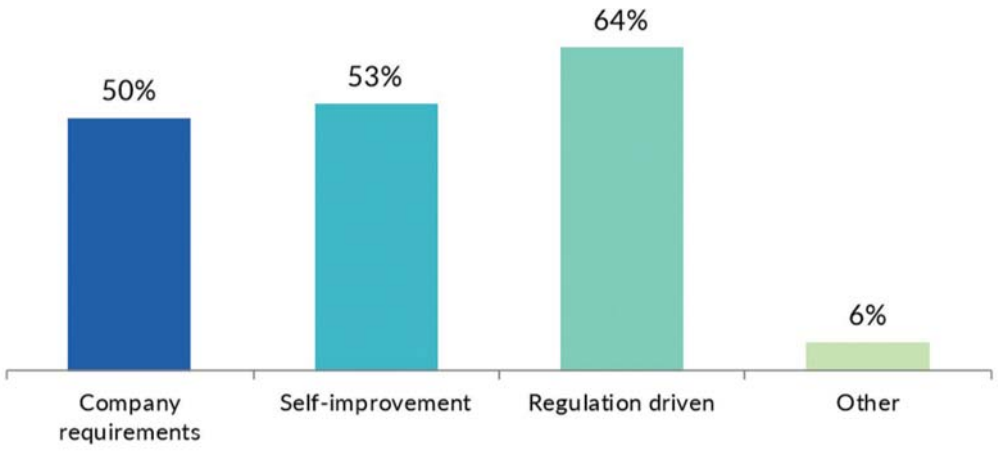
METIs globally have historically 'carried the water' in terms of mariner training, for regulatory compliance, licensing and professional development. They, too, must adapt to ever changing maritime rules and trends, as well as education methods.

According to the MarTID 2019 survey, more than 33% of responding METIs operate more than one campus, and respondents spanned the globe with the respondent's indicating their main campus is located in North America, Asia-Pacific and Europe. Surprisingly, more than 17% of responding METIs have been established for more than 100 years, with the majority (63.5%) operating for 25 years and more.

Crew Demographics

Female seafarers made up an average of 9.1% of the crew,

WHAT ARE THE PRIMARY DRIVERS (OR MOTIVATION) FOR YOUR SEAFARER TRAINING? PLEASE SELECT ALL THAT APPLY.



organization-wide, and the average age of a seafarer in the respondent's crew was 37 years old. In last year's survey, the respondents indicated that in their organizations 12.8% of the crew was female. As the MarTID survey grows in size and establishes many years of data, this will be an important metric to track.

Roughly two-thirds of the respondents do not foresee any future operational issues or training needs due to their crew's current average age. However, the third that did see potential concerns cited the following issues:

- *Understanding the difference between experience and competence*
- *Shifting cultural norms*
- *Aptitude with technology*
- *Changing demographics driving increased recruitment needs*
- *Senior ranks needing to be transitioned soon due to their approaching retirement age*

Budget Trends

Vessel operators increasingly are under both regulatory and commercial pressure, forced to invest in new ships and technologies while markets, generally, are down. On the regulatory front, the International Maritime Organization is spearheading the effort to effectively and dramatically reduce emissions from ships, most significantly with the mandate to reduce sulphur in marine fuel from 3.5 to 0.5% by 2020, and long-term the proposal to reduce greenhouse gas emissions 50% by 2050. On the commercial side markets have traditionally experienced strong peaks and valleys, but in recent years a number of geopolitical events and a prolonged slump in the offshore energy sector have magnified the downturn. At the same time, as the logistics chain becomes ever more automated, so too must ships, a key link to keep global commerce efficient. Enter the seafarer's training and education. As ships become more sophisticated, so too must the 'seafarers' manning the ships, both onboard and ashore, to ensure safe, efficient operations.

Most vessel operators spent under 10% of their operating budget on training, with nearly 33% allocating around 2% - 5% of their budget to training. This number is similar to last year's which was 26%. As expected, the average percentage for responding education and training institutions was much higher.

Survey results indicate that training budgets continue to trend upwards, compared to the year before. More than 52% of operators reported an increase in training budget, while more than 62% of METI reported a larger budget for training. This is consistent with last year's data which showed that almost 60% of respondents expected to increase their training budgets during the 12 months which followed the 2017 survey. Likewise, between 9% and 12% of respondents indicated that their budgets were reduced over the preceding 12 months. This too was consistent with last year's predictions where 9% anticipated a reduction in budget.

The most common reason cited for increased training was new equipment being used and systems being installed (such as LNG and BRM training, or the installation of SMS – which comes with new procedures).

Meanwhile, for maritime education and training institutions, the increased budget comes from new training opportunities, increased student population, the installation of new technology (such as simulators and training software / Learning Management Systems).

The trend toward higher training budgets continues as a majority anticipate either an increase in the budget for the upcoming year or no change at all. Around 60% of operators and 68% of METIs expect further increases in their training budget.

The full ***MarTID 2019*** has been finalized.
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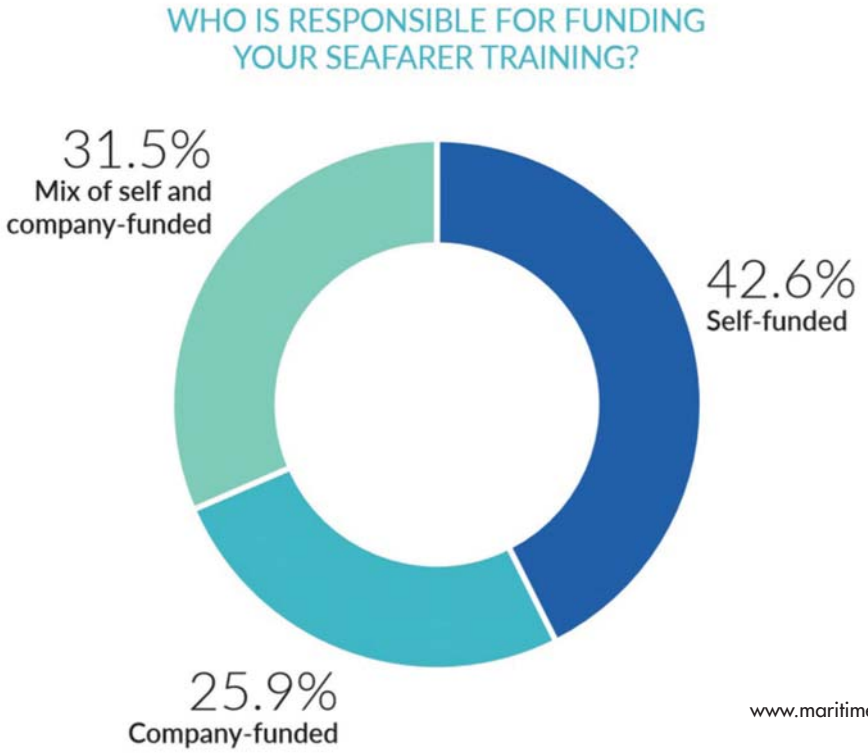

CRUISING in the CLOUD

Turning a necessary cost center into a revenue stream is the new normal for savvy and successful cruise operators.

By Joseph Keefe

As the flourishing expedition cruise market takes passengers on innovative itineraries to remote and untouched destinations, these well heeled guests want something else at the same time: a 24/7 quality internet connection. If Marlink gets its way, that sort of communications service will soon be the rule, and not the exception.

In April, Marlink revealed that the expedition cruise market is in full-on growth mode in terms of demand for connectivity in the most remote corners of the planet. As a satellite service provider and communications partner for more than a few luxury and adventure cruise ships and fleets, Marlink says that it is today contracting twice the satellite capacity specifically for the expedition sector as it was just 12 months ago and is now regularly providing megabit connectivity on a truly global scale. Marlink customers in the sector include Hapag-Lloyd Cruises as well as French luxury cruise specialist PONANT.

The expedition cruise vessel sector has been gaining pace over the last five or so years, driven by a market that wants to see and do new things on holiday. On that bucket list for many is the far north, where the reduction in sea ice is creating new opportunities. For its part, Marlink has kept pace with demand and in some cases enabled expedition vessels to go further afield by opening up new areas of coverage, for instance in the North West Passage, which is becoming quite a popular route.

Providing that coverage and delivering it in an affordable package is another thing altogether.

Tommy Konkol Dybvad, Director Cruise and Ferry at Marlink told ***MLPro***, "We work closely with all major satellite network operators to ensure that we can deliver the highest quality of service in cost-effective packages for all customers. The challenges to ensure that guests can connect in remote areas on an expedition cruise are not easy to overcome compared to the traditional cruise markets closer to equator, however our customers [the cruise lines] know that they must deliver connectivity on board for passengers who expect to be connected at all times.

The 100% increase in capacity required to keep guests, crew and company connected as far afield as the Arctic and Antarctic is due to the surge in popularity of expedition cruising.

Marlink customers in the sector include Hapag-Lloyd Cruises fleet which is operating in remote locations using Marlink VSAT. New 'expedition class' ships, HANSEATIC nature and HANSEATIC inspiration, due to be delivered this year and HANSEATIC due in 2021, will have the same high-level connectivity for guests and crew. Marlink also renewed its contract to deliver multi-band services to French luxury cruise specialist PONANT late in 2017, a deal that included provision for four new PONANT Explorers yachts – Le Champlain and Le Laperouse, which joined the fleet in 2018, and Le Bougainville and Le Dumont-d'Urville, which will enter service in 2019. Another customer is MSC Cruises.

"We provide MSC Cruises with a cloud of bandwidth concept, where the huge amount of capacity they have can be distributed according to demand around the fleet. We ensure that capacity is available for vessels when and where it is needed, but our space segment team works at least 18 months ahead with access to future customer itineraries to support planning. Of course, the service can be reactive as well, should a short notice change be applied to a vessel's routine for instance."

– Tommy Konkol Dybvad, Director Cruise and Ferry at Marlink

ALL IN: LOW COST, HIGH QUALITY

The practice of providing very low cost for passengers (on expedition ships, it is likely to be an all-in situation) is a remarkable development, and one which most will be able to afford.

Tommy Konkol Dybvad explained, "The idea that lower-cost connectivity would be popular is not ground-breaking of course. Cruising isn't cheap so high bills for posting photos of your holiday to social media are particularly unwelcome. Guest satisfaction is any cruise company's top priority and improvements in cost and quality of the connectivity on board is very important aspect. As an added driver, pictures and videos of a cruise on Facebook or Instagram are new marketing channels for a cruise company."

It is the ability to throttle bandwidth per voyage and/or switch capacity from vessel to vessel, depending on demand for a particular voyage that is the key to keeping costs down and service high. This must involve close collaboration with the customer; MSC in this case. "We provide MSC Cruises with a cloud of bandwidth concept, where the huge amount of capacity they have can be distributed according to demand around the fleet. We ensure that capacity is available for vessels when and where it is needed, but our space segment team works at least 18 months ahead with access to future customer itineraries to support planning. Of course, the service can be reactive as well, should a short notice change be applied to a vessel's routine for instance."

A very straightforward process handled by a simple script defines all available connectivity carriers. As soon as the primary system becomes unavailable, the script is defined to automatically jump to alternative carriers defined in a prioritized way to ensure least cost with highest throughout and lowest latency at any given time.

"Delivering global availability and reliability can really only be achieved through a multi-band and multi-orbital approach. Marlink customers essentially don't need to choose a specific single service as we deliver their bandwidth using the best satellite networks for their needs," says Tommy Konkol Dybvad.

The availability of relatively low cost bandwidth to cruise passengers is a great selling point for MSC, but it also benefits that operator in so many ways. These include (a.) the partial funding of business Internet/satellite coverage costs, (b.) providing more for less to cruise customers, and (c.) the transfer (and leveraging) of marketing costs through social media goodwill from happy cruising customers.

"It's essentially a closed-loop," explained Tommy Konkol Dybvad, who adds, "Hitting the right price point and service quality delivers more consumers on board, and this revenue goes towards funding the high levels of capacity that a cruise ship needs. With a continuous revenue stream, cruise companies can continually improve the connectivity services they offer, providing an even more attractive offering which will attract even more users willing to pay for the experience."

In the end, Marlink helps to turn what has been historically an expensive cost center into a revenue stream that can defray at least a portion of these costs, while allowing passengers to do the work of (and augment) marketing through social media at the same time.

THE FULL PACKAGE: ADVANTAGE MARLINK

Network quality is key to meeting the demanding requirements of expedition cruising and while Marlink deploys state-of-the-art on-board systems and makes capacity available globally, it also focuses development efforts on ensuring that customers have improved support tools to optimize their communication services. In parallel, Marlink is also committed to ensuring its clients can minimize the risk of cyber-attack through inherent security at the network level and the fully integrated ship and shore-based Cyber Guard portfolio, offering harmonized solutions for detection, protection and recovery.

With the cruise market in focus, the company has also introduced several new capabilities that can be accessed via an online portal, including an onboard internet Wi-Fi landing site or captive portal with capabilities to connect APIs to the clients own customized cruise management systems for more automated processes. This in turn reduces manual labor. The new support tool also features a dashboard which provides information on best line of sight between the vessel and available satellites, which is especially relevant close to the poles with low elevation where obstructions such as icebergs or cliffs could affect link availability, and therefore the quality of service that guests experience.

The Marlink cruise offering is truly a 'win-win-win' situation; convenient and affordable for guests, easy to administer for cruise lines on board, and, of course, it represents another promising line of business for this innovative company. And now, no matter where the cruise lines go next, they'll always be cruising safely in the cloud.

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All stats from 01/23/2019

Shipping Losses Lowest This Century as New Dangers Emerge

Large shipping losses are now at their lowest level this century having declined by over 50% year-on-year, according to Allianz Global Corporate & Specialty SE's (AGCS) *Safety & Shipping Review 2019*. The annual study analyzes reported shipping losses over 100 gross tons (GT). AGCS provides global marine and shipping insurance for all types of marine risk, from single vessels and shipments to the most complex fleets and multinational logistics businesses. All told, the Marine Line of Business contributed 11% to AGCS overall premium volume of EUR 8.2bn in 2018.

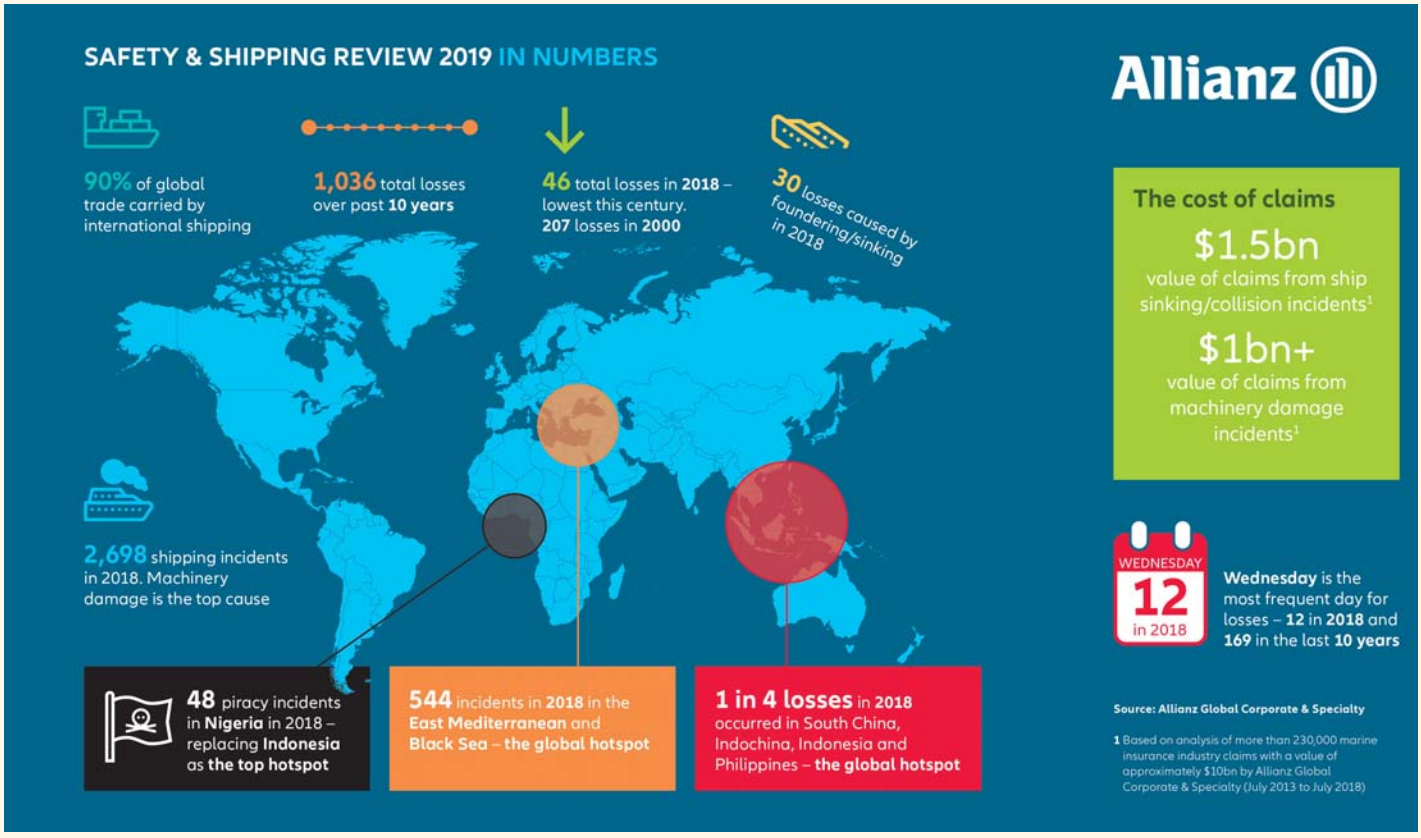
Total Losses Down

In 2018, 46 total losses of vessels were reported around the shipping world, down from 98 losses 12 months earlier, driven by a significant decline in activity in the global loss hotspot, South East Asia, and weather-related losses (10) halving after quieter hurricane and typhoon seasons.

Captain Andrew Kinsey, Senior Risk Marine Consultant with Allianz Risk Consultant (ARC) told ***MLPro*** in June, "I'm not sure we can point to any one particular fact that's the driver on the reduction in total losses. The total losses are down, but the cost of losses is still a big driver, given the size of the vessels and the size of the losses. We like to think that we're starting to get a more mature safety management system in place. I can remember when they were first introduced, and there were growing pains when we did those first procedures growing up in those first audits. I can see a real change. We're really starting to change the basic behaviors in the way we look at it."

Machinery Damage: the major causation

The plummet in total losses is encouraging, but the number of reported shipping incidents overall (2,698 in 2018) shows little decline – less than 1% year-on-year. Machinery damage is the major cause, accounting for more than a third of the 26,000+ incidents over the past decade – twice as many as the next highest cause, collision. Machinery damage is one of the most expensive causes of marine insurance claims, accounting for US $1bn+ in five years.



Captain Kinsey, who spent 23 years at sea – 13 as Master – also weighed in on this metric. "We're definitely looking at a lack of information being put out to the field. When you're talking about having tech reps come in and overhaul machinery during a quick turnaround port call, and you don't have the latest bulletins on the proper installation. Due to cost pressures, you have onboard ship staff conducting maintenance and then not properly installing the replacement parts, and it leads to losses." Kinsey continued, "Also, if they're trying to go to condition-based maintenance but they don't have accurate monitoring, be it vibration or lube oil sampling, then unfortunately you can get into a situation where it's run to failure. So it goes back to asking: we're collecting all this data, but how are we using it? Are we really using it in the predictive model?"

Worst accident locations and common causes of loss

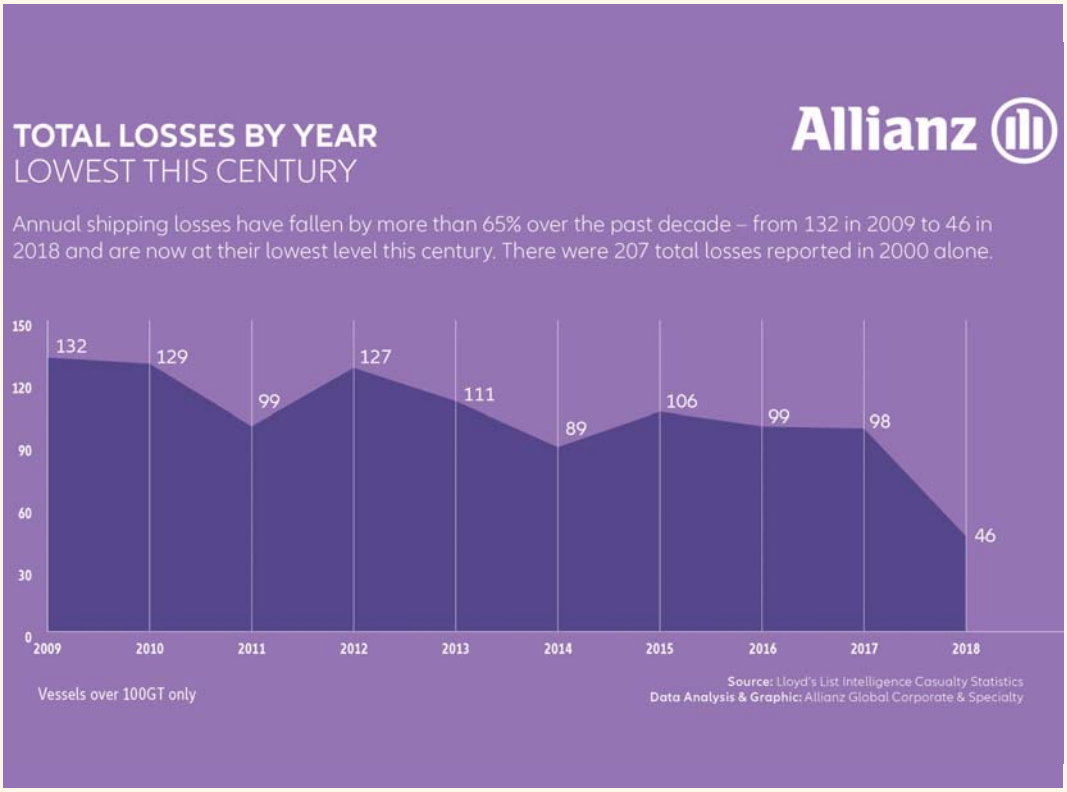
The South China, Indochina, Indonesia and Philippines maritime region remains the top loss location. One in four occurred here in 2018 (12), although this is significantly down from 29 a year earlier. Despite signs of improvement, Asia will remain a hotspot for marine claims due to its high level of trade, busy shipping routes and older fleets. However, newer infrastructure, better port operations and more up-to-date navigation tools will help to address challenges.

Defining root causes is complicated, insists Kinsey, who knows whereof he speaks, having sailed these waters professionally for many years. "It is diverse. It is crowded. There is a lot going on there and it's shallow. Put that on top of the regional political tensions with the Chinese and the US and the other eight or nine countries that are disputing the sovereignty and you've got tensions running high and a lot of traffic. On the ferries, you've got secondary tonnage that is brought over. In the loss of life category – whether it's Korea or down in the Philippines or Indonesia – we see a lot of overcapacity, older tonnage, and lack of inspections, unfortunately. So that's really something we have to continue to be vigilant on."

Fires continue to generate large losses on board with the number of reported incidents (174) trending upwards. This has continued through 2019 with a number of recent problems on container ships and three significant events on car carriers. Misdeclared cargo, including incorrect labeling/packaging of dangerous goods is believed to be behind a number of fires at sea. Meanwhile, the loss of hundreds of containers over board from a large vessel in early 2019 provides a reminder that damaged goods is the most frequent generator of marine insurance claims, accounting for one in five over five years.

Emissions compliance brings new challenges

Regulation limiting sulphur oxide emissions from January 2020 is likely to be a game-changer for the shipping industry, with wide-ranging implications for cost, compliance and crew. Large ports globally are even considering deploying so-called 'sniffer drones' to detect environmental rule-breakers. Hence, ships not using more expensive low-sulphur fuels may face significant penalties. But, mere compliance, says Kinsey, also brings



risk, especially in terms of the changes in fuel.

"This is a real problem and we're seeing it play out daily in the lower Mississippi River. We are seeing this loss of propulsion issue because, from heavy fuel to light fuel, you don't have the same BTU per ton. You don't have that same power per ton available. And, once again, it goes to training. Does the crew – and the office for that matter – understand how these new fuels are going to impact the performance of both main and auxiliary propulsion?"

Security threats evolve and challenge

Political risk has heightened around the globe and increasingly poses a threat to shipping security, trade and supply chains through conflicts, territorial disputes, cyber-attacks, sanctions, piracy and even sabotage, as evidenced by recent attacks on oil tankers in the Middle East. The growing number of migrants at sea and an increase in stowaways on commercial vessels also has serious consequences for ship owners, leading to delays, diversions and pressure on crew. Piracy incidents increased in 2018 to more than 200, and Nigeria is now the top global hotspot.

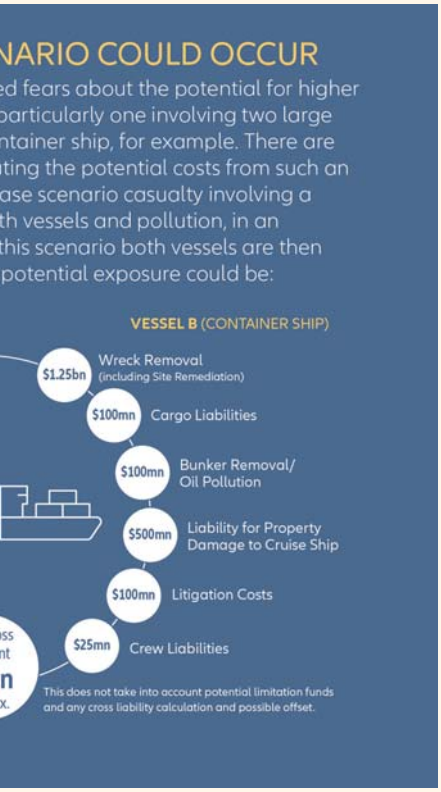
Kinsey explains, "With global piracy, we still have incidents but we do not have as many of the large-scale hijackings, because they don't have a safe haven. What happened off the coast of Somalia, and in some cases in the South China Sea, they could make them disappear, or they had someplace they could home them until they got their ransom. Once again, it's driven by economic pressures, just like the rise off Somalia, there's always a root cause."

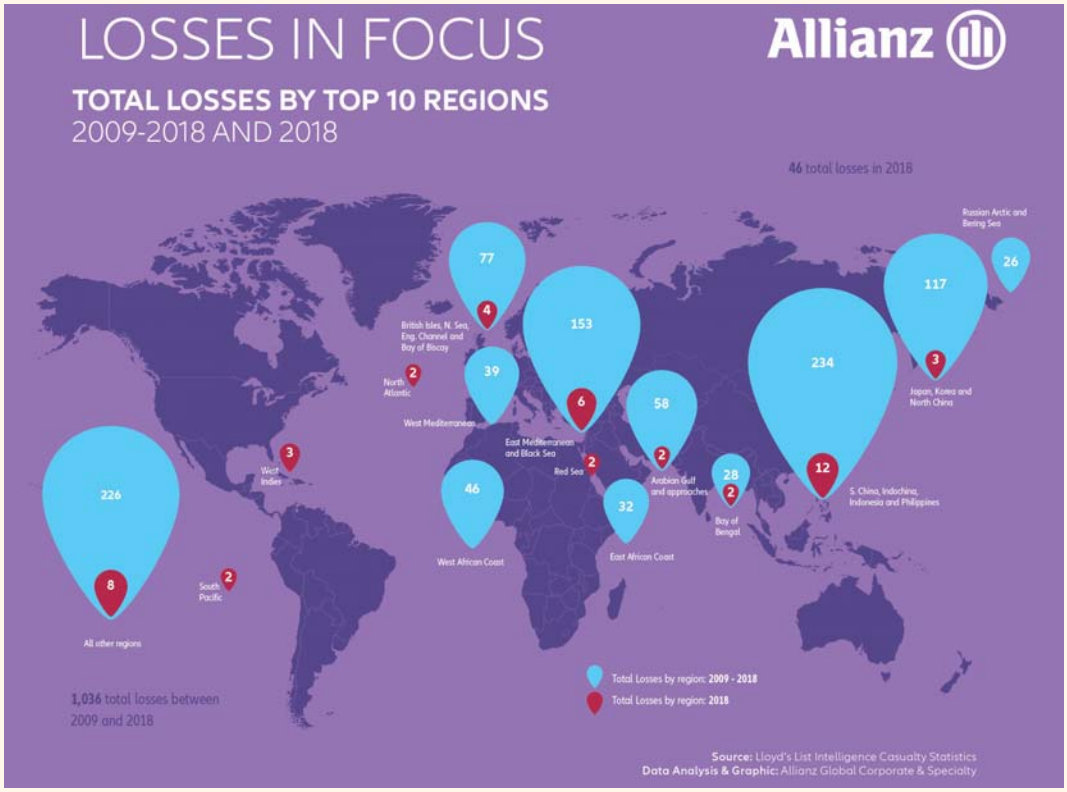
Emerging risks: among them – complacency

According to AGCS, the growing number of incidents on larger vessels is concerning. Container-carrying capacity has almost doubled over a decade and a worst case loss scenario could cost as much as US $4bn in the future. Separately, autonomous shipping makes waves and, says AGCS, progress continues to be made, but they also warn that technology is not a panacea if the root cause of incidents and losses is not addressed.

Finally, and while safety-enhancing technology in shipping has been a positive for safety and claims, accidents continue to happen due to overreliance on these devices. All that said, we finished by asking Kinsey to weigh in on what he thought the biggest threat to shipping would be in the coming 12 months. "One of the biggest challenges that we face year-in/year-out in the maritime industry is complacency, says Kinsey firmly, adding "We really need to stay vigilant, and from a marine insurance sales point, we bang the drum regularly. I'm out on the road meeting with the insureds that I'm speaking and trying to get content out to say that. But we really have to stay vigilant and understand that shipping is a vital link in our global supply chain." That's because, in the day-to-day drudgery of seagoing operations, familiarity can breed contempt.

Kinsey and AGCS have it right: the international shipping industry is responsible for around 90% of world trade. There are around 60,000 merchant ships, transporting every kind of cargo. The world fleet is registered in over 150 nations, and manned by over a million seafarers. That means the safety of vessels is critical.





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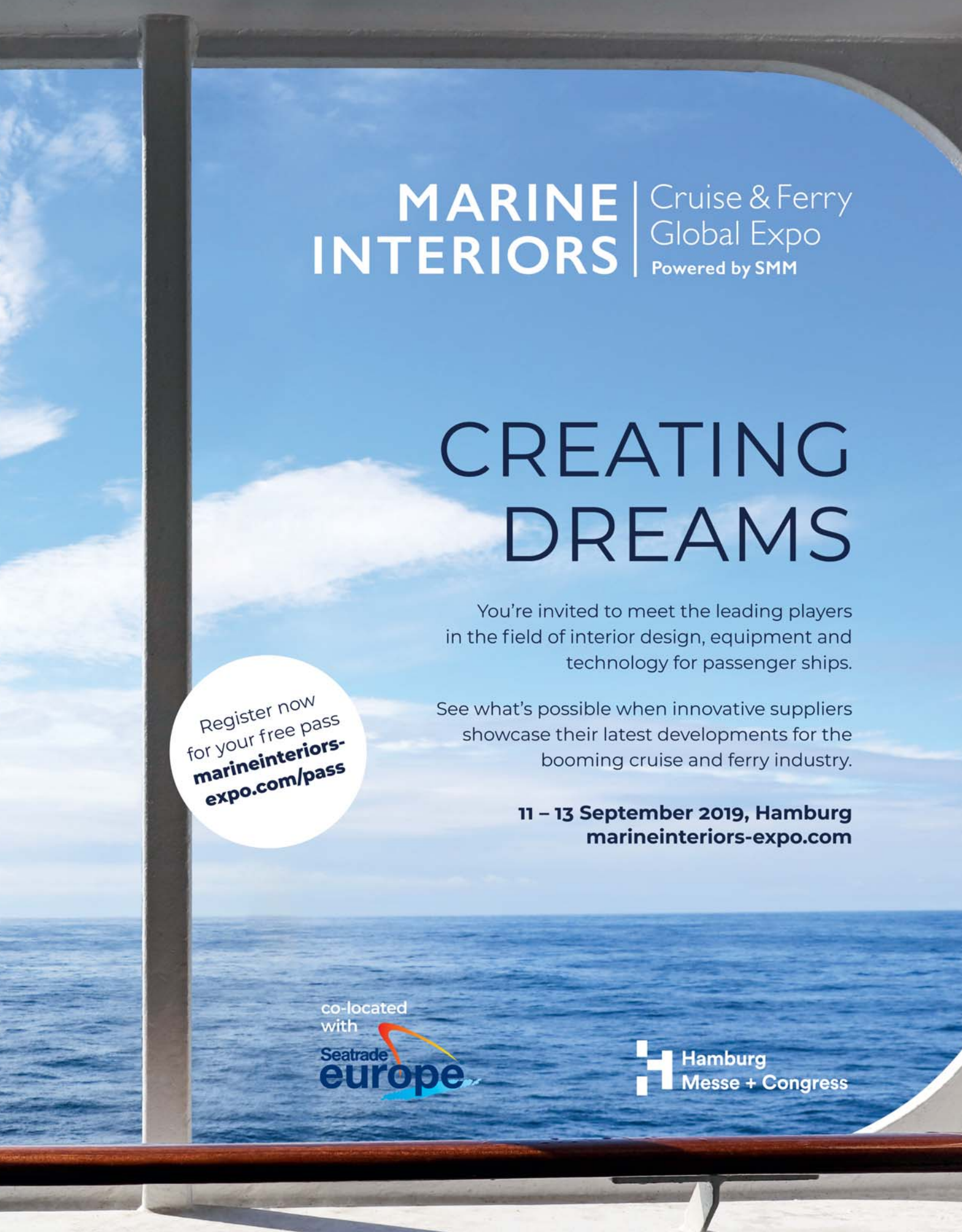
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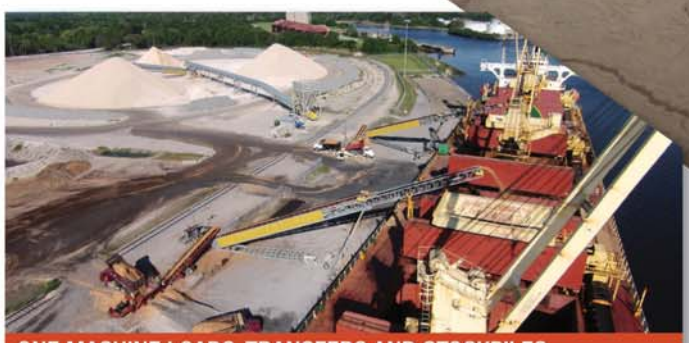

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