



MARITIME LOGISTICS PROFESSIONAL

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“By 2022, Carnival Corporation will take delivery of seven new cruise ships that will be powered by LNG in port and at sea for our Carnival Cruise Line, P&O Cruises UK, AIDA Cruises, Costa Cruises brands. We consider this “future proofing” our new ships”

– Tom Strang,
SVP, Maritime Affairs,
Carnival Corporation

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ON THE COVER



At the helm of Port Canaveral, one of Florida's fastest growing seaports, is Captain John Murray. Under his leadership, Port Canaveral has developed into a world-class gateway for cruises, cargo, recreation and logistics, as well as a gateway to new frontiers, including space. The best is yet to come.

Image: Canaveral Port authority





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FEATURED PORT

Port Canaveral:



Port Canaveral: Leveraging the Past, Building for the Future

The East Coast's most diversified cruise port is poised for an exciting run at the future. By Joseph Keefe

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TOP CRUISE PORTS



The USA is still King but it's a big, beautiful world out there – with plenty of destinations to explore.

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Editor's Note

Cruise Control

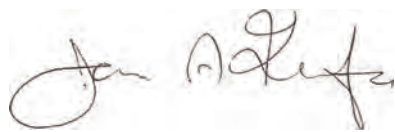
At a time when there is no shortage of uncertainty and a raft of challenges – regulatory, financial and operational – facing the broader global maritime industry, one sector seems to be plowing ahead with a bone in its teeth. That's especially true in the lucrative North American markets where U.S. ports alone in successive years have recorded healthy gains in both port calls and passenger throughput. One state alone – Florida – owns a whopping 61 percent of that market. Indeed, four of the top ten ports hail from Florida and those top 10 ports represent 87 percent of all U.S. passenger embarkations.

The cruise industry, booming in part because of a healthy global economy, represents a wide range of customers, from every economic strata, each looking for something a little bit different. Matching that demand is a different business model for each unique port of call. That's because, if you've seen one port, you've seen one port. One such success story can be found in Port Canaveral, Florida, when the best may be yet to come. Less well known than its south Florida neighbors, this ideally situated southeastern USA destination boasts convenience, attractions and more importantly, close proximity to the fastest growing population base in the lower 48.

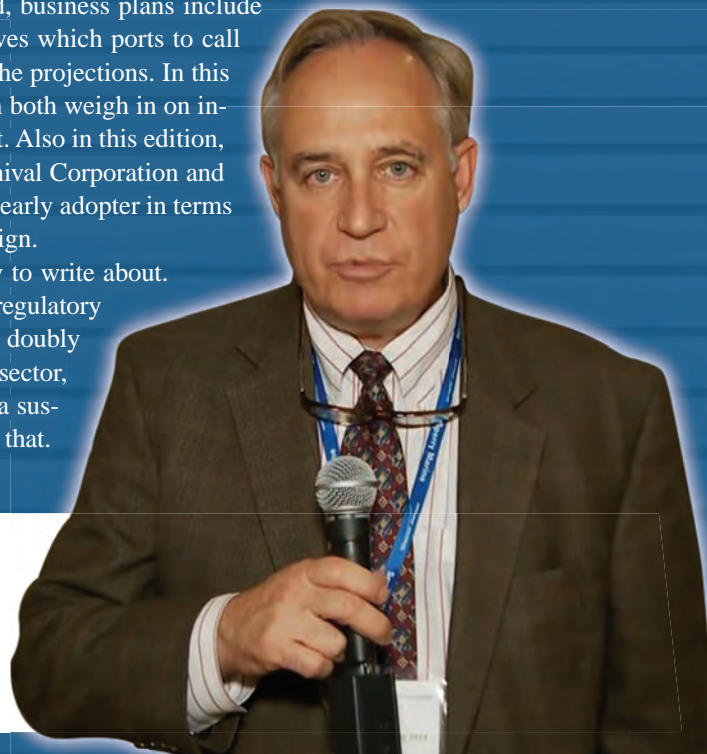
It is here, however, that we circle back to the regulatory challenges facing all of industry today. As the calls for reductions in stack emissions grow louder and the deadlines to comply inch closer, the financial and operational price of this non-voluntary effort have become more onerous. In response, the cruise industry suddenly finds itself on the leading edge of compliance, with dozens of LNG or dual fuel ships either being built or in the planning stages. Among the earliest adopters is industry heavyweight Carnival Corporation. Ramping up to meet that new challenge is Port Canaveral, which aims to deliver LNG to more than one line of business. That story begins on page 20.

As cruise demand picks up, and operators respond in kind, business plans include cruise newbuildings, but also the thought process that involves which ports to call at, why, and what to do when the real numbers don't match the projections. In this edition, *MLPro* contributors Barry Parker and Rick Eyerdam both weigh in on industry trends, business plans and what's likely to happen next. Also in this edition, Tom Strang, Senior Vice President Maritime Affairs for Carnival Corporation and plc, provides an in-depth look at how Carnival came to be an early adopter in terms of LNG, as a larger part of its corporate sustainability campaign.

The global waterfront is never dull. There is always plenty to write about. Often, that entails bad news or the downside of the newest regulatory anvil dragging a struggling sector down with it. Hence, it is doubly nice to be able to highlight the ongoing success of the cruise sector, as well as its ability to weave environmental challenges into a sustainable business model. As you well know, it isn't always like that.



Joseph Keefe, Editor | keefe@marinelink.com



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Getting Started: Dredging Policy 101

We all know that it takes a significant amount of time to complete an environmental analysis before a dredging project can commence. This usually means that an environmental impact statement (EIS) under the National Environmental Policy Act of 1969 (NEPA) must be undertaken.

NEPA requires completion of an EIS for all federal government agency actions that could significantly affect the environment. An EIS describes the positive and negative environmental effects of a proposed agency action and alternative actions. The NEPA process is designed to involve the public as well as

to gather and analyze the best available environmental data so decision makers can be fully informed when making choices. This regulatory review process can take several years and has nothing to do with the dredging companies themselves.

The dredging companies are not the applicants for the dredging projects. Rather, a port authority or state agency generally acts as the applicant for a port dredging project. In accordance with NEPA, the U.S. Army Corps of Engineers (USACE) is usually the “Lead Federal Agency” with the responsibility of evaluating the environmental impacts of a proposed dredging project. As part of the NEPA process, state level agencies, the National Marine Fisheries Service (NMFS), the U.S. Environmental Protection Agency (EPA) and other federal agencies act as cooperating agencies in the preparation of the EIS.

Once the NEPA review is completed, the Army Corps of Engineers will usually put the port and/or harbor deepening project out for bid. And, once awarded the dredging companies will begin the project.



CREDIT: GLDD

William Doyle provides a primer on dredging projects, funding, and environmental safeguards when it comes to maintaining U.S. ports and infrastructure.



The Market:

American dredging companies compete for contracts to build and maintain vital entrance channels, ports, and waterways. Navigation infrastructure enables U.S. seaports to contribute approximately \$780 billion to U.S. gross domestic product (GDP) annually, including almost 15 million jobs. Well-maintained navigation infrastructure also ensures ready access to strategic national defense ports. Failing to maintain our seaport infrastructure would undermine America's ability to compete in the global marketplace, damage our sealift capability, and harm our national defense.

The U.S. dredging industry has the capacity to fulfill any and all dredging projects in the United States. The U.S.-flagged dredging fleet totals more than 400 dredges. Once the regulatory reviews are completed, and funding is available the dredgers go to work. Moreover, and in preparation for new projects, the U.S.-flag dredging industry is already in a period of strong growth. It has invested over one billion dollars recently in U.S. shipyards, constructing approximately 30 new vessels including dredges, barges, tugs and other equipment. These shipyards include Eastern Shipbuilding, C&C Marine Shipyard, Corn Island Shipyard, Conrad Shipyard and Halimar Shipyard.

The dredging industry is an integral part of the 500,000 jobs supported by the U.S. maritime industry. Investment decisions are reliant on the perceived permanence of the Jones Act – the single, most fundamental domestic maritime law that has enabled the overall U.S. maritime industry to generate \$100 billion in annual economic output, \$30 billion in annual employee compensation, \$11 billion in annual tax revenues, and \$46 billion in value-added.

DCA's Domestic Agenda

In order to help expedite projects moving forward, the U.S.-Flag dredge industry strongly supports:

- **Hitting the HMTF Target:** In the Water Resources & Reform Development Act (WRRDA) 2014, Congress enacted a plan to gradually increase Harbor Maintenance Trust Fund monies for navigation infrastructure maintenance until 100% of the ad valorem taxes collected from shippers is used for

its intended purpose. The dredging strongly encourages appropriators to “hit the target” each year. Thankfully, the FY18 House and Senate appropriations bills do so.

- **More U.S. Army Corps ‘New Start’ Funds:** The U.S. dredging industry encourages Congress to provide more “new start” funds so that recently authorized navigation projects can proceed to construction on an economical basis. The dredging industry also encourages Congress to support new start and construction funding for coastal flood protection projects.

- **Coastal Protection & Restoration:**

- ✓ *Invest \$5 billion in federal, state and local beaches, dunes, wetlands, and other coastal risk reduction, erosion control, and habitat infrastructure over the next ten years.*
- ✓ *Create long-term, dedicated funding sources from coastal and offshore development.*
- ✓ *Encourage the U.S. Army Corps to implement the beneficial use of dredged material pilot program authorized in the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016.*
- ✓ *Fund and implement the South Atlantic Comprehensive Study (authorized in the Water Infrastructure Improvements for the Nation Act) to assess flood risk and shoreline vulnerability to hurricanes and sea level rise.*
- ✓ *Streamline and expedite regulatory and permitting timeframes.*

The Author William P. Doyle

Doyle is the CEO & Executive Director of the Dredging Contractors of America (DCA). Twice a U.S. Senate confirmed Presidential appointee to the U.S. Federal Maritime Commission (FMC), Doyle has, over the course of a long and celebrated career, worn many prestigious hats. Prior to his FMC appointment, Mr. Doyle served on cabinet and executive level boards and committees under both the Obama and George W. Bush Administrations. Before that, he served as an officer in the U.S. Merchant Marine as a U.S. coast Guard licensed marine engineer aboard numerous classes of vessels.

Natural Catastrophes Dominate 2018

By Captain Andrew Kinsey

Business interruption (BI) and cyber incidents interlink as the major threat for companies globally in 2018, according to the insight of 1,911 risk experts from 80 countries in the Allianz Risk Barometer 2018. However, for marine and shipping companies, natural catastrophes (34%), including storm, floods and earthquakes, takes the top spot – up from number 4 in 2017. BI tied with cyber incidents (31%), for the second spot followed by theft/fraud/corruption (27%) and fire/explosion (25%) to round out the top five business risks in the maritime sector for 2018. These incidents illustrate the complex nature of insurance risks as most are closely intertwined in complex loss cases.

Major risks in Focus: Natural Catastrophes

Industry sources have estimated \$330 billion in overall losses from natural catastrophes in 2017 with approximately \$135 billion in insured losses. At least \$90 billion resulted from the three category 4+ hurricanes – Harvey, Irma, and Maria (HIM) – that wreaked havoc in September, making it the most active hurricane month on record. Given the wide-ranging impact of HIM – from flood damage by Harvey in Houston to BI from record power outages in Puerto Rico caused by Maria – it may be some time before the final loss total is known.

The increasing frequency and severity of severe storms highlights the often fragile nature of our just in time supply lines. Hurricane Irma significantly impacted gasoline markets in Florida, first by prompting increased demand and then by disrupting the supply chain needed to deliver the fuel. The evacuation of people in anticipation of Hurricane Irma led to higher demand for transportation fuels and logistical challenges in supplying fuel to Florida that began before the hurricane made landfall on September 10, 2017.

Because Florida is largely dependent on marine movements of gasoline from the U.S. Gulf Coast, any threat of or actual disruption to supply sources and shipping routes, such as Hurricane Harvey, can affect gasoline markets. Between August 21 and August 28, 2017, when Hurricane Harvey made landfall in Texas, retail gasoline prices in Florida and Miami

increased \$0.10 per gallon (gal) and \$0.05/gal, respectively, based on EIA's weekly survey of gasoline prices.

These recent events are a reminder of how significant the impact of natural catastrophes can be; both socially and economically. As industries become leaner and more connected globally, it is becoming clearer that natural catastrophes can trigger or contribute to many other risks, such as business interruption or loss of market share. The impact of natural catastrophes goes far beyond physical damage to structures in the affected areas. They disrupt the normal dynamics of societal and industrial operations in the immediate regions affected and beyond, impacting a large variety of industries that might not seem affected at first glance.

Changing Climate

Risk Barometer respondents fear the 2017 natural catastrophe year could be a harbinger of things to come with many believing the intensity of natural catastrophes will increase in future due to the impact of a changing climate. Research shows there has been a 46% increase in weather disasters since 2000 and that 797 events were recorded in 2016 alone, resulting in \$129 billion of losses.

Changing global weather patterns is further demonstrated by the increase in Arabian Peninsula tropical cyclones. During the 1980s, only two storms were reported, but by the 2010s there have already been nine cyclones on record.

Climate change/increasing weather volatility is a new entrant in the top 10 global risks in 2018 and many scientists agree that changes in the climate and weather patterns have the potential to affect extreme events around the world in three primary ways: more intense windstorms, incidences of heavy rainfall leading to flooding events, and more severe drought episodes.

New Tools for Rapidly-Changing Risk Concentration

In order to keep up with rapidly-changing risk concentration, insurers are using a variety of new catastrophe management tools and insurance solutions to monitor storms and assess natural catastrophe damages from events such as those



Marine Risk Landscape



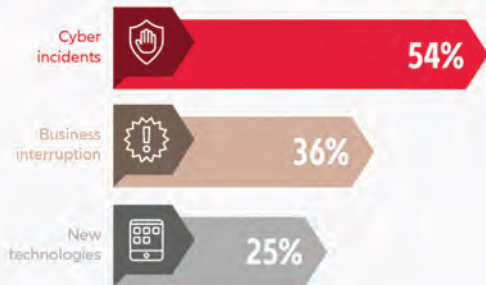
BI IMPACT IS EASY TO UNDERESTIMATE AND RISKS CAN BE EXTREMELY COMPLEX. IN MANY CASES, IT IS DIFFICULT TO KNOW WHAT THE ACTUAL EXPOSURE IS, HOW TO CALCULATE THE LOSS, OR EVEN WHERE THE ACTUAL DISRUPTION IN THE SUPPLY CHAIN OCCURRED. COMPANIES OFTEN UNDERESTIMATE THE COMPLEXITY OF GETTING BACK TO BUSINESS AND CAN HAVE BOTTLENECKS IN THEIR EMERGENCY PLANS, PARTICULARLY WITH REGARDS TO ALTERNATIVE SUPPLIERS.

in 2017. These tools include drones – used outdoors to assess roof wind damages and inaccessible locations, but also indoors to assess water damage in large facilities – and satellite technology and 3D imagery, to locate risks more quickly and more precisely.

Business Interruption: An Increasing Number of Disruptive Scenarios

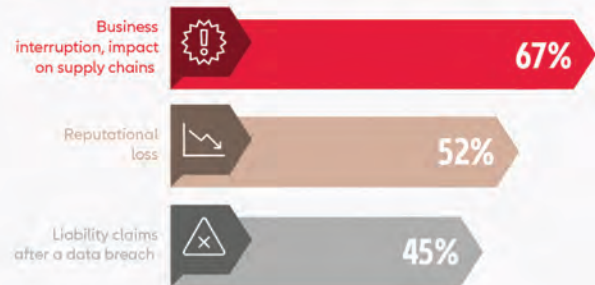
For businesses in the marine and shipping markets, BI tied with cyber as the second major cause of concern in 2018. BI can be triggered by traditional property damages resulting

WHICH BUSINESS RISKS ARE CURRENTLY MOST UNDERESTIMATED?



Source: Allianz Global Corporate & Specialty. Figures represent the percentage of answers of all participants who responded (902). Figures don't add up to 100% as up to three risks could be selected.

WHAT ARE THE MAIN CAUSES OF ECONOMIC LOSS AFTER A CYBER INCIDENT?



Source: Allianz Global Corporate & Specialty. Figures represent the percentage of answers of all participants who responded (857). Figures don't add up to 100% as up to three risks could be selected.

MARITIME RISK

from natural catastrophe losses or a break in the supply-chain due to property damages at the premises of a supplier or customer, often known as contingent business interruption (CBI).

BI losses for businesses can often be much higher than the cost of any physical damage. The average large BI property insurance claim is now in excess of \$2 million. This is more than a third higher than the average direct property damage loss. (\$2.4m and \$1.75m respectively).

But as many businesses transition from being rich in physical assets to deriving more value from intangibles and services, increasingly, BI is being triggered by non-traditional risk exposures that don't cause physical damage but result in lost income – so-called non damage business interruption (NDBI).

BI impact is easy to underestimate and risks can be ex-

tremely complex. In many cases, it is difficult to know what the actual exposure is, how to calculate the loss, or even where the actual disruption in the supply chain occurred. Companies often underestimate the complexity of getting back to business and can have bottlenecks in their emergency plans, particularly with regards to alternative suppliers.

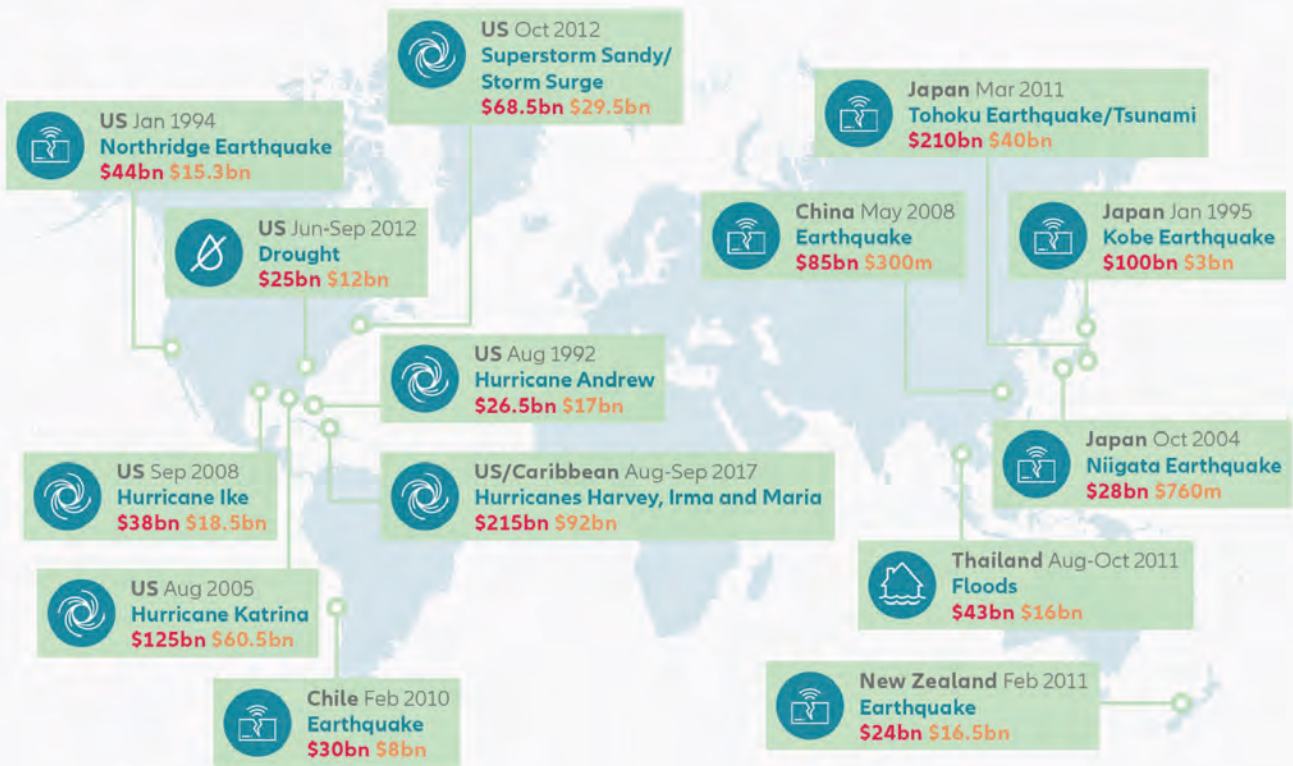
Nevertheless risks can be mitigated. Businesses should continuously fine tune their emergency plans to reflect the new BI environment, plan for a variety of scenarios and have strategic alignment through all departments on predictive detection of risks.

Cyber Risks Evolving

Five years ago, cyber incidents ranked 15th overall in the Allianz Risk Barometer; this year it is number 2 globally, number

COSTLIEST NATURAL CATASTROPHE EVENTS

1992-2017 (overall and insured losses)



Sources: Munich Re NatCatService. Graphic: Allianz Global Corporate & Specialty.
Data as of March 2016, except Hurricanes Harvey, Irma and Maria – as of January 4, 2018.
Loss locations are for guidance only.



1 in the United States and tied for second among marine and shipping executives. Cyber also ranks as the most underestimated risk and the major long-term peril across all regions and industries.

Recent events such as the WannaCry and Petya ransomware attacks brought significant financial losses to a large number of businesses. Others, such as the Mirai botnet, the largest-ever distributed denial of service (DDoS) attack on major internet platforms and services in Europe and North America, at the end of 2016, demonstrate the interconnect- edness of risks and shared reliance on common internet infrastructure and ser- vice providers.

On an individual level, recently identi- fied security flaws in computer chips in nearly every modern device reveal the cyber vulnerability of modern societies. The potential for so-called “cyber hur- ricane” events to occur, where hackers disrupt larger numbers of companies by targeting common infrastructure depen- dencies, will continue to grow in 2018.

The concerns addressed by the Risk Barometer respondents are also being expressed by other concerns, not just business interests. This is especially true on the Cyber Risk front. On Janu- ary 5, 2018, the U.S. Government De- partments of Commerce and Homeland Security released a draft report focusing on “Enhancing the Resilience of the In- ternet and Communications Ecosystem Against Botnets and Other Automated,

Distributed Threats.”

At Allianz, tracking developments to help chart a safe course remains a key focus. Training, education and planning

also continue to be important elements in maintaining a proactive operational profile that allow our business partners to address the complex risks they face.

The Author **Capt. Andrew Kinsey**

Kinsey is a Senior Marine Risk Consultant with Allianz Global Corporate & Specialty. He spent 23 years in the U.S. Merchant Marine and U.S. Naval Reserve, sailing in all licensed ranks, including Master. After coming ashore in 2006, Andrew worked as an independent Marine Surveyor. He is a 1984 graduate of the United States Merchant Marine Academy.

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Images courtesy of Damen

FOR DAMEN



Damen embarks on
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cruise newbuilding.

The cruise market is experiencing a period of success. The segment has been growing by around 6.7% annually for some time now and with strong growth for seen in some markets – notably China – the potential for the industry is considerable. In 2017 alone, some 26 million people embarked on a cruise vacation. Industry trade group Cruise Lines International Association (CLIA) says that this trend is likely to continue, well into the future.

There is rising demand for expedition cruise vessels; a market segment that Damen has developed a design for already, as well as forming partnerships with industry specialists. The company's successful SeaXplorer adventure yacht positions this global shipbuilder well to serve this market. Beyond this, Damen has formed a partnership with Expedition Voyage Consultants (EVC) to ensure clients and their passengers of the best possible experience in expedition cruising. EVC provides cruise line executives, investors and operators with expert advice on planning and operating all aspects of an expedition.

According to Andrea Trevisan, Damen's Senior vice President of Sales & Marketing, Cruise Newbuilding, the firm's journey into the cruise world is a logical step. The group has engineering and operational experience on complex projects, for instance in the naval and offshore arenas, which serve as strong references to its considerable. Trevisan told *MLPro* in February, "We are very enthusiastic about supporting our clients with the tools they need to fulfill the dreams of their guests. Providing safe, environmentally conscious and thoroughly enjoyable ships, our offer represents the optimal cruising experience to exciting destinations all over the world."

Since the introduction of the modular shipbuilding concept, Damen has delivered more than 6,000 vessels via more than 30 global shipyard locations. Today, Damen Shipyards Group operates in many shipbuilding sectors. With a global workforce numbering more than 9,000, Damen builds a wide variety of standard hulls for stock at dedicated shipyards in strategic locations. Production capacity is up to 180 vessels per year. Damen does more than build ships – it also has an international network of lifecycle support services that includes maintenance and repair & conversion facilities.

"We are very enthusiastic about supporting our clients with the tools they need to fulfill the dreams of their guests. Providing safe, environmentally conscious and thoroughly enjoyable ships, our offer represents the optimal cruising experience to exciting destinations all over the world."
– Andrea Trevisan, SPV Sales & Marketing, Cruise Newbuilding



Notably, superyacht builder Amels, part of the Damen Shipyards Group, has extensive experience in building luxury yachts; a testimony to the comfort Damen can provide passengers. Denmark-based naval architect KNUD E. HANSEN is a member of the Damen Shipyards Group as well as being recognized as one of the leading cruise design specialists in the world. KNUD E. HANSEN has been responsible for iconic designs such as the *Phoenix World City* – a design which played a pivotal role in defining the cruise industry in the 1990s.

And with Damen Shiprepair & Conversion (DSC) – already experienced and well located – Damen is able to provide support to cruise operators throughout the entire lifecycle of a vessel. DSC has sixteen yards located all over the world, including in the Caribbean and on the Atlantic coast close to turnaround port Southampton. All of this combined with Damen's family values, long-term vision and a commitment to working with passion, pride and quality, means that clients can take confidence in Damen as a reliable partner.



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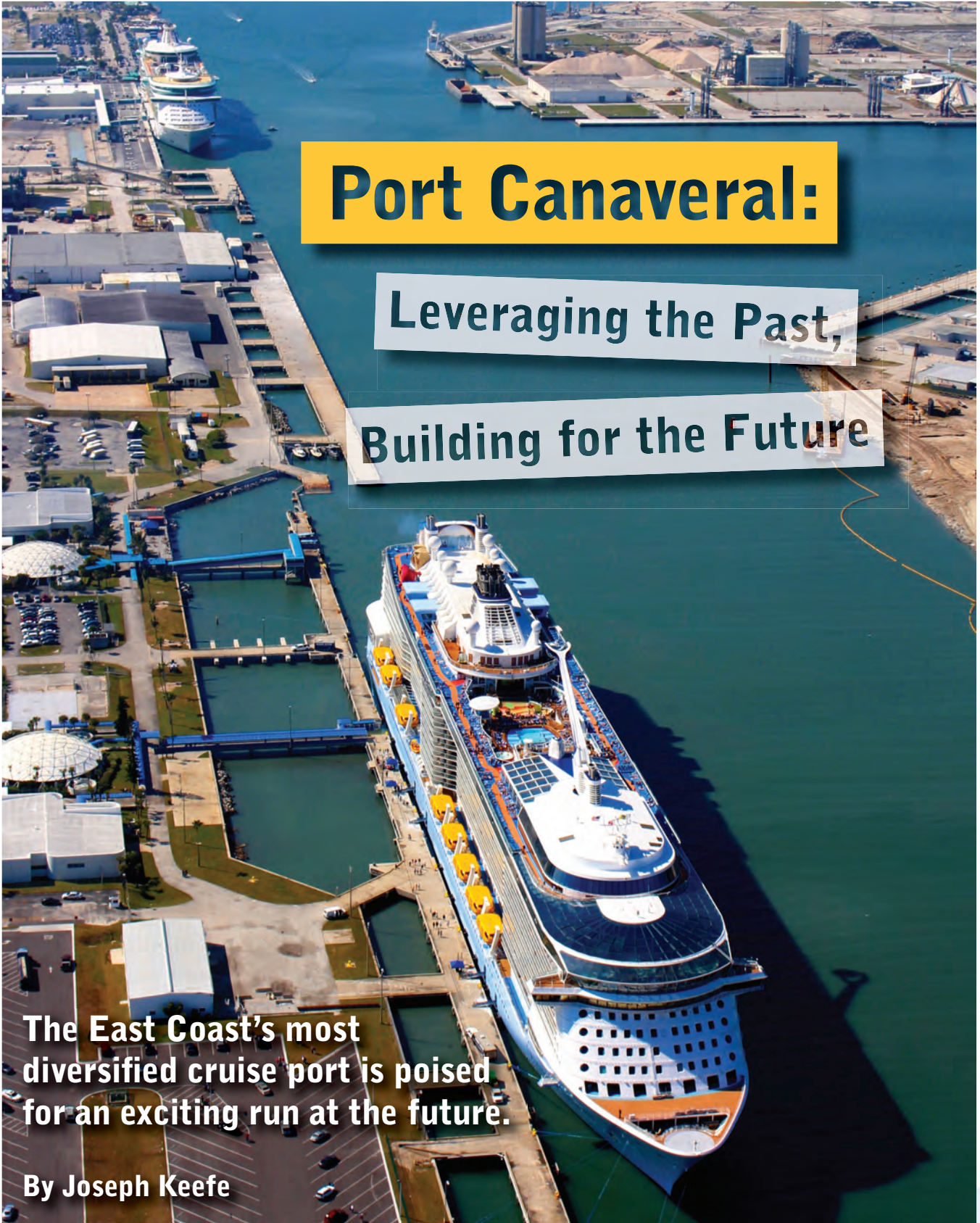


A Closer Look





PORTS: Canaveral



Port Canaveral:

Leveraging the Past,

Building for the Future

The East Coast's most diversified cruise port is poised for an exciting run at the future.

By Joseph Keefe

Almost 38 years ago, Port Canaveral, Florida had some minor cargo traffic, a large U.S. Navy presence, some submarines, and was homeport to an obscure fleet of specialized Military Sealift Command missile tracking vessels. And, not much else.

Those who called at the port in those days couldn't possibly have visualized then what the port has now become. That's because the first cruise vessel port call was still almost a decade away and the development of the local physical infrastructure to support the cruise traffic that would eventually come, hadn't yet been started. In contrast, today's operating revenues will reach \$100 million and the port has quietly moved up the ladder to become the world's second busiest cruise port.

Notwithstanding all of that impressive growth, Port Canaveral has no intention of sitting on its hands. Situated in the rapidly growing Southeastern United States, the port is forging ahead with a recently announced 30-year Strategic Master Plan. Hence, the next 30 years promise to be just as exciting as the previous 40. Quietly, Port Canaveral is developing its own unique signature, leveraging a business niche unlike anything else on the East Coast.

In the Beginning

The master plan has been in development for over two years, and addresses each of the Port's major businesses: cruise, cargo, parks and recreation, and commercial development, as well as the potential offered by the resurgence and growth of the space industry in the Port's region. Port CEO Captain John Murray puts the document in perspective, saying, "The Plan presents various opportunities over the 30-year planning horizon, but not every project in this Plan may become a reality." Today, roughly 80% of the port's revenue stream is from the cruise business, and as much as 20% of that emanates from parking revenue. He explains, "Just like an airport. We've got a very unique business model here with respect to cruise."

In the beginning, it began with Premiere Cruise Line. Leveraging a partnership with Disney, this entailed cruises to the Bahamas from Port Canaveral. Eventually, Disney also built ships and the rest is history. Port Canaveral was firmly on the map as a cruise port, initially because of their close and convenient proximity to Orlando. At around the same time, other operators – Norwegian Cruise Line, Royal Caribbean, Carnival – all expanded their local footprint.

Carnival eventually identified the port as an opportunity for drive-in customers. Separately, Disney decided that it would be a great complement to its theme park business. By 1999, the port's cruise market had exploded. Part of that success can be attributed to location. Every port has some kind of challenge. Port Canaveral's geographic advantages include direct access to the Atlantic Ocean with no bridges or air draft limitations, and a transit time from first buoy to dock of only 45 minutes.

"We're going to be the first cruise port, I believe, that will be ready to accept LNG vessels. If we're the second largest cruise port in the world, then they are probably coming here. You have to evolve with it as it goes."

*– Captain John Murray,
Port Canaveral CEO*

The Port's central east coast Florida location, combined with uncongested easy access to major road and rail systems puts every major Florida market within three hours of the Port.

A Different, Local Business Model

Beyond its four 'anchor' clients, Port Canaveral hosts as many as 20 different cruise lines, many of them so-called 'independent' cruise lines that provision, change out passengers and crew. Much of this traffic involves the increasingly popular practice of 'theme' cruises that cater to a narrow, but enthusiastic passenger base. Here, they can get off and go to the Space Center or head into Orlando for a Disney experience.

With a nod to its two rivals to the south, Port Canaveral is cognizant of what can be and what will not. That business model has nothing to do with higher profile ports, and depends on a different demographic.

Miami is the largest cruise port in the world and Port Everglades comes in at number 3 after Port Canaveral in terms of global passenger throughput. But, Port Everglades and Miami both primarily serve different markets, both relying on a strong international component. Royal Caribbean and Carnival are headquartered there. There's a reason why Miami is number one, but both ports have their own challenges.

Constrained by its physical footprint, Miami can't expand without taking away from their cargo side. The answer to that challenge has been to rebuild old terminals and offer capabilities for the new ships. "They're going to do fine at that. And it will always be the desired market for that international cruise passenger," admits Murray. Similarly, Port Everglades finds itself in the same position: great connectivity to two major

▶ Port Canaveral

international airports but also limited by their ability to grow.

According to David German, Port Canaveral's Director, Cruise Business Development, Port Canaveral is different. "A majority of our cruise passengers are US citizens and Canadians. We are a big drive-in market and that's a big plus in our favor. We're balancing the Orlando theme park market, we're complementing that, and then they complement our business." Driving in from the regional Southeastern states, families will take a week off involving a 3-day cruise out of Port Canaveral and then spend 4 days at the theme parks.

The drive-in market has its definite advantages. It eliminates the uncertainty of flight delays for those coming in for vacation, as well as the considerable cost of putting as many as four people on an airplane and then spending the night before the cruise in a local hotel. That's not to say Canaveral customers don't fly in. They do. But, here, they can be at the ship within an hour of departing Orlando International airport.

A quick drive through Canaveral's parking lots reveals a great deal. The autos hail from South Carolina, Georgia, Tennessee, and North Carolina. When they arrive, Port Canaveral is ready for them. That's because even the smallest garage at the port has more than 1,000 parking spaces.

Similar to the New Orleans model of selling a cruise and throwing in Bourbon Street as a bonus, Port Canaveral has its

own unique draws, most of which translate into dollars for local businesses. A same day arrival and cruise ship boarding is far easier here than at southern Florida ports, but most people come in and spend the night. Those hotels trend towards the large suite-style, capable of putting multiple people in the same space. And, while some of that is a function of the cruise industry, it also leverages other attractions, as well.

In practice, it is a solid business model and the local hoteliers are succeeding with it. Moreover, most of these hotels offer off-site parking at the hotels where they can hold vehicles so customers don't have to pay the higher, premiere parking prices at the port.

Not Just Cruising: Quadri-Modal

Port Canaveral itself is not 'quadri-modal,' but Brevard County markets itself as such because it has airports, a space port, a sea port, and then of course, the land component. It is the not-so-obvious space connection with the rapidly growing commercial space industry that the port also has its eyes on.

Tourism aside, the preferred method of recapturing rocket boosters for reuse involves a maritime presence and has a maritime component with offshore vehicles that they can land the boosters on, bring them back to the port, pull them off the conveyance, and recycle back into service at the Air



PORT CANAVERAL THROUGH THE YEARS, BY THE NUMBERS ...

YEAR	Passengers	Cruise Lines (#)	Ship Port Calls	Cruise Revenue
2017	4,526,626	12	1,395	72,799,989
2016	4,248,296	10	1,388	68,214,524
2015	4,168,666	10	1,381	63,006,688
2014	4,167,258	9	1,419	58,284,973
2013	3,986,994	9	1,404	53,135,894
2012	4,004,283	8	1,363	52,401,125
2011	3,144,668	9	705	42,270,635
2010	2,802,951	9	618 (*)	34,488,305
2009	3,250,775	10	1,583	32,037,675
2008	3,573,960	11	1,546	34,969,584

(*) Sterling Casino (gaming vessels) ceased operations.



Force base, or the, NASA facilities. Port Canaveral, already entrenched in that game, aims to be the preferred venue for all of that, as well.

In addition to the commercial and support angle for the space component, those launches are also quite exciting to watch, as well. A recent launch proved that out and the passengers got a bonus on at least one Canaveral departure. “One of the cruise ships sailed – I won’t say which line but it was one of our Sunday vessels – and my wife and I are down the coast on the beach, and we went outside and thinking that ship should have been gone by now – it was 5:30, they’re normally long gone and passing by our place down there – and we looked out and





“A majority of our cruise passengers are US citizens and Canadians. We are a big drive-in market and that’s a big plus in our favor. We’re balancing the Orlando theme park market, we’re complementing that, and then they complement our business.”

– David German, Port Canaveral’s Director,
Cruise Business Development

there it was, waiting for the launch,” said Murray. With cruise ship transit schedules planned as they are, that kind of ad-hoc entertainment is a bonus for Canaveral-based cruise ship.

LNG: not just for ships anymore

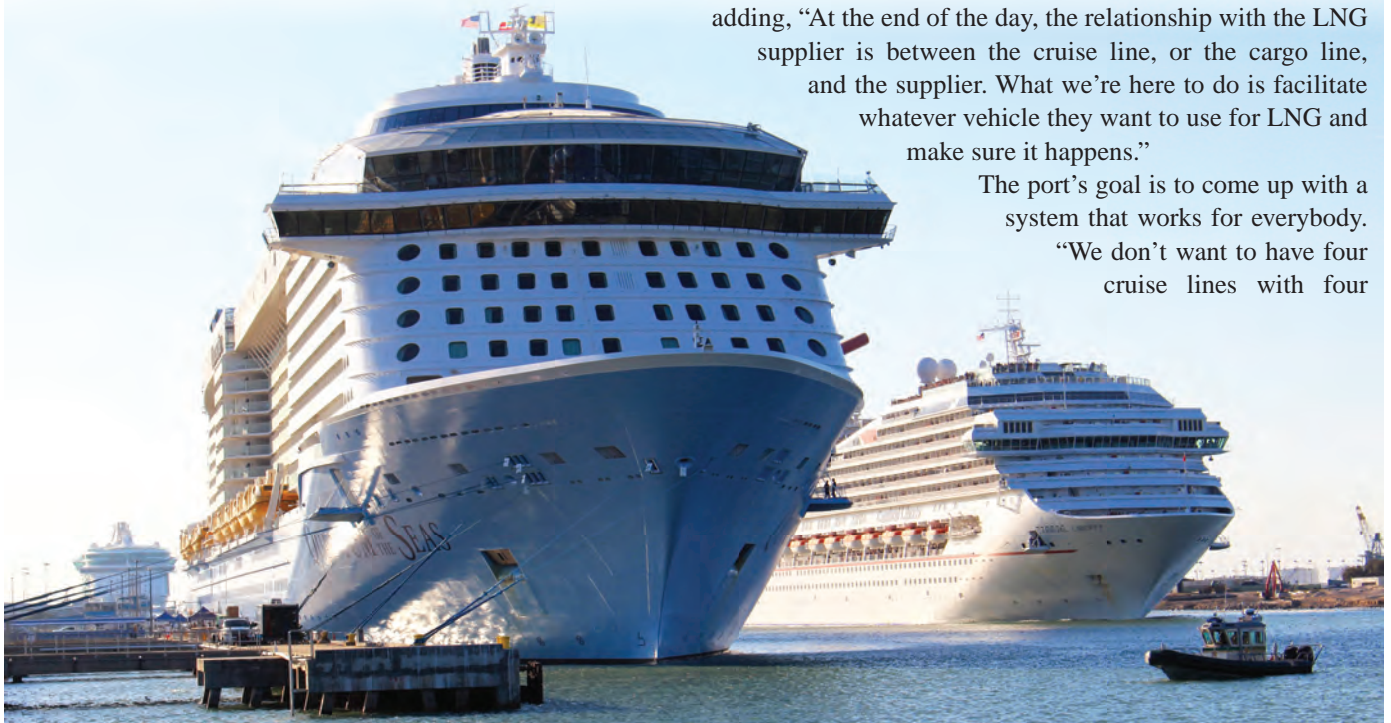
Driven by increasingly environmentally conscious operators, LNG-powered cruise vessels are coming. The recent news that Carnival Corporation had agreements in place to build eight LNG-powered cruise ships across four of its 10 global cruise brands brought that point home in no uncertain terms. Carnival isn’t alone in that effort.

That’s got Port Canaveral’s attention. Murray says flatly, “We’re going to be the first cruise port, I believe, that will be ready to accept LNG vessels. If we’re the second largest cruise port in the world, then they are probably coming here.” He adds for emphasis, “You have to evolve with it as it goes.”

The rapidly developing Crowley and Tote LNG bunkering operations just down the coast makes it clear that there will be many ways to get to the Promised Land. That involves both barge-based bunkering as well as fixed shoreside infrastructure. At Port Canaveral, all options are on the table. “Everybody wants to be in the LNG game,” explains Murray, adding, “At the end of the day, the relationship with the LNG supplier is between the cruise line, or the cargo line, and the supplier. What we’re here to do is facilitate whatever vehicle they want to use for LNG and make sure it happens.”

The port’s goal is to come up with a system that works for everybody.

“We don’t want to have four cruise lines with four





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Port Canaveral



“... The relationship with the LNG supplier is between the cruise line, or the cargo line, and the supplier. What we’re here to do is facilitate whatever vehicle they want to use for LNG and make sure it happens. We don’t want to have four cruise lines with four different concepts of operation. We don’t have enough real estate to support that.”

– Captain John Murray, Port Canaveral CEO

different concepts of operation. We don’t have enough real estate to support that.” Lurking in the background is the deal between Harvey Gulf and Shell to build an ATB LNG carrier to supply bunkers to U.S.-based cruise lines. The changing landscape adds up to two things: LNG as a fuel is moving ahead, and the cruise industry is emerging as the primary driver. Port Canaveral aims to be at heart of that development.

Port Canaveral also has other plans for this clean fuel. As

the commercial space industry contemplates burning LNG as a primary fuel, the need for the local space community to source this energy becomes more important. Already serving the space industries maritime assets, Canaveral looks to do the same thing when it comes to fueling the rockets of tomorrow.

For Port Canaveral, space, and not cruise ships, will be the initial driver for LNG. Murray puts the situation in perspective. “We’ve got the ships coming; we’ve got the rockets com-



ing, all at the same time. The question is how are the rockets going to get LNG? And, for that matter, the ships?" The answer, he says, involves a LNG storage facility at the port. That approach allows the port to better service both space and marine. And, he says, "The most logical way to do it is through the port, by moving LNG in bulk."

The Master Plan

In the works for almost two years, the plan focuses on long-term uses for the port. That necessarily involves sorting out the local politics that we're sorting through. Port Canaveral is a special district of the State of Florida, with five elected commissioners. As a special district, the port has the power to levy ad valorem taxes. Murray says that's not going to happen. "We haven't done that since 1986. We're not going to do that. We survive on our revenues and government grants from the state and the federal level, but we do everything on our operating income."

Putting together the Master Plan spanned two years, in large part because of the resurgence of the space industry and the advent of the LNG piece. Neither variable could be easily predicted. In the end, the port knew that it had to (a.) be positioned for the future, (b.) recognize that 'cruise' is and will be its core business, and (c.) avoid trying to be something that the port is not.

"We're not going to be the new, large, booming container port," Murray told *MLpro*, continuing, "We've got our container terminal and it's evolving, but we recognize that it's never going to be the size of Savannah. That's not the market that we serve."

Separately, the commercial space industry needs the port. They can't go to Jacksonville to make it work. Dave German explains, "We recognize the value of the space industry to the local community and surrounding areas in Central Florida. So being who we are in this community, it is incumbent upon us to make sure that that industry is successful. It is not going to be sufficient to ever make it wildly profitable, but we're going to do everything we can to support it."

An equally important part of the Master Plan recognizes the unique makeup of the port's existing multi-use signature. For example, the recreational component here offers more activities – parks, free public boat ramps, marinas – than any other port in the state. Murray insists that none of that will change. "We have some very non-port-type things here that, and because of our stature in the local community, we're going to continue to maintain those. Sometimes, a developer comes in and says, 'How could you keep that as a park? It'd be a great hotel.' Well, it's not going to be a hotel – it's going to be a park." At the same time, the preservation of commercial fishing is part of the port's charter.

The future includes all these things, and more. That's be-

cause even though 80 percent of the revenue stream emanates from the cruise side, a bigger percentage of the total commerce lies elsewhere. An active cargo port, Port Canaveral is also a critical hub for gasoline distribution across the southeastern United States.

There are many layers to the Canaveral "onion." As many as 4,000 vehicles landed in the last two weeks of December, with two ships supporting that business monthly. In January, the new class of post-Panamax shipping vessels made an inaugural visit to Port Canaveral. The MOL Brooklands, with a 125-foot beam and capacity to transport over 7,400 vehicles, is the largest vessel to call on the Port.

Even with a finite amount of land to work with, the port looks for new ways to bring in new customers – particularly for its cruise business. That starts with being able to accommodate the largest ships in the world that in turn can serve more passengers per vessel. With both of those boxes checked, there are other areas to attack, as well. Potential terminals have been identified that will help the port grow into the future, and the port has its eyes on another major cruise line.

Quietly and deliberately, Port Canaveral has made important strategic moves to accelerate its growth. Along the way, all infrastructure has been self funded from operating revenue. As it gets ready to build a new cruise terminal, for \$150 million, the port has already spent more than \$87 million renovating two of its older facilities. The recently completed six-month deepening project of Port Canaveral's West Turning Basin provides deeper draft vessel access equal to the authorized Port channel depth of 44 feet. Looking ahead, expenditures of almost \$500 million are planned over the course of the next five years.

With the right infrastructure, adequate channel depths and a whole lot of planning, Port Canaveral has no problem hosting the largest class of ship in the world – the Oasis class – for Royal Caribbean. For most of the largest cruise vessels, draft is not an issue. Air draft, on the other hand, certainly is. That's because those ships have an air draft of 236 feet.

Murray outlines the Port Canaveral advantage succinctly. "We don't have any bridges. We've got 43 feet of water alongside our cargo berths and in the turning basin and 44 feet in the main channel, so we've got plenty of water for almost anything that comes at us." That's important because the four cruise line that are home-ported in Canaveral today – Norwegian Cruise Line, Carnival, Royal Caribbean, and Disney – all feature the larger vessels.

Murray sums it up nicely when he says, "We're probably the most diverse port in terms of books of business – we have containers, we have cars, we have cruise, we have bulk, we have liquid bulk and now, rockets. You go down the list, we have it all. Just not in the large volumes of some other ports but we have a little bit of everything." Even at the world's number two cruise port, a little bit of diversity sometimes goes a long way.

The Cruise Industry



Shifting populations, desirable destinations and yes – economics – drive the cruise industry of tomorrow.



Credit: Carnival

Business Model Evolves



Credit: South Carolina Port Authority

By Barry Parker



Credit: Carnival

Unlike the cargo side of shipping, the cruise business has seen a steadily upward trajectory, with steady growth over decades. The 2018 annual “*State of the Cruise Industry*” report from Cruise Lines International Association (CLIA) was projecting a count of 27.2 million passengers for 2018, showing a steady rise from the 19.1 million, the figure for the beginning of the decade, and a substantial increase from 25.8 million in 2017.

But, outside of the true mega cruise ports in south Florida with their enormous economies of scale (and therefore, the ability to attract more cruise business), smaller ports strategizing to gain a piece of the burgeoning cruise business need to be reminded of the mindset of the cruise lines. Arnold Donald, CEO of Carnival Corporation, the industry’s dominant vessel operator, in its Q3 2017 earnings call, told investors: “We are still very return focused. We have no hesitation to relocate a ship if necessary for it to overall have more accretive return for our business and just keep in mind it’s still so small.”

Underscoring Donald’s declaration is the news that Carnival had late last year entered into an agreement with Shell to provide LNG bunkers in its U.S. East Coast trades. Importantly, Tim Strang, Senior Vice President Maritime Affairs for Carnival Corporation, told *MLPro*, “The use of a mobile bunker vessel allows more flexibility in delivery location.”

Situational Strategy

Economists and consultants have long tried to describe the ports serving the cruise companies. Ports may be “origins” – actually gateways and gathering spots for passengers (located near population centers or industry infrastructure). Miami and Port Everglades instantly come to mind. Alternatively, they might be “destinations” – places of interest to tourists (but not generating passenger traffic). Islands in the Caribbean or perhaps New Orleans are typical examples. But real life is messier than the consultants depict. These sometimes overlapping delineations are imprecise.

Ports in North America present a different type of overlap – where they overlap with cargo shipping, or with scenic downtowns. Dr. Jean-Paul Rodrigue and Dr. Theo Notteboom, noted transport economists at Hofstra University and authors of the online resource *The Geography of Transport Systems*, wrote, “The siting and setting of cruise port activities is subject to constraints usually not found for regular port activities.” Such constraints include seasonality (where cruise ships may not run in colder months) and also congestion (where crowds from large ships may overwhelm a port’s waterfront area).

For port planners in North America, the process of integrating cruising and cargo is fraught with challenges tied to intra-regional competition where ports compete for passengers, and the evolution of cargo supply chains. The two economists cite the trend where one-time breakbulk cargo terminals, likely

“

Charleston, SC is a port that has faced a different type of challenge, where the crush of passengers disembarking at cruise terminal near the heart of a historic district has upset some of the old-timers. Over the past six years, a legal battle has ensued between the South Carolina State Port Authority (SCSPA) and local environmental and preservationist groups regarding permitting for construction of a new cruise terminal at its downtown location. In the latest skirmish in this bigger battle, the state’s Court of Appeals sided with the SCSPA.”

near city centers, are converted into cruise terminals. But precedents also exist for movements in the opposite direction.

The situation in Galveston and Houston highlights some of these swirling currents. Galveston, at one time a leading port for U.S. exports of agricultural products, has continued to capture a portion of this business. In recent years, Galveston has annually exported between 2 – 3 million metric tons of grain, mainly wheat and sorghums. It also has been active in other bulk commodities, as well as moving heavy equipment and automobiles. Though Galveston logged its first cruises in the mid 1970s, the port began developing its year-round cruise business in 2000 with the opening of its Cruise Terminal 1 in a conversion of an 1870’s vintage warehouse originally serving the Mallory Steamship Company.

At the port, cruise embarkations exceeded 900,000 passengers in 2017. Presently it handles vessels for Carnival Cruise Line, Royal Caribbean Cruise Line, and Disney Cruise Line – mainly on cruises around the Western Caribbean. The port highlighted its recent successes, saying, in a news briefing: “December 2017 was a record month for cruise ship calls in one month. The 33 cruise ship calls recorded in December broke the previous record of 29 turnarounds set in December 2005.”

Its Cruise Terminal 2 highlights the story of transformation from cargo to cruise. In 2002, the Port of Galveston built a new terminal after demolishing a 1930’s era grain elevator, with its numerous concrete silos, and railcar unloading facility (shuttered in 1998 as part of a \$30 million plan to up the port’s cruise capacity and handle larger vessels). A presentation at an American Association of Port Authorities (AAPA) 2015 Cruise seminar by then Port Director Michael Mierzwa

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highlights the re-use of an old and cavernous Galveston Wharf warehouse. That facility was refashioned as an integral part of the terminal (which was expanded further in an \$11 million project completed in 2016). Importantly, and perhaps crucial to its success, the 2003- 2004 project was a Public Private Partnership (P3), with financial participation from both Royal Caribbean and Carnival.

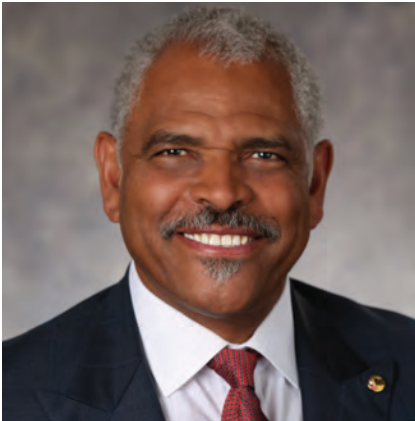
Across the bay, in Houston – an opposite side of the same story was occurring. Houston had also participated in the nascent business in the 1970s as the first true cruise vessels came on the scene, and made significant positive strides in the early 1990s, including home-porting of vessels for Norwegian Cruise Lines (NCL). After riding market waves that turned upward in the early 2000’s with vessels calling at a makeshift cruise facility at Barbour’s Cut, the port incorporated plans for a modern cruise terminal, with a large parking lot, into the design of the adjacent Bayport container terminal. Market vicissitudes continued through 2008, when the new cruise terminal came online (without customers), through 2011 when NCL and Princess Cruises began using the terminal. By late 2015, vessel redeployments saw Bayport’s cruise facility idled once again, in spite of financial incentives for cruise companies to call there.

Cruise Economics

The cruise companies’ efforts to squeeze out the most dollars result in logistical contortions. In early 2016, NCL shifted its Norwegian Star (then sailing out of Tampa) to Australia, substituting it with Norwegian Jade (pulled out of Houston). Norwegian Cruise Line Holdings’ President and CEO, Frank del Rio, described the move in a 2015 investor call, saying: “Norwegian Star’s seasonal deployment will satisfy both contingents and mark the brand’s return to the region after a 15-year absence.” He added, in an oblique reference to Houston, “This new deployment also coincides with the ramping up of our sales and marketing operations in Australia ... and replaces our lowest yielding seven-day product.”

Around the same time, Princess Cruises pulled its Houston based Caribbean Princess out, moving it into the Australia trades. Unlike cargo, the cruise business requires sensitivity to consumer views which, in turn, drive the yield calculations of utmost importance to executives such as Mr. Donald and Mr. del Rio. On CruiseCritic.com, an online community for the sector, one commentator offered that: “The Port of Houston terminal is located in a dump. The Galveston terminal is beside the Strand. ‘Nuff said.” Ultimately, though, part of Galveston’s advantage proved to be its closeness to the open

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We are still very return focused. We have no hesitation to relocate a ship if necessary for it to overall have more accretive return for our business and just keep in mind it's still so small.

– Arnold Donald,
CEO of Carnival Corporation

water, with CruiseCritic.com noting: “Galveston is also just 30 minutes from the open sea, so shops and the casino open fairly quickly after sail away.” Professor Andrew Coggins, Professor in the Lubin School of Business at Pace University, told *MLPro*, “Where cruising and cargo operations are in the same port, it can be tricky especially if they are not geographically separated. In Houston, for example, there were instances of disruptions and delays when the Ship Channel was closed after accidents and oil spills. Even on normal days, attention to scheduling of vessels coming inbound and outward is critical.”

Push and Pull

For ports, realism and forward thinking are critical. As far back as 2011, Port Houston’s marketing department had already begun to scope out alternative uses for the cruise terminal, and by 2016 its planners noted that trends in the automobile industry (including significant activity in Mexico) augured well for an auto import/processing facility in the Houston area. This business could be served by roll-on/roll off vessels, with vehicle cargoes stored on the out-sized parking lot. In mid 2016, a five year lease deal was struck with a large processor. Port Houston estimates that the terminal is expected to import 36,000 vehicles over the next three years with two vessel deliveries per month.”


Charleston, SC is a port that has faced a different type of challenge, where the crush of passengers disembarking at cruise terminal near the heart of a historic district has upset some of the old-timers. Over the past six years, a legal battle has ensued between the South Carolina State Port Authority (SCSPA) and local environmental and preservationist groups regarding permitting for construction of a new cruise terminal at its downtown location. In the latest skirmish in this bigger battle, the state’s Court of Appeals sided with the SCSPA. This would allow permits to be issued to the SCSPA for construction of a new facility at the “Union Pier,” a 60 acre dual-

use facility currently serving both cruise (on the south side) and cargo trades (on the north side).

Charleston’s Union Pier, now seeing infrequent breakbulk shipments, had earlier been a ro-ro terminal, and a terminal for rice exports before that. The SCSPA has been seeking to reduce that footprint, creating a 20 acre cruise terminal adjacent to a park. In late January local news reports said that opponents of the cruise terminal were now asking the state’s Supreme Court to overturn the late 2017 Appeals Court decision that would allow the permits to be issued (which upheld an Administrative ruling going back to 2014). It was not clear, as of early February, whether the South Carolina Supreme Court would hear the case.

More Change Coming?

Going forward, the peculiarities of the cruise business may drive different configurations for ports. Pointing to the movement of containership entities into the terminal business, the Hofstra geography professors suggest that ongoing trends “... lead to further market segmentation between large ports called by mega ships and smaller ports called by smaller ships offering a specialized cruise experience.” They add that: “This is likely to incite the additional involvement of the cruise industry in terminal operations, a trend that has already taken place with the setting of private port/resort areas. The next step will involve the development of new cruise terminals co-located with service amenities such hotels, attractions, condominiums and shopping malls.” No doubt the cruise lines will own or have an interest in those amenities, should they come to reality.

<p>The Author</p> 	<p>Barry Parker 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</p>
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New Ships,

The MSC Seaside, first of the MSC Seaside class to sail from PortMiami.

Credit: MSC

The relentless increases in luxury ocean and river travel that has propelled the cruise industry in 2017 to new passenger records is a clear indication that 2018 and the next five years will see a new era in global travel.

By Rick Eyerdam

Passenger Records Pace Global Growth

Even as the Cruise Lines International Association (CLIA) counted up the record number of global cruise passengers in 2017, CLIA member cruise lines are scheduled to debut 27 new ocean, river and specialty expedition ships this coming year. Among the most interesting of those ships are the two new Ponant ships, Le Laperouse and Le Champlain, both being built by Vard Tulcae in Romania. Le Laperouse will be the first of Ponant's four Explorer-class expedition ships. It is named for French explorer Jean-Francois de La Perouse.

The ships are part of Ponant's investment in small expedi-

tion vessels that can sail the Polar Regions as well as the rest of the world. Accommodating only 184 passengers, all four ships will feature a reinforced hull for polar exploration, stabilizers, five passenger decks, a fleet of Zodiacs for excursions and transfers, an infinity pool, an aft marina for sun worshiping and water sports, and an 188-seat theater. Each ship will have 88 balcony staterooms and four suites with bay windows and expansive private terraces, according to Ponant.

"It is without question that the cruise industry continues on a growth trajectory, gaining in consumer interest and creating a positive impact on the global economy," said Cindy D'Aoust, president and CEO, CLIA. CLIA reported cruise industry expenditures generated \$126 billion in total output worldwide, supporting more than one million full-time equivalent employees who earned \$41 billion in income, an increase from previous years.

The global good news is impressive, but North American markets continue to pace the markets, as well. PortMiami and Port Everglades have all but completed preparations to accommodate the cruise lines giants that are coming to call and Port Canaveral has embarked upon an ambitious master planning process.

According to cruise consultants Bermello Ajamil & Partners, industry growth — based on new ships now under construction — will create a need for 10 additional terminals in Florida, and Port Canaveral is the only port with a real opportunity to service that demand. It possesses the necessary deep water channel, convenient access to drive-in and fly-in markets and, most importantly, is the only established cruise port in Florida with space for significant expansion.

Although Port Canaveral has emerged as the second busiest cruise port in the world, and is considered a leading homeport for the world's largest cruise lines, there is plenty happening elsewhere on the U.S. East Coast, as well.

Port Everglades

Broward County's Port Everglades has negotiated a Memorandum of Understanding (MOU) that provides the framework for a new long-term business agreement with Royal Caribbean Cruises, Ltd. (RCL) that will include complete, customized renovations of the Port's Cruise Terminal 25 targeted for completion by October 31, 2018.

"Our cruise line customers are becoming more sophisticated in the way they think about the guest experience, as we saw when Royal Caribbean partnered in the construction of Cruise Terminal 18 for their Oasis class of ships," said Port Everglades Chief Executive Steven Cernak. "We value the company's partnership and confidence to bring the newest ships from Royal Caribbean and Celebrity Cruises to Port Everglades."

Separately, RCL announced that its newest Celebrity Cruises ship, Celebrity Edge, will homeport in Port Everglades beginning in the fall of 2018. Royal Caribbean's Harmony of



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the Seas, the newest Oasis class ship, began sailing from Port Everglades in November 2016.

Port Everglades recently extended its agreement until 2030 that includes preferential use of five terminals, including recently renovated terminals and berths to better serve passengers sailing on seven of Carnival Corporation global cruise line brands. Larger cruise ships as long as 1,100 feet can now dock at Broward County’s Port Everglades Cruise Terminal 4 without extending into the Intracoastal Waterway.

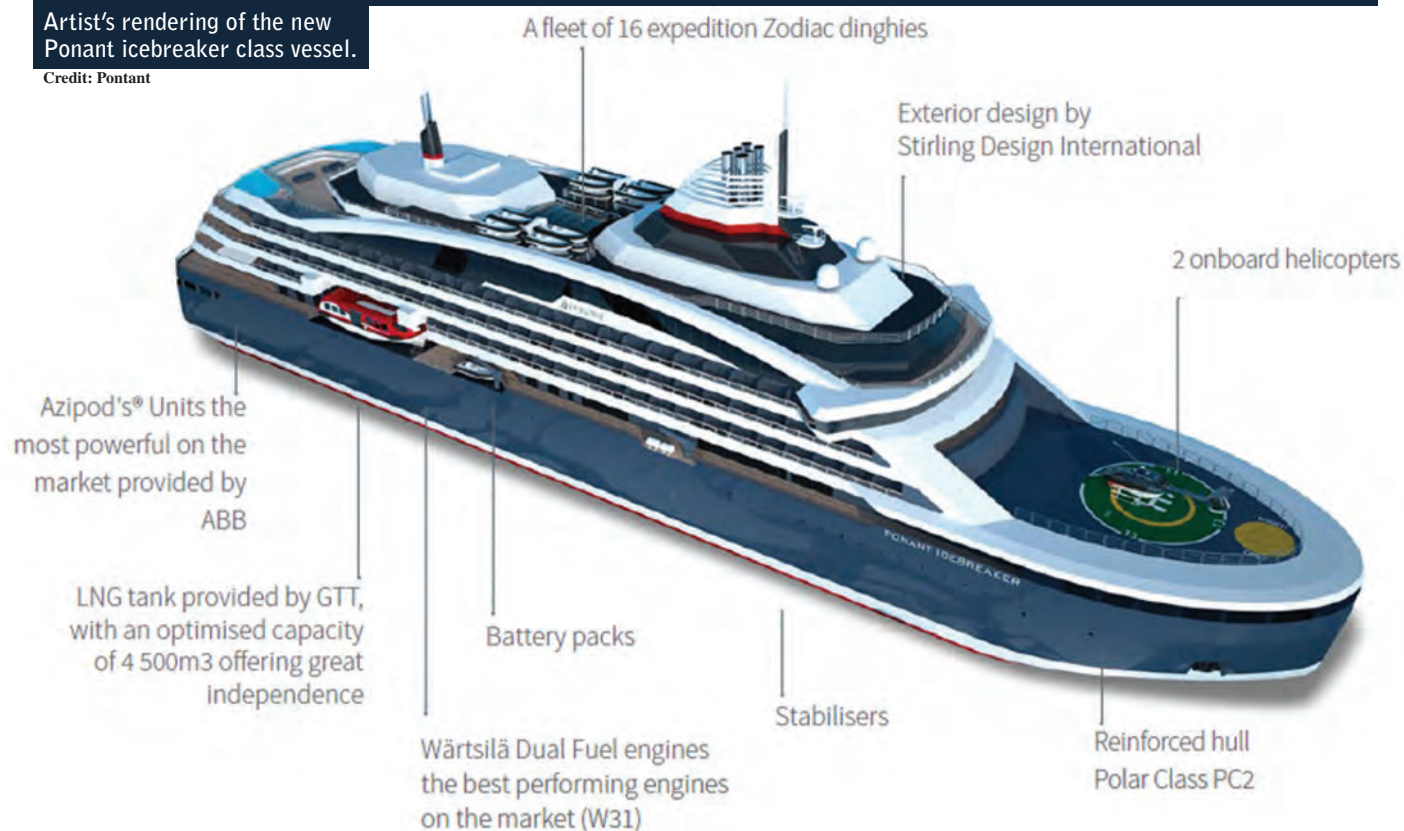
Carnival Cruise Line and six other of Carnival Corporation’s 10 global cruise line brands -- Holland America Line, Costa

Cruises, Cunard Line, P&O Cruises UK, Princess Cruises and Seabourn currently carry nearly a million and a half passengers to and from Port Everglades each year. The seven Carnival Corporation brands and 28 different ships account for a combined average of more than 300 calls at Port Everglades each year. Port Everglades is consistently ranked as one of the three busiest cruise ports in the world with more than 3.8 million passengers in fiscal year 2016 (October 1, 2015 through September 30, 2016).

The \$18-million Slip 2 construction project, adjacent to the recently renovated Cruise Terminal 4, lengthened the slip by 225

Artist’s rendering of the new Ponant icebreaker class vessel.

Credit: Pontant



feet from the original 900 feet. The total 1,125-foot slip length meets the needs of most of today's modern cruise ships such as Holland America Line's Pinnacle-class ships, which were introduced at Port Everglades during the 2017 cruise season with the U.S. debut of the MS Koningsdam or Princess Cruises' Royal-class ships, which also homeport at Port Everglades.

Ten cruise lines, one ferry service and more than 40 cruise ships sail from Port Everglades seaport including: Balearia's Bahamas Express (ferry), Carnival Cruise Line, Celebrity Cruises, Costa Cruises, Crystal Cruises, Cunard Line, Holland America Line, Pearl Seas Cruises, Princess Cruises, Royal Caribbean International, and Silversea Cruises.

PortMiami

PortMiami surpassed the five million passenger mark in fiscal year 2016-2017 that ended Sept. 30, welcoming more than 5.3 million cruise travelers to Miami, the highest number of cruise guests anywhere.

"PortMiami is committed to its cruise partners," said PortMiami Director and CEO Juan M. Kuryla. "The Port team values each and every cruise line that has chosen Miami as a homeport. We are focused on delivering quality service, seamless operations, and all around excellence. We continue to invest in cruise terminal infrastructure for the next generation of cruise ships."

Earlier this year Royal Caribbean International and Miami-Dade County broke ground on the cruise line's brand new Cruise Terminal A, to accommodate the new era of cruising is scheduled to open in late 2018. The more than \$200 million public-private partnership with Miami-Dade County includes the development, construction, and operation of the cruise terminal. Terminal A, Royal Caribbean designed, will house an angular glass center and a parking garage with about 1,000 parking spaces at the northeastern side of the port. The 170,000-square-foot terminal is nicknamed the 'Crown of Miami' because of its shape. The design evokes the points of a crown when viewed from the water; and the 'M' of Miami when viewed from the east or west. At night, the terminal's facade will be lit providing a dynamic addition to the PortMiami landscape.

The expansion continues for 2018 with the arrival of Carnival Cruise Lines' Carnival Horizon and Carnival Magic; Norwegian Cruise Line's Norwegian Bliss; and Royal Caribbean International's Allure of the Seas, Mariner of the Seas, and the Symphony of the Seas.

And PortMiami has spent about \$30 million rejuvenating its Terminal F to accommodate MSC's Seaside this year and MSC Meraviglia which will also be joining the Miami fleet in 2019.

Beyond U.S. Borders: real potential and continued uncertainty

A moderate race has begun to dominate Asian cruising among American cruise lines while Cuba cruise traffic is also growing, but not as quickly as first expected. Cuba does not

have the infrastructure to handle the tens of thousands of cruise tourists a fleet of American cruise ships might deliver. And President Donald Trump's idiosyncrasies have installed caution in American cruise companies where Cuba is concerned.

Under Trump's current rules business contracts and travel arrangements to Cuba already in place will be allowed to go ahead and will not be subject to restrictions. The list of entities that Americans cannot do business with includes a special development zone at Cuba's Mariel port, which Cuba hopes to develop into a major Caribbean industrial and shipping hub with tax and customs breaks. The National Foreign Trade Council, a business lobby group in Washington, called the Mariel restriction "counterproductive" because it would hurt a Cuban government initiative that could potentially benefit Cuban workers.

The Cuban hotels listed as restricted included those run by military-linked chains Gaviota and Habaguanex. Senator Marco Rubio (R-FL), a Cuban-American, said the list failed to go far enough because it omitted companies like Gran Caribe Hotel Group and Cubanacan that have ties to the Cuban government.

While U.S. travelers will still be able to make authorized trips to Cuba with a U.S.-based organization and accompanied by a U.S. representative of the group, it will be harder for them to travel individually, according to the new regulations. With some trepidation created by Trump and calls by Rubio and colleagues to halt Cuba visits, Oceania Cruises, Azamara Club Cruises, Regent Seven Seas Cruises, Norwegian Cruise Line, Carnival and Holland America have planned cruises to the Caribbean and Cuba from Miami and Tampa.

Democratic Senator Patrick Leahy said the regulations were unfair to Cuba, coming as Trump was being "feted in Beijing" by a Communist government "in a country to which Americans can travel freely."

The Cruise Line Industry Association, however, is huge on Asia and especially China. Managing Director of CLIA Asia, Joel Katz, said "With annual source market growth of more than 40 percent, Asia is emerging as one of the most significant cruise destinations and cruise source markets in the world. Cruising is expected to capture a much larger percentage of the Asian population in the near future, which could catapult Asia's share of the global market."

In hopes the trend continues, Carnival has made a deal with Fincantieri and the Chinese firm CSSC to deliver the first of the two ships – designed to appeal to Chinese travelers – for delivery in 2023. "This represents another important milestone in building a sustainable and prosperous cruise industry, and demonstrates our commitment to contributing to China [becoming] a leading cruise market as part of its five-year economic development plan," said Carnival CEO Arnold Donald, in a statement.

By 2020, China's cruise market is forecast to grow to 4.5 million passengers, up from 1 million in 2015, according to data from the Chinese Ministry of Transport. And by 2030,

“Our cruise line customers are becoming more sophisticated in the way they think about the guest experience, as we saw when Royal Caribbean partnered in the construction of Cruise Terminal 18 for their Oasis class of ships. We value the company’s partnership and confidence to bring the newest ships from Royal Caribbean and Celebrity Cruises to Port Everglades.”

– Steven Cernak, Chief Executive of Port Everglades



China is expected to become the world’s second largest cruise market, after the United States.

To launch operations of the first multi-ship cruise brand in China, the joint venture with CSSC initially plans to acquire ships from Carnival’s existing fleet and then add the new ships later. However, with a glut of capacity moving into China, Princess Cruises will not have a winter program in the Chinese market for the 2018-2019 cruise season. The company’s 3,560-passenger Majestic Princess was to be deployed to Shanghai for Asia cruises and was the newest ship and the first to be built and designed for Chinese travelers.

With the Majestic Princess heading instead to Australia for the 2018-2019 season, the Sapphire Princess will now also move, deploying for the winter out of Singapore and sailing to Southeast Asia, the company said.

In terms of additional capacity, the Norwegian Joy enters the market this year, on a year-round basis. Genting’s Dream Cruises is poised to send the World Dream to Nansha and 2019 newbuilds from Norwegian and Royal Caribbean are also set for China-based operations.

Joining the list of ships earmarked for China this year is Norwegian Cruise Line’s newest ship, Norwegian Joy, ordered as Norwegian Bliss and renamed. The 3,850-passenger ship, with a remarkable electric go cart track on its top deck, Norwegian Joy is the first-ever contemporary cruise ship custom-built for China. Norwegian Joy will provide a Mandarin-speaking crew, authentic Chinese cuisine and culturally-inspired onboard experiences offering guests a fully immersive Chinese cruise vacation, according to Norwegian.

In North America and beyond, cruising continues to grow and prosper, where other sectors might languish. All indicators point to more of the same in the New Year, and beyond.

The Author

Rick Eyerdam



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.



Rendering of Celebrity Edge, with its first-ever: Magic Carpet deck, a cantilevered venue which slides up the side of the ship and serves, alternately as a restaurant, pool deck extension, and boarding dock.

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Maritime Logistics Professional

Interview

Tom Strang

Senior Vice President Maritime Affairs,
Carnival Corporation and plc.

(*) all images courtesy Carnival Corporation

Tom Strang is Senior Vice President Maritime Affairs for Carnival Corporation and plc, responsible for developing a group wide strategy for the supply of LNG for the next generation of cruise ships under order. He also provides representation for the Carnival group at various maritime authorities in Europe and other regions relating to marine and technical regulatory activities. Tom began his career as a Naval Architect with Vickers Shipbuilding and Engineering Ltd and then moved to Lloyds Register where he rose to the level of senior passenger ship specialist before

joining Carnival's Corporate Shipbuilding team in 2000. Since then, Tom has been involved in various areas of the business including Maritime Development and Compliance, HESS and Corporate Maritime Policy. Prior to taking up his current role, Tom was SVP Marine Operations at Costa with responsibility for marine and technical operations, manning and newbuilding for the Costa fleet. Tom is currently chair of the ICS Passenger Ship Panel, the UK Chamber of Shipping Safety & Environment Committee, the CLIA EU Environmental, Safety and Security Sub-Committee and the Royal Institution of Naval





Architects Environmental Committee.

There is no shortage of big news announcements coming out of Carnival Corporation. From LNG-fueled ships, to a supply agreement with Shell and all the way to an aggressive shipbuilding program, Carnival finds itself out in front of the pack in many respects. Earlier this month, we caught up with Mr. Strang and asked him to bring some perspective to his firm's many business decisions.

Some stakeholders expect LNG use to become mainstream in cruise ships in the future due to stricter rules on harmful emissions. You are an earlier adopter. What went into that decision?

LNG is an economic, clean and safe marine fuel with increasing global availability that also complies with existing and scheduled emission requirements. By building new ships that will be powered by LNG both while in port and at sea, we believe we are setting ourselves up to take advantage of these benefits and future-proofing our fleet. Clearly the environmental performance, particularly with respect to local air



We have been firmly committed since our inception 44 years ago to operating responsibly, as our company's very existence is tied to protecting the oceans, seas and ports in which we operate.



INTERVIEW

emissions, was a major factor in our decision to use LNG as a fuel. The fact that LNG was becoming more widely available and is projected to have a significant discount against more conventional low emission fuels post 2020 is an added bonus.

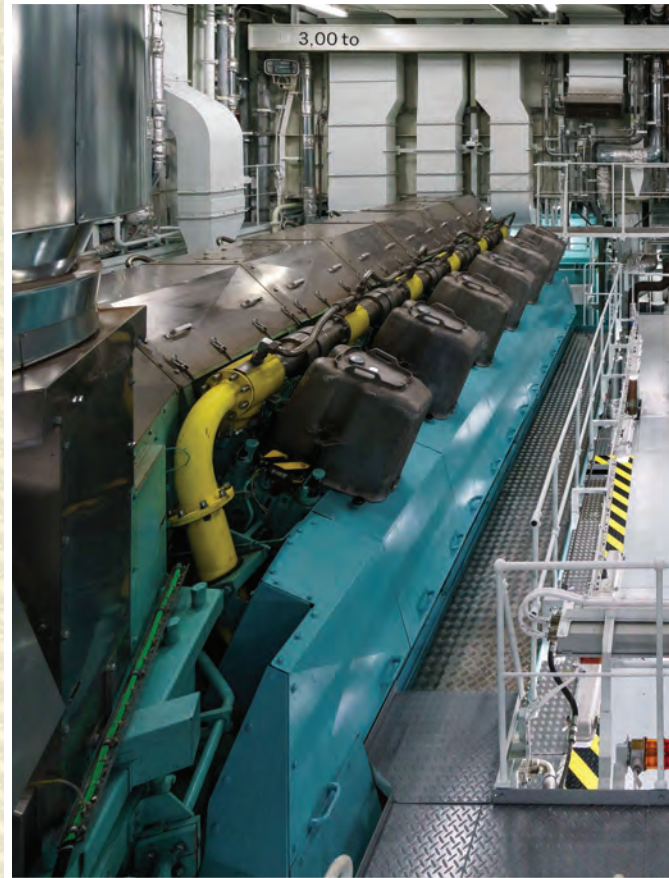
Portugal's Galp Energy is expanding its marine fuel offering by supplying low-emission liquefied natural gas for ships. Tell us about this development.

We have worked with GALP to utilize the same system for fueling the AIDAprima as we have been using with Shell since 2016 in Hamburg, Southampton, Le Havre, Zeebrugge and Rotterdam on the same ship. In addition, we are carrying out fuel deliveries in Barcelona, Civitavecchia and Marseilles on the AIDAprima. AIDASol from our company's AIDA Cruises brand was the first cruise ship in the world to be powered by 7.5 megawatts of low-emission power by means of liquefied natural gas (LNG) while in port. The journey into innovation continued in May 2016, as the AIDASol and AIDAprima both harbored in Hamburg were simultaneously powered by LNG; the Sol from the barge and perhaps more interestingly the Prima directly from an LNG truck on the quay. By the end of this

year, Carnival Corporation will be the first cruise company in the world to use LNG to power cruise ships both when they are in port and in the open seas.

Carnival Corporation and Carnival Cruise Line signed an agreement with Shell to fuel the first fully LNG-powered cruise ships in North America. The two Carnival Cruise Line ships will be fueled through Shell's LNG Bunker Barge (LBB). When will the ships be ready and is the timing of the LNG bunker barge being timed to coincide?

The first Carnival Cruise Line ship will enter service late 2020 and the LBB will be available on the ships arrival. Pioneering a new era in the use of low-carbon fuels, these new ships (with the next generation "green cruising" design) will be the first in the cruise industry that can use LNG to generate 100 percent of their power both in port and on the open sea – an innovation that will reduce exhaust emissions to help protect the environment and support Carnival Corporation's aggressive sustainability goals. These seven ships, with delivery dates between 2018 and 2022, will be built by German and Finnish shipbuilders Meyer Werft and Meyer Turku.



The Bunker Barge is a first of its kind in the U.S. and will allow the ships to refuel with LNG at ports along the U.S. East Coast. This kind of flexibility will allow you to move vessels to suit marketing and demand trends, yes?

Correct. The use of a mobile bunker vessel allows more flexibility in delivery location. As the first of its kind to be based in the United States, the ocean-going LNG bunker barge will supply LNG to marine customers along the southern East Coast of the U.S. and support growing cruise line demand for LNG marine fuel. With its pioneering design and delivery capabilities, the LNG bunker barge will be highly efficient and maneuverable and feature an innovative transfer system enabling it to load LNG from big or small terminals and bunker a variety of customers.

Carnival Corporation has agreements in place to build seven LNG-powered cruise ships across four of its 10 global cruise brands. Is this plan [LNG] Carnival's end game on environmental compliance for the 2020 deadline and beyond?

The use of LNG meets and exceeds all current and proposed emissions regulations through 2025, and is an important main-

stay of our commitment to sustainable cruise operations going forward. For existing ships and where LNG is not available we have a program to meet the new emissions rules using EGCS which clean the exhaust from our engines, or to use cleaner fuels where this is not possible. Because of the new regulations recently adopted by the International Maritime Organization, there is a greater push in the industry today to build ships that can utilize cleaner burning fuel, such as LNG-powered ships. The European Union is investing heavily in infrastructure that allows for the use of cleaner fuels, and so in the industry today there is a greater incentive than before to develop LNG-powered ships. There is an increasing regulatory demand for clean emissions, which requires cleaner fuels, and LNG is very much in that bracket. That, together with the new safety regulations for ships using gases as fuels, and the developing infrastructure for LNG, was a tipping point, and we decided it was the right time to begin the transition to LNG by building the world's first LNG-powered cruise ships. Also, because we are currently designing a new series of vessels, it is a good time to make a choice to transition to LNG-powered ships – in effect providing a degree of future proofing.



Christine Duffy, Carnival Cruise Line President, recently said, "Carnival Cruise Line is strongly committed to leading the way in the implementation of technology innovations to help protect the environment and support our aggressive sustainability goals." LNG is just one part of that journey. Tell us about other initiatives.

The effort is one of many that our company has in place to meet our focus on sustainability and the environment. We have been firmly committed since our inception 44 years ago to operating responsibly, as our company's very existence is tied to protecting the oceans, seas and ports in which we operate. With more than 120,000 employees, most of whom live and work at sea, we remain more committed than ever to responsible and sustainable practices to protect and maintain healthy oceans, seas and ports of call. We have established and published our own aggressive 2020 Sustainability Goals, including the reduction of the intensity of our CO₂e (equivalent carbon dioxide) emissions from our operations by 25% by 2020 relative to our 2005 baseline. As a driver of our leadership position, we have invested heavily in new technology, and LNG is just one example of that. We also see a return on the investment we have made in our

exhaust gas cleaning systems. We clearly see that the technology we have invested in delivers better environmental performance than many of the alternatives when it comes to the conventional fuels.

Cruise shipping could well be the driver for LNG infrastructure that global shipping has been hoping for. Would you agree?

Yes. We are proud to be on the forefront of advancing LNG as a fuel source for the cruise industry. One of the keys to establishing LNG as a standard for powering cruise ships is building out an extensive, safe and reliable infrastructure across the globe for this clean burning fossil fuel. We are looking forward to working closely with Shell as they help to bring LNG to North America in what we hope will be the first step in building a strong foundation for the future of LNG fuel supply for cruise ships in the region. We know that the transition to LNG is no simple task, and the demands associated with its implementation make it something of a milestone both for Carnival Corporation and the wider cruise industry. The ship systems are groundbreaking, and while ferries have used LNG for some time, these will be prototype designs for us.

Our hope is that by moving forward with LNG and helping to establish it as a trusted power source, and develop the infrastructure needed to use it, we will make it more readily available and more of a viable option - not only for our fleet but the industry as a whole.

Carnival Corporation has begun construction on the world's first fully LNG-powered cruise ship. What will be the maximum endurance (range / time at sea) for such a vessel?

For a week's itinerary that might use 1,000 MT of HFO you would only use 800 MT of LNG. One key element in our process was deciding upon the total volume of LNG needed to be stored on board. LNG, when liquefied, has a density that is about half that of conventional fuels. Therefore, it does require a larger tank volume than conventional fuel. Consequently, when designing the vessel we needed to analyze the likely itineraries to ensure the optimum arrangements on board. For our first vessels, we will be designing the vessel to be able to operate for 14 days between refueling with a combined volume of approximately 3,600 cubic meters of LNG stored on board.



Will these vessels be able to burn low sulphur diesel as well, or are they configured only for LNG?

They can use MGO as well. On our LNG-fuelled ships, the LNG will be used to power dual fuel, medium speed, four-stroke engines to run the ship in port and at sea. We have chosen dual fuel engines to ensure compliance with safe return to port requirements and so that in all cases we have a backup supply of traditional fuel. These ships will be the first cruise ships that use LNG as fuel during all aspects of operation. They are dual fuel so as to provide a back-up in case LNG is not available and to meet the additional redundancy requirements that exist of cruise ships. The ship systems are ground breaking and while ferries have used LNG for some time these will be prototype designs for us. One important factor is choosing a shipyard builder that has experience and that we are confident can deliver these sophisticated ships. This is one of the reasons we have chosen Meyer Weft – who have the experience to design and build these groundbreaking new ships.

What is the premium (cost differential) on building such LNG-powered vessels? In the OSV markets, the engines alone come at a 20% up cost. Operators there hope to recoup those costs by taking advantage of lower cost LNG. What's Carnival's business plan in that regard?

The outfit for the full LNG system is a small part of the total cost of a large cruise ship. We expect LNG to be competitive with other compliant fuels and there to be other advantages in areas such as maintenance, cleanliness, noise, etc. There was very little economic impact for the initial capital investment compared to a conventional ship with all the required exhaust gas cleaning systems (EGCS, etc). LNG as fuel is currently more expensive than HFO but more competitive than MGO. We have invested a lot of money, technology and intellectual property and effort in making our new ships much more efficient since fuel comes directly off the bottom line.

For other early adopters of LNG, the price of the LNG was not a variable in their decision to go green. But, going green must also result in making 'green' in order for it to work. Was cost a variable in your decision to go LNG?

One of the reasons for going to LNG was that the availability of LNG as a marine fuel was improving and that cost projections were supportive. Even with the current prices of conventional fuels, we expect LNG will remain competitive, so transitioning to LNG provides a financial incentive as well as potential long-term savings.

What brand of engines will you use to power these LNG vessels? Why did you choose that OEM? What advantages did they bring?

We chose Caterpillar MaK together with the building yard. They offered the most competitive package and we have experience with their engines on the AIDAprima and AIDAperla.

Together, the corporation's cruise lines operate 103 ships with 231,000 lower berths visiting over 700 ports around the world, with 17 new ships scheduled to be delivered between 2018 and 2022. How many of the 17 new ships will feature LNG or LNG ready engine arrangements?

By 2022, Carnival Corporation will take delivery of seven new cruise ships that will be powered by LNG in port and at sea for our Carnival Cruise Line, P&O Cruises UK, AIDA Cruises, Costa Cruises brands. We consider this "future proofing" our new ships, building today for the challenges of tomorrow – be they regulatory or economic in nature. This also offers us a significant hedge against fluctuation in fuel costs over time, one of the biggest variables in the overall economic model.

Are there any plans to send any of the new LNG ships to Port Canaveral? What are the bunkering infrastructure plans there, if so?

We have not announced specific deployment plans for our North America LNG ships yet, but the ocean-going LBB, which is designed to support growing cruise line demand for LNG as a marine fuel, will be the first of its kind in the U.S. and will allow our ships to refuel with LNG at ports along the southern U.S. East Coast.

Port Canaveral bills itself as the world's number two cruise port, and Carnival brands call there frequently. What's the best part about partnering with that port, how has it gone for you thus far and would you contemplate increasing port calls there in the near future?

Carnival Cruise Line has been sailing from Port Canaveral since 1990 — the longest of any cruise line. Carnival Cruise Line's three homeported ships will sail approximately 600,000 guests from Port Canaveral this year. In 2017/2018, the range of Carnival choices includes 18 Caribbean and Bahamian ports of call on cruise durations from three to eight days. Of Port Canaveral, Carnival Cruise Line president Christine Duffy has said: "We continue to invest in Port Canaveral" by deploying one of the cruise line's newest and largest ships, "which speaks volumes to the incredible growth that region represents and the popularity of Carnival Cruise Line from the Space Coast."



DP World employs a sophisticated Vidsys technology platform to eliminate stovepipes and integrate myriad security solutions.

By Joseph Keefe

DP World London Gateway provides deep-sea shipping access to one of the largest consumer markets in the UK. Naturally, the task of keeping all of that safe from outside threats, while also balancing that important task with the need to ensure an efficient inter-modal supply chain is no easy task. That's because this facility routinely intercepts stolen vehicles, narcotics, and illegal immigrants, while working closely with local and London MET police, the UK highways agency and the Ministry of Defense.

Like any port terminal, DP World London Gateway employs dozens of methods and equipment packages to ensure safety. All of that produces an avalanche of data and information too

broad even for the best of security watch teams to take in. From the beginning, the port sought out an integrated security platform to provide better situational awareness and data analytics capabilities. Eventually, they turned to Vidsys.

HOW IT WORKS

Vidsys provides a physical security information management (CSIM) software platform solution. CSIM software is a force multiplier especially for organizations with a large physical footprint because the software geospatially aligns information and assets into a single user interface. CSIM has five core areas of functionality: it collects, analyzes,

verifies, resolves and tracks information. Eliminating stove-piped data streams, its rules engine and work flow tools give management the ability to pre-determine what data should be correlated and what should be filtered out. CSIM software uses filtering rules based on time, location, duration, frequency and type.

The term “force multiplier” is much used but often misunderstood concept. For Vidsys customers, it means that an organization might be able to reduce headcount in their security teams, but that isn’t necessarily what it is all about. Using personnel more effectively and empowering them with the right information and tools, a facility can increase its security coverage by combining technology and people.

Real port security doesn’t just involve what’s inside the fence. That’s because port authorities and terminals that were previously focused inside the perimeter can now collaborate with outside law enforcement and first responders. That interoperability enhances Maritime Domain Awareness. So, when a threat occurs it can be resolved accurately, efficiently and consistently.

CSIM provides the ability to manage situations in real-time. First responders, supervisors, IT staff and senior executives with authorized credentials can access CSIM from anywhere via mobile device (tablet, cell phone) for enhanced situational awareness. Mobility is more important than ever. A true web-based and open architecture platform, Vidsys is fully enabled for mobile users. Decision makers from a single organization or multiple entities can collaborate real-time and to share time-sensitive, actionable information both with executives and incident responders via mobile devices.

Colin Hitchcock, Harbor Master & Head of ISPS security at DP World’s London Gateway explained, “Through the Vidsys platform, we are able to extend our ability to monitor the port, our assets, and increase the efficiency and effectiveness of our security program.” The 2 two-square mile area port is surrounded by an 11 kilometer fence line, creating a massive infrastructure to be monitored and managed.

Through highly automated technology, Vidsys helps the port run all data through a 24/7 Security Control Room, with a separate control room reserved for elevated security alerts. A particular feature of the CSIM platform that the DP World London Gateway Harbor Master uses frequently includes Vidsys’ innovative, smart reporting capability.

For DP World, the Vidsys system incorporates a minimum of 28 standard operating procedures (SOP) that defines security in terms of flow diagrams, outlining who needs to be called, and what happens next in the event of an emergency. The Vidsys security program incorporates local servers on site, which Hitchcock says – in a nod to the cyber threat – are not connected to anything outside the terminal. He adds, “We don’t even allow USB sticks.”

PILOT PROJECT: FUTURE PROOFED, AND BUSINESS FRIENDLY

While Vidsys has many clients spread out over a broad business mix, the DP World’s installation at the London Gateway was a pilot project. DP World in this case had the advantage of starting its security measures with ‘a clean sheet of paper.’ The terminal, built from scratch on a cleared piece of reclaimed land, allowed DP World and Vidsys to collaborate on a custom-built package, and not one which addressed existing stovepiped assets. Not every terminal can do that, but from this project, DP World now has a blueprint for its next security upgrade elsewhere.

As a firm that [globally] handled a record number of TEU’s in 2017, security will always be at the forefront. But, even the safest terminal is of no value if it isn’t making money. The need to balance the security requirement with the need to ensure that commerce also flows smoothly is no easy task. For that reason, DP World keeps the all-important Terminal Operating System (TOS) and the Vidsys platform separate from one another. That said; when a security concern requires a container to be moved from one area to another for inspection or quarantine, that can be done without impeding other commerce. Bottom line: dwell time and truck turnarounds are critical metrics at any box terminal. As the first DP World Terminal to use Vidsys, Hitchcock says much went into that planning. “It is future-proofed,” he says flatly.

DATA THEY NEED – AND NOTHING MORE

In the port security industry, the “so what?” factor is an important catch phrase. In other words, security regimes bombard security personnel with millions of bytes from myriad sources. The ‘noise’ sometimes overwhelms the security mission. This is overcome by algorithms that sift through all the data to transmit only what is important to the watch team.

Vidsys provides what they describe as “Converged Security and Information Management.” Hitchcock explained the concept by saying, “We have a control room, fences, HD cameras, movement sensors, thermal imaging cameras, access control systems, guards out on patrol and many other security measures in place. Roving patrols carry WEB cams and we have drones as well. All of that has to come back to one area. What I didn’t want was a bank of thousands of small cameras [or readouts] which just becomes a blur in front of the operators in the control. Absolutely – the information is filtered.”

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“

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– Colin Hitchcock, Head of ISPS Security at DP World London Gateway

as many as six cameras might lock onto that ‘problem,’ follow it as it moves from sector to sector, and captures it all on film.

Hitchcock told *MLPro*, “We have a ‘Silver Command’ where, if we had a major disaster, all sensors and images are channeled into a board room and central command.” Beyond that, the system is designed to be able to communicate locally to first responders and other security partners, and globally to all key DP World personnel – in real time.

THE REAL WORLD

Not every terminal can leverage DP World London Gateway’s advantage of building a security system from the ground up. Even DP World has many legacy terminals that already have security regimes in place. In the United States, and in the 17 years that followed the attacks of 9/11, authorities ag-

gressively funded security infrastructure primarily via federal port security grants. The weight of these enhancements left security personnel to decipher multiple streams of information. But, simply collecting and displaying huge quantities of data is no longer enough.

The fences, cameras, radar, sonar, AIS, fences, radiation detection monitors and a hundred other pieces of hardware and software that existing terminals needed to achieve perimeter security was put in place. In most cases, all of this was procured inward to the organization and in a stovepiped fashion. And when this happens, a diversion in one area of the facility can often be used to mask the real threat elsewhere. For the facility that added security layers over time, Vidsys brings it all together.

With Vidsys, organizations can plan technology investments over time and bring them on line periodically while continuing to realize the benefits of current infrastructure. Within this approach, seamless integration of existing technology is possible, as well as a path to integrate emerging technologies.

Vidsys takes evolving data, instantly places it in context and constantly monitors for what happens next. Behavioral trends, potential threats, and anomaly detection, and alerts are all accomplished in real-time. A ‘rules-based’ situation management works by cutting through the gray noise to get to the important data; or actionable information, without losing sight of the big picture. All personnel don’t need the same view to achieve situational awareness. Vidsys allows watchstanders to focus on anomalies, providing data that is important, to the right person, at the right time.

BOTTOM LINE

For DP World, the big question in terms of security was to ask, “How do we get value for money?” Colin Hitchcock explained, “The health, safety and security aspects of our business don’t make money. We needed a complete ‘site management system’ that can be controlled in one room by the on duty security team.” With Vidsys, that’s exactly what they got.

Initially training, according to Hitchcock, involves three to four weeks, but regular drills keep local personnel sharp. That’s important, because if so-called situational awareness is the key to staying safe, then the security challenges facing global ports and terminals have never been more daunting.

Retired U.S. Coast Guard Commandant ADM James Loy, in the unsettled wake of 9/11, is credited with coining the phrase ‘Maritime Domain Awareness.’ And, he said, “If you’ve seen one port, you’ve seen one port.” That being true, the Vidsys integrated security platform is just the ticket for ensuring a uniform security package – no matter what the local conditions, landscape or threats entail.

TOP CRUISE PORTS

The USA is still King but it's a big, beautiful world out there – with plenty of destinations to explore.

Well into the New Year, Miami, Florida continues as the world's number one port for passenger throughput, but its Florida cousin, Port Canaveral, is knocking at the door. The two ports could not be more different, wooing a different demographic for different attractions. That's the beauty of the cruise industry – no two business plans are alike. Likewise, it has been said that, “if you’ve seen one port, you’ve seen one port.” That’s the cruise industry in a nutshell.

Florida is the heart of cruising today. As a regional destination, there is no place else on earth that even comes close in terms of total passengers. That’s not to say there aren’t other places just as worthwhile to visit. There are. In this edition, we highlight the numbers for the U.S.-based cruise industry and then, we’ll visit ten worthy cruise destinations – some of them American – that are significant ports in their own, unique ways. Join us as we head around the world to see the best of the rest.

Table 1 – U.S. Embarkations of the International Cruise Industry, 2011 – 2016

PORT						PCT change from Previous Period				
	2011	2012	2013	2014	2016	2011	2012	2013	2014	2016
Florida	5,920,000	6,074,000	6,074,000	6,150,000	7,079,000	2.4	2.6	1.3	12.0	2.7
Miami	2,003,000	1,887,000	2,015,000	2,549,000	2,551,000	-7.5	-5.8	6.8	26.5	0.1
P. Everglades	1,795,000	1,797,000	1,845,000	1,940,000	1,840,000	2.1	0.1	2.7	5.1	-5.2
P. Canaveral	1,483,000	1,708,000	1,701,000	1,769,000	2,088,000	15.1	15.2	-0.4	4.0	18.0
Tampa	449,000	487,000	410,000	451,000	405,000	13.1	8.5	-15.8	10.0	-10.2
Jacksonville	190,000	195,000	179,000	182,000	195,000	9.2	2.6	-8.2	1.7	7.1
California	902,000	837,000	659,000	984,000	1,058,000	-15.2	-7.2	-21.3	49.3	7.5
Los Angeles	304,000	213,000	214,000	291,000	300,000	-16.9	-29.9	0.5	36.0	3.1
Long Beach	408,000	457,000	298,000	549,000	591,000	-1.4	12.0	-34.8	84.2	7.7
San Diego	144,000	105,000	74,000	49,000	55,000	-40.7	-27.1	-29.5	-33.8	12.2
San Francisco	46,000	62,000	73,000	95,000	112,000	12.2	34.8	17.7	30.1	17.9
New York	611,000	586,000	600,000	576,000	499,000	10.5	-4.1	2.4	-4.0	-13.4
Other U.S.	2,401,000	2,598,000	2,555,000	2,613,000	3,022,000	4.7	8.2	-1.7	2.3	15.7
Galveston	459,000	604,000	605,000	642,000	869,000	5.5	31.6	0.2	6.1	35.4
New Orleans	369,000	488,000	489,000	502,000	534,000	41.9	32.2	0.2	2.7	6.4
Alaska	129,000	137,000	125,000	141,000	157,000	0.8	6.2	-8.8	12.8	11.3
Seattle	443,000	464,000	430,000	408,000	484,000	-4.9	4.7	-7.3	-5.1	18.6
Boston	85,000	123,000	143,000	106,000	156,000	1.2	44.7	16.3	-25.9	47.2
Baltimore	252,000	241,000	212,000	199,000	211,000	21.2	-4.4	-12.0	-6.1	6.0
Honolulu	119,000	122,000	117,000	119,000	114,000	-3.3	2.5	-4.1	1.7	-4.2
Other U.S.	545,000	419,000	434,000	496,000	497,000	-7.5	-23.1	3.6	14.3	0.2
USA Totals	9,834,000	10,095,000	9,964,000	11,064,000	11,658,000	1.4	2.7	-1.3	11.0	5.4

Source: Port Authorities and Business Research and Economic Advisors (AAPA / July 2017)

Website: www.olp.gr
Email: demenopoulosn@olp.gr

Total Ship Calls Annually:
(2016) 625 / (2017) 576

Biggest Ship to Call:
Ovation of the Seas (LOA: 348 meters
/ GRT: 168,666 GT)

Annual Passenger Throughput: (2016)
1,094,135 / (2017) 1,055,559

Investment: Expansion of the cruise port will increase the number of the berths at Piraeus cruise port and will include the creation of two additional berths which will be able to facilitate the berthing of new generation cruise ships with lengths of 390m and 350m respectively. Two new cruise terminals will be built; one on the new pier and another at the pier of Agios Nikolaos.



PIRAEUS PORT AUTHORITY S.A.

Website: www.portdebarcelona.cat
Email: mar.perez@portdebarcelona.cat

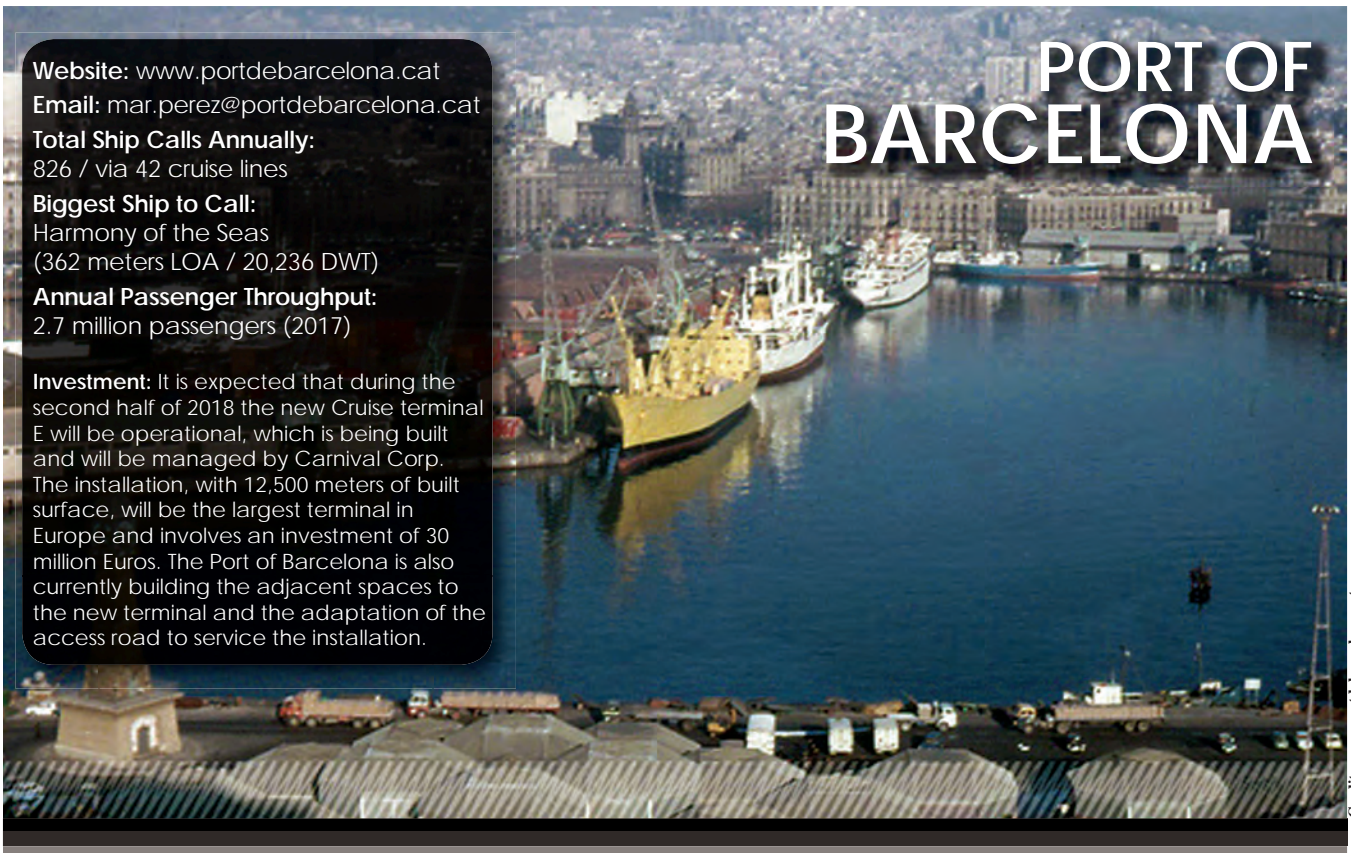
Total Ship Calls Annually:
826 / via 42 cruise lines

Biggest Ship to Call:
Harmony of the Seas
(362 meters LOA / 20,236 DWT)

Annual Passenger Throughput:
2.7 million passengers (2017)

Investment: It is expected that during the second half of 2018 the new Cruise terminal E will be operational, which is being built and will be managed by Carnival Corp. The installation, with 12,500 meters of built surface, will be the largest terminal in Europe and involves an investment of 30 million Euros. The Port of Barcelona is also currently building the adjacent spaces to the new terminal and the adaptation of the access road to service the installation.

PORT OF BARCELONA



Credit: www.portdebarcelona.cat

LISBON, PORTUGAL



Website: www.portodelisboa.pt
Email: alourenco@portodelisboa.pt
Total Ship Calls Annually:
 330 / via 38 cruise lines
Biggest Ship to Call:
 Anthem of The Seas;
 MSC Meraviglia; Queen Mary
Annual Passenger Throughput: 522,042

Investment: Lisbon officially opened its new cruise terminal in November 2017. An investment around Euros 22m resulted in a berth of 1,490 meters able to accommodate vessels up to 12 meters in draft and a new terminal building.

PORT OF SOUTHAMPTON



Website: www.abports.co.uk
Email: kate.pearce@abports.co.uk
Total Ship Calls Annually:
 500 / via 11 cruise lines
Biggest Ship to Call:
 Harmony of the Seas / 36m / 20,236 DWT
Annual Passenger Throughput: £ 2.5m

Investment: In 2017, ABP Southampton completed the final stage of a multi-million pound refurbishment that enabled the port to cater for the world's largest cruise vessels, with delivery of a bespoke ship-to-shore walkway for the Queen Elizabeth II Cruise Terminal. This has assisted in facilitation of Carnival's passenger volume, through Carnival Corp & Plc brands alone, to experience an anticipated increase by 25% over 2017 and 2018. Having re-secured Southampton as Royal Caribbean International's home port in 2016, the port has initiated planning for further enhancements.

PORT OF NEW ORLEANS



Website: www.portno.com
Email: JacksonD@portno.com
Total Ship Calls Annually:
1,676 / via 9 cruise lines
Biggest Ship to Call:
Carnival Dream
(130,000 GT / 1,004 LOA)
Annual Passenger Throughput:
1,150,172 (2017)
Cruise Industry's Local Impact:
\$406 million

Investment: Optimizing capacity at two state-of-the-art cruise terminals and planning for future needs. That effort does not end on the docks. Port NOLA also partners with tourism and economic development groups on initiatives that contribute to the region's appeal.


Credit: PortNOLA

PORT OF HONG KONG



Website: www.hkmpb.gov.hk/en/index.html
Email: kamanchong@isd.gov.hk
Total Ship Calls Annually:
263 / via 10+ cruise lines
Biggest Ship to Call:
Simultaneous berthing of (2) 220,000 GT /
360m LOA / 13 m draft
Annual Passenger Throughput:
466,659 (2016)

Credit: Information Services Department of Hong Kong SAR Government



PORT CANAVERAL

Website: www.portcanaveral.com
Email: portnews@portcanaveral.com
Total Ship Calls Annually:
1,395 via 12 Cruise Lines
Biggest Ship to Call:
No restrictions to the largest passenger
vessels in the world
Annual Passenger Throughput: 4,526,626

Investment: This port is getting ready to build a new cruise terminal for \$150 million. Looking ahead, expenditures of almost \$500 million are planned over the course of the next five years across multiple port projects.



PORT OF VANCOUVER

Website: www.portvancouver.com
Total Ship Calls Annually:
237 via 14 cruise lines
Biggest Ship to Call:
Norwegian Bliss / LOA 325.9
meters / 168,800 GRT
Annual Passenger Throughput:
842,928
Cruise Industry's Local Impact:
\$422 million (2017)

Investment: New camels and fendering systems; Upgrades to all gangways are planned; and the port has leased Convention Center space during the cruise season to increase passenger embarkation space.

Credit: Vancouver Fraser Port Authority

PORT OF SEATTLE



Website: www.portseattle.org
Total Ship Calls Annually:
218 via 7 cruise lines
Biggest Ship to Call:
Norwegian Bliss / LOA 325.9
meters / 168,800 GRT
Annual Passenger Throughput:
1,071,594
Cruise Industry's Local Impact:
\$501 million annual revenues

Credit: www.portseattle.org

PORT OF MARIEHAMN, ÅLAND ISLANDS, FINLAND



Website: www.mariehamnshamn.ax
Email: helena.jansson@hamn.ax
Total Ship Calls Annually:
20 via 10 cruise lines
Biggest Ship to Call:
Artania / LOA 231 meters / DWT 44,348 GRT
Annual Passenger Throughput: 12,000

Credit: www.mariehamnshamn.ax

Gaining the Competitive Edge in a Booming Cruise Industry

By Gregory Martin

2018 is set to be a record-breaking year for new cruise ships, with just about every major cruise line due to launch a new ship during the course of the next 12 months. The four leading cruise companies – Carnival, Royal Caribbean, Norwegian Cruise Line, and MSC Cruises – are all poised to unveil their own state-of-the-art vessels, each attempting to offer the most innovative features at sea. The cruise ship building boom will force ship owners to think of new ways to outsmart their competitors, with many turning to emerging technologies in an attempt to build a strong and unique selling proposition (USP) that is both genuine and permanent.

Continuing pressure will also come from luxury onshore destinations – a long-time rival of the cruise industry. Previously, poor connectivity has created a clear distinction between vessels and luxury resorts. For years the cruise industry has been plagued by old technology, leading customers to view high-speed internet as something limited to land-based destinations only. However, in today's digitized world, travelers have grown accustomed to always-on, ubiquitous connectivity, and expect it on board.

According to a report by CLIA, the world's largest cruise industry trade association, 27.2 million people are expected to go on cruises in 2018, most of whom will expect to stay online throughout their trip – even when in the remotest of locales. Gone are the days where people went on cruises to 'get away from it all'. The rise of social media from all age groups, widespread transition of entertainment services to streaming sites, and the desire to be online and available at all times are just some of the reasons why connectivity has been pushed up the list of holiday 'must haves.'

Enhancing the Customer Experience

More and more cruise lines are now investing in satellite connectivity to get ahead of the game. At the end of last

year, Dream Cruises announced that it would be providing its guests with ultra-fast, on-board broadband services, powered by SES Networks. SES Networks' high-performance and reliable high-speed connectivity enables passengers to stream movies, game online and share real-time vacation travel videos and photos across social media platforms – often at the same speed as they would onshore. By tapping into SES Networks' innovative satellite technology, Dream Cruises has transformed the customer experience onboard, shrinking the connectivity gap between land- and sea-based destinations.

Dream Cruises is just one of several large cruise companies that have turned to SES Networks to give it a competitive edge. In September 2017, Carnival Corporation & plc, the world's largest leisure travel company, announced MedallionNet, a game-changing connectivity service powered by SES Networks. MedallionNet will provide guests with easy-to-use-access Wi-Fi that features exceptional speeds and bandwidth, pervasive stateroom signal strength, and unprecedented service consistency. This was no minor decision. Indeed, to generate the fastest internet ever seen at sea requires constant communication between Carnival's fleet and SES Networks' Medium Earth Orbit (MEO) satellites before vessels can receive a strong and reliable signal, no matter where they are voyaging.

Royal Caribbean, a long-term customer of SES Networks is also delivering its Voom service over SES Networks' MEO satellites, and is launching new ships in 2018.

Game-Changing Connectivity

SES Networks is setting a new standard of enhanced guest connectivity experience, unmatched in terms of speed, performance and reliability. Its MEO satellites enable the large cruise ship market to receive internet access at 1 Gbps per vessel, the current highest connectivity rate in the maritime mar-



Credit: Genting



Credit: AdobeStock_Patrick

“In 2016, the cruise ship industry employed over one million staff, many of whom will be away

from home for weeks at a time. In the past, without internet access ship crew were cut off from their life on land, and forced to endure long periods of time without any contact from their loved ones. Satellite-enabled connectivity is changing all of that.”

ket. The benefits of this are self-evident. With so many brand-new cruise ships launching this year, blazing-fast connectivity will allow them to stand out from the rest of the competition, providing cruise ship owners with the means to modernize the customer experience with new satellite-enabled technologies.

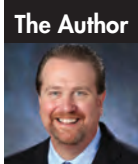
But the benefits don't just stop there. SES Networks' fleet of satellites also has the ability to provide industry-leading facilities for captains and crew. As the industry continues to rapidly expand, more captains and crew will be needed to man the growing number of cruise ships. In 2016, the cruise ship industry employed over one million staff, many of whom will be away from home for weeks at a time. In the past, without internet access ship crew were cut off from their life on land, and forced to endure long periods of time without any contact from their loved ones. Satellite-enabled connectivity is changing all of that. SES Networks understands that cruise customers and crew want to keep in touch with their family, friends and social networks – even while island hopping in the Caribbean, for example – and delivers the smart ship necessary to make that a reality.

Furthermore, as the cruise industry becomes more digitized, ship crews are becoming increasingly reliant on digital technology to fulfill their roles. Connectivity that delivers access to cloud-based platforms makes training via e-learning, computer-based training, videos and even virtual reality a realistic possibility for the crew, supporting increased safety and efficiency as

well as crew retention and job satisfaction. Being the only one in the industry to offer a multi-orbit (GEO and MEO) in multiple bands (Ka-, Ku-, and C-band), SES can offer the flexibility the cruise ship owners need to maximize their crews' potential.

The 'new normal'

2018 promises to be a year of innovation in the cruise ship industry, with technology set to augment the cruise experience in an entirely new way. At the very forefront of this will be ultra-speed, highly reliable satellite-enabled connectivity. Investing in cutting-edge broadband services will enable the cruise ship industry to free itself from its old shackles, and propel itself into a world of digitalization where land-based speed connectivity is the norm, not the exception.



The Author

Gregory Martin

Martin is Vice President, Maritime Segment for SES Networks. Gregory has over 20 years of experience in Information Technology, with a focus on the unique connectivity needs for the maritime and aero industries.

Before joining SES Networks, Gregory was Director of IT Operations for Royal Caribbean International where he was instrumental in revolutionizing the cruise industry, leveraging satellite connectivity for guest experience maximization.

Debunking Digital

Digitization without integration in the world of global shipping is a sure recipe for failure.

By Lars Fischer

While most shipping companies would say that they have embraced the digital world, there are differing degrees of digitization. Some companies operate fully comprehensive systems that extend into every corner of their business. Others might use programs such as Microsoft Word to create documents or Excel for their finances. Both companies are digitized but clearly not to the same extent. A good analogy would be to compare an outdated mobile phone that can only make calls and send SMS messages with the latest all-capable smartphone.

But more than this, a smartphone has the capability to take a photo and share it as a message or by social media; and to capture and store contact details from an incoming email. The outdated handset is digital but the smartphone is digitally-integrated – and that’s important.

As people, we have become digital beings; expected to navigate our daily lives in a digitized, and digitally-integrated, world. Yet not all shipping companies have kept pace with the times. Many might be comprehensively digitized, but in 2018, digitization without integration is like investing in the latest smart TV but with no Wi-Fi at home.

In Real Practice

All companies will have an accounting package and most will operate systems to handle the administration of various commercial and operational requirements. But it’s less common for these systems to communicate with each other.

In a fully integrated shipping company, the tariff system will capture all the complex information relating to individual customers, ports, terminals and cargoes, which can be a hugely

complicated matrix of individual prices, restrictions, discounts and incentives. So when a customer requests a quotation, the quotation system automatically looks up the relevant tariff to create a bespoke and accurate quotation and show the yield. If the quotation turns into a sale, the system will, again, automatically create the required documentation, bills of lading, manifests and more. And once the vessel has sailed, an invoice will be automatically generated and that information will be posted to the accounts.

During this process, if changes need to be made,

The image displays two screenshots of a shipping management software interface. The left screenshot shows the 'Statement of Facts' screen with various data tables for arrival, received, and departure data, along with a table for incident entries and regulatory measures. The right screenshot shows the 'Statement of Facts (Final)' screen, which includes a summary of arrival, received, and departure data, a 'GENERAL ACTION SEQUENCE' table, and an 'INCIDENT DESCRIPTION' table.

Commodity	Quantity
IFO	1.00 MTons
MDO	1.00 MTons
LSF	1.00 MTons
FW	1.00 MTons
BW	1.00 MTons
CON	1.00 MTons

Commodity	Quantity
IFO	1.00 MTons
MDO	1.00 MTons
LSF	1.00 MTons
FW	1.00 MTons
BW	1.00 MTons
CON	1.00 MTons

Commodity	Quantity
IFO	1.00 MTons
MDO	1.00 MTons
LSF	1.00 MTons
FW	1.00 MTons
BW	1.00 MTons
CON	1.00 MTons

No.	From	To	Action	Remarks	Commodity	Berth	Unit
1	18/04/16 15:56	18/04/16 15:56	EOSP		GENERAL		
2	18/04/16 15:56	18/04/16 15:56	RIVER		GENERAL		
3	18/04/16 15:56	18/04/16 15:56	BERTH		GENERAL	SSA Pa	
4	18/04/16 15:56	18/04/16 15:56	START CARGO OP		GENERAL	SSA Pa	
5	18/04/16 15:56	18/04/16 15:56	LOAD		GENERAL	SSA Pa	
6	18/04/16 15:56	18/04/16 15:56	END CARGO OPS		GENERAL	SSA Pa	
7	18/04/16 15:56	18/04/16 15:56	UNBERTH		GENERAL	SSA Pa	
8	18/04/16 15:56	18/04/16 15:56	RIVER		GENERAL	SSA Pa	
9	18/04/16 15:56	18/04/16 15:56	BOSP		GENERAL		

No.	From	To	Code	Incident Description	Commodity	Berth	Manufacto
3-1	18/04/16 11:11	18/04/16 12:11	LASH	TEST	GENERAL	SSA Pacific	1000

a fully integrated system will automatically create manifest correctors, revised invoices and other updates. In other words, information will flow seamlessly from one activity to another without the need to re-enter data. Retyping leads to errors, errors lead to delays and delays disrupt cash flow and cost money.

Just like apps on a smartphone, the fully integrated system does all of the hard work without the need for human intervention. The result is greater transparency, oversight and – importantly – a reduction in duplication and error across administrative processes.

In context, even a small ocean carrier will be achieving revenues in excess of \$100 million a year. So if 10% of all outgoing ocean freight invoices are wrong due to a lack of integration and the need to retype data, \$10 million will be in dispute. Disputed invoices are often shelved by accounting departments and this causes a large and hard-to-manage hole in the cash flow.

Challenging Changes

How does this happen? Often it is through a process of natural evolution. Many shipping companies want to be independent, they start building their own software applications to deal with a specific process, such as quotations or tariff management. As the company grows, they find it challenging to maintain and

update their systems and so decide to buy-in other applications to deal with other processes. A mix of bespoke and off-the-shelf applications mostly results in zero or little integration between them. And this means a huge amount of data is re-keyed.

When challenged, IT divisions will often defend themselves with the usual cry of being under-resourced and struggling to maintain the systems already on-line – in other words, like it or lump it. Another, perhaps more reasonable explanation is that our IT colleagues are increasingly being confronted with a raft of external reporting regulations that must be complied with if a carrier is to remain in business. As a result, achieving internal integration, unsurprisingly, often takes second place.

Obligations on carriers to report to external counter-parties are becoming increasingly burdensome. Operators must report to ports, terminals, customs, depots, clients and other outstations.

If that were not challenging enough, the standards in place to exchange this information can be cumbersome. Almost all ports require electronic data interchange (EDI) messages containing roughly the same information, but often communication partners have different interpretations of structuring the messages – even sometimes within the same port. This means a carrier's internal systems will need to incorporate dozens, or even hundreds, of different message formats in order to com-

“

By simply adopting a software solution specifically for the shipping industry, internally integrated businesses will be able to ensure external integration with every partner and outstation. In 2018, achieving comprehensive digitization and effective integration is now within the reach of the many, not the few.



Credit: Softship

ply with regional and local requirements.

The drivers for external integration are clearly much stronger than those to achieve internal integration. Some companies figure they can live without internal integration; but the question is, for how long? If a company's internal integration is limited, it will eventually be sending out incorrect data externally, and that's not a good place to be.

Modern information technology systems and software applications, when used intelligently, can help deliver huge benefits. But care must be taken to select applications tailored to the specific needs of the company. Modern shipping software is modular, meaning operators can select only the applications they need to automate certain processes within their businesses. Each module seamlessly integrates with others to facilitate a flow of information across the company. Data need only be input once, thus reducing duplication, errors and confusion. Data is then shared across the company and with relevant business partners. This significantly reduces the administrative burden and introduces efficiencies across the business.

The primary reason not all shipping companies take advantage of these solutions is because of the ungrounded assumption that moving to a new system will be time consuming, interrupt business or pose a risk.



Managing Modern IT

Twenty or more years ago, digitization was the prerogative of the very large shipping company with deep pockets. Today, it is a fairly simple process to buy specialist packaged or off-the-shelf solutions that suit the individualities of each company. These packages are the means to make digitized companies into digitally-integrated companies.

The beauty of these applications is that they are built to facilitate total integration between each of the core processes – connecting systems through a single over-arching, fully connected and seamlessly networked entity. So, data flows seamlessly from tariffs to quotes, to sales to bookings to invoices to accounting and finally to management review.

Other than the obvious advantages of less data input, reduced errors and the ability to deliver heightened customer service, these packaged solutions are available at a fraction of the price of building a bespoke system. In essence, they have leveled the IT playing field across the entire spectrum of shipping companies.

Many shipping companies do not yet have these solutions in place and, to their detriment, are losing out to those that do. But by simply adopting a software solution specifically for the shipping industry, internally integrated businesses will be able to ensure external integration with every partner and outstation. In 2018, achieving comprehensive digitization and effective integration is now within the reach of the many, not the few.

Softship, a provider of software solutions to the international liner shipping industry and port agency sector, offers its 'LIMA' software suite and associated applications to serve the needs of liner shipping carriers; 'ALFA', its software suite for liner agents; and 'SAPAS', a cloud-based software package for port agents.

Softship products serve more than 120 companies globally and are designed to streamline tasks in order to deliver greater efficiencies to the full list of processes that comprise shipping. Softship additionally provides a range of business management tools that allow shipping executives to fully analyze their commercial and operational activities. Offered in a modular format which provides clients with flexibility to purchase or lease the solutions they need, the software can be modified to meet specific market or company requirements and is delivered as a locally installed application or through a hosted or cloud-based solution. www.softship.com

The Author **Lars Fischer**



Fischer is the Managing Director of the Asia Pacific headquarters of Softship. Lars began working for Softship as a software engineer in 1994. He became a business consultant and project manager in 1996 and has headed-up Softship Data Processing, Singapore, since 1998. He is responsible for Singapore's commercial and technical staff of 25 and for the group's sales & marketing strategy world-wide.

IMB: MARITIME PIRACY,



Table 1: Locations / Actual and Attempted Attacks, Selected Areas (2013-17)

Location	2013	2014	2015	2016	2017
Indonesia	106	100	108	49	43
Malaysia	9	24	13	7	7
Philippines	3	6	11	10	22
Singapore Straits	9	8	9	2	4
Vietnam	9	7	27	9	2
Bangladesh	12	21	11	3	11
India	14	13	13	14	4
Colombia	7	2	5	4	6
Venezuela		1	1	5	12
Gulf of Aden	6	4		1	3
Nigeria	31	18	14	36	33
Somalia	7	3		1	5
The Congo	3	7	5	6	1
Global Totals	264	245	246	191	180

Source: IMB

ARMED ROBBERY AT 22-YEAR LOW

A total of 180 incidents of piracy and armed robbery against ships were reported to the International Chamber of Commerce's (ICC) International Maritime Bureau (IMB) in 2017, according to the latest IMB report. It is the lowest annual number of incidents since 1995, when 188 reports were received. That doesn't mean the problem is well on its way to being solved – it isn't. In 2017, 136 vessels were boarded, while there were 22 attempted attacks, 16 vessels fired upon and six vessels hijacked. In 15 separate incidents, 91 crewmembers were taken hostage and 75 were kidnapped from their vessels in 13 other incidents. Three crewmembers were killed in 2017 and six injured. Those numbers contrast to 2016, when a total of 191 incidents were reported, with 150 vessels boarded and 151 crewmembers taken hostage.

Nine incidents were recorded off Somalia in 2017, up from two in 2016. Eventually, six Somali pirates were detained by European Union Naval Force (EUNAVFOR), transferred to the Seychelles and charged with “committing an act of piracy” where they face up to 30 years' imprisonment, if convicted. This incident alone demonstrates that Somali pirates still have the capability and intent to launch attacks hundreds of miles from the coastline.

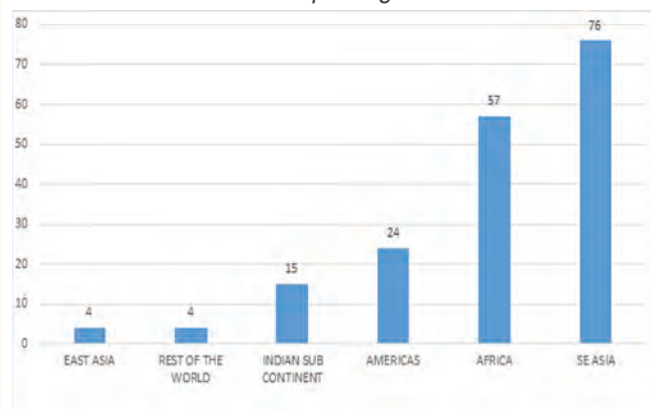
Meanwhile, and in Southeast Asia, Indonesia recorded 43 incidents in 2017, slightly down from 49 in 2016. Indonesian Marine Police patrols have been effective in the country's 10 designated safe anchorages. Separately, however, in the Philippines, the number of reported incidents has more than doubled, from 10 in 2016 to 22 in 2017. Notably, IMB's Piracy Reporting Center (PRC), on behalf of the Philippine authorities, has since helped to avoid further successful attacks.

Nigeria recorded 33 reports with no vessels hijacked. There were however ten kidnapping incidents involving 65 crew. Of the 16 vessels reported being fired upon globally, seven occurred in Nigeria – further evidencing the levels of violence and threats to seafarers in these waters.

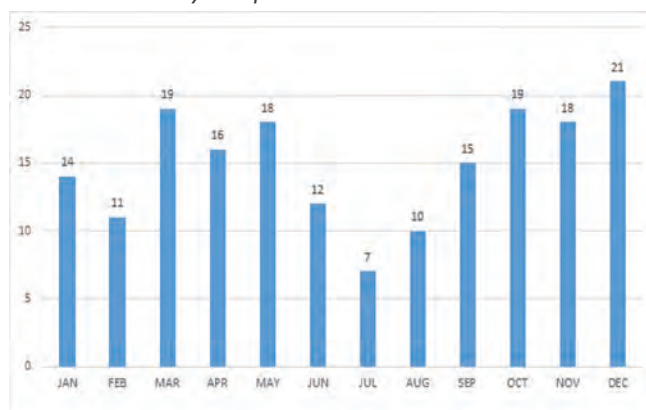
The prompt and robust actions of the navies and authorities in this area should be commended. Masters are urged to continue to maintain high levels of vigilance when transiting the high-risk area and to follow the latest version of the best management practices. Since 1991 the IMB PRC's 24-hour manned centre, has provided the maritime industry, governments and response agencies with timely and transparent data on piracy and armed robbery incidents – received directly from the Master of the vessel or its owners. The IMB PRC's prompt forwarding of reports and liaison with response agencies, its broadcasts to shipping via Inmarsat Safety Net Services and email alerts to CSOs, all provided free of cost, has helped the response against piracy and armed robbery and the security of seafarers, globally. Reported attacks can be viewed online on the IMB Live Piracy Map.

IMB strongly urges all shipmasters and owners to report all actual, attempted and suspected piracy and armed robbery incidents to the IMB PRC. This first step in the response chain is vital to ensuring that adequate resources are allocated by authorities to tackle piracy. Transparent statistics from an independent, non-political, international organization can act as a catalyst to achieve this goal. The International Chamber of Commerce (ICC) is the world's largest business organization with a network of over 6.5 million members in more than 130 countries. IMB is a part of ICC. www.iccwbo.org

Total Incidents per Region – 2017



Monthly comparison of Incidents – 2017



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