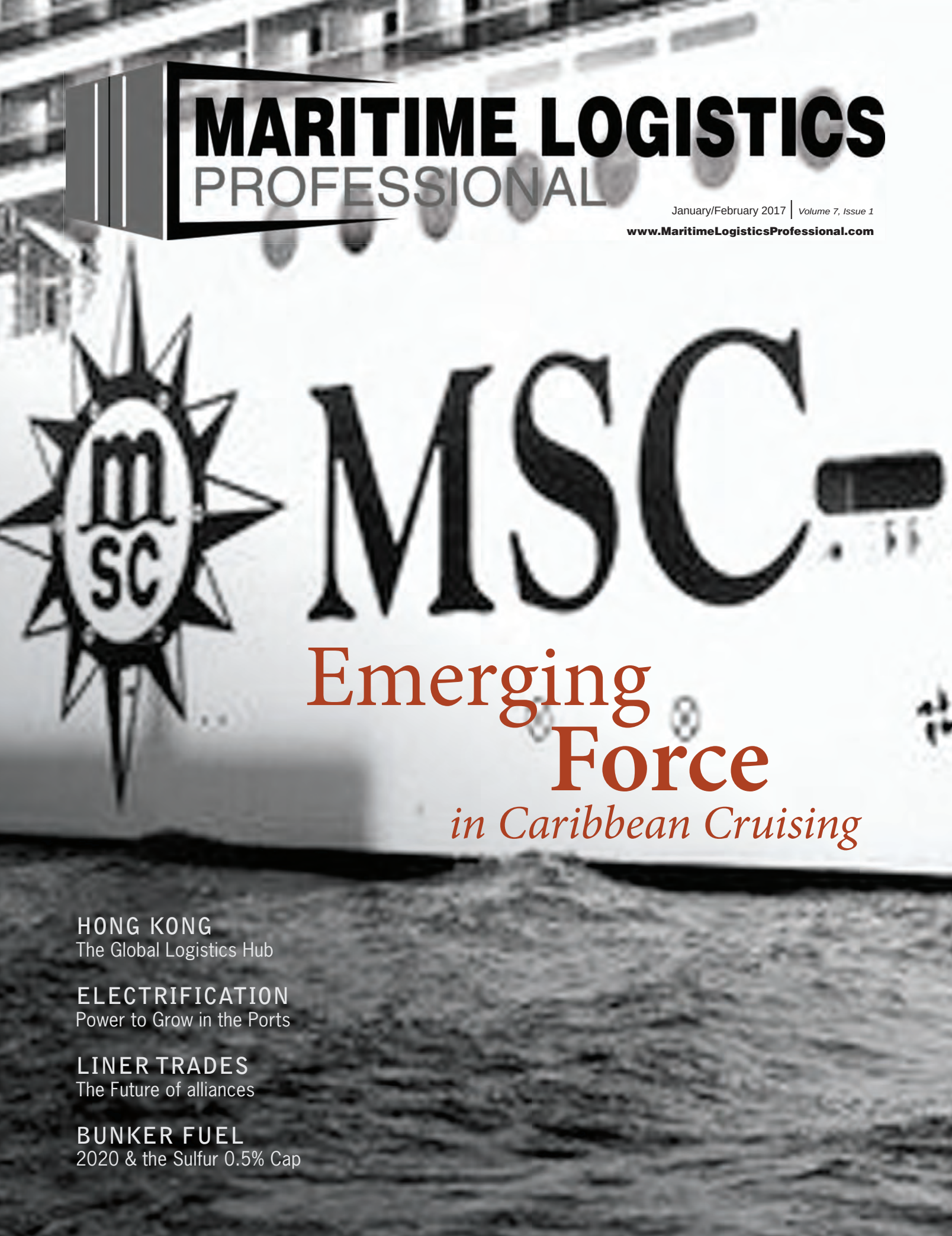
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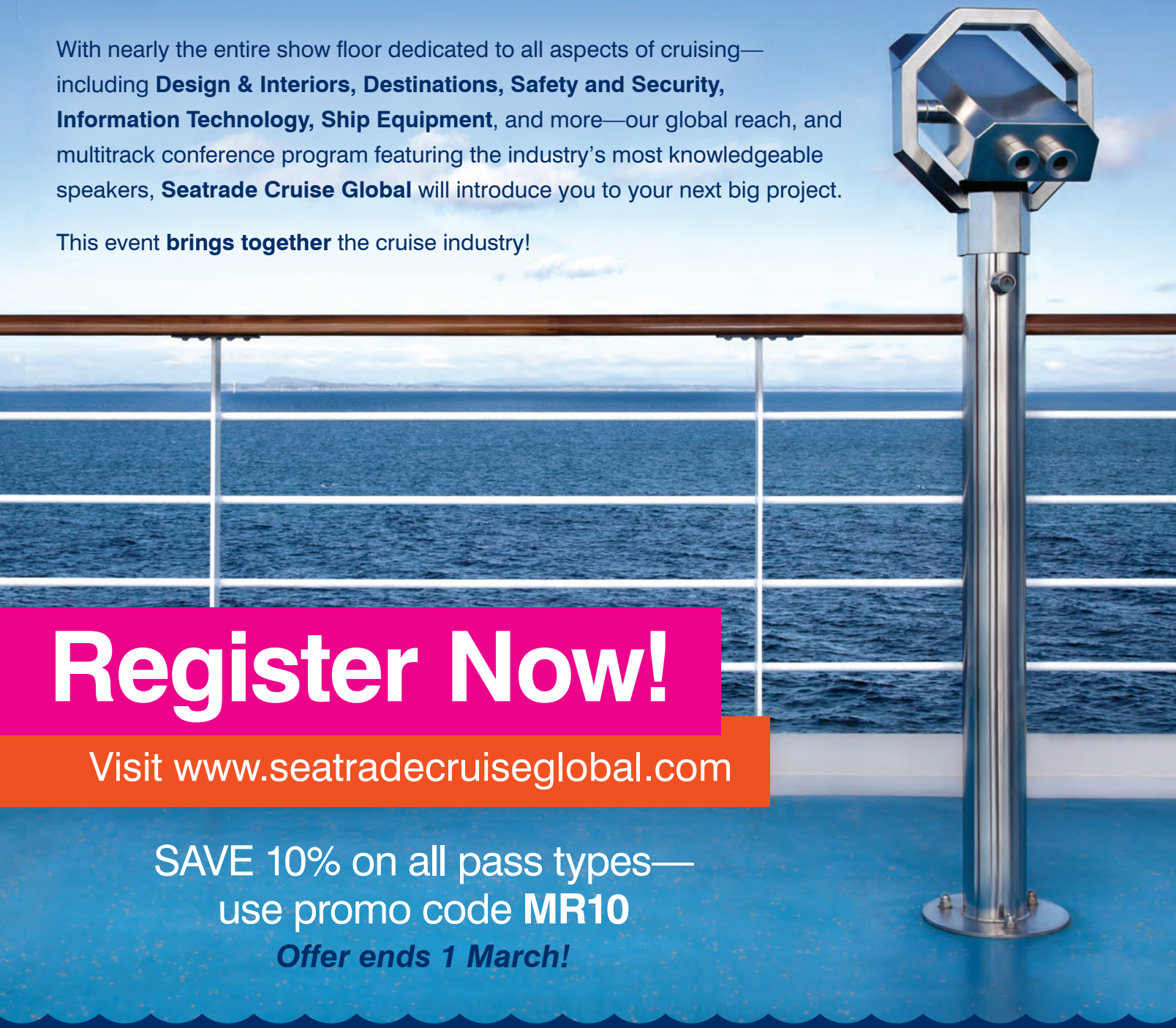

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ON THE COVER

On the Cover

MSC Cruises enters 2017 with big plans and even bigger ambitions. They may well be the one to watch as a red hot cruise industry rolls into the New Year.

Image: MSC Cruises

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By Joseph Keefe

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Editor's Note

Port Miami & Port Everglades Invest

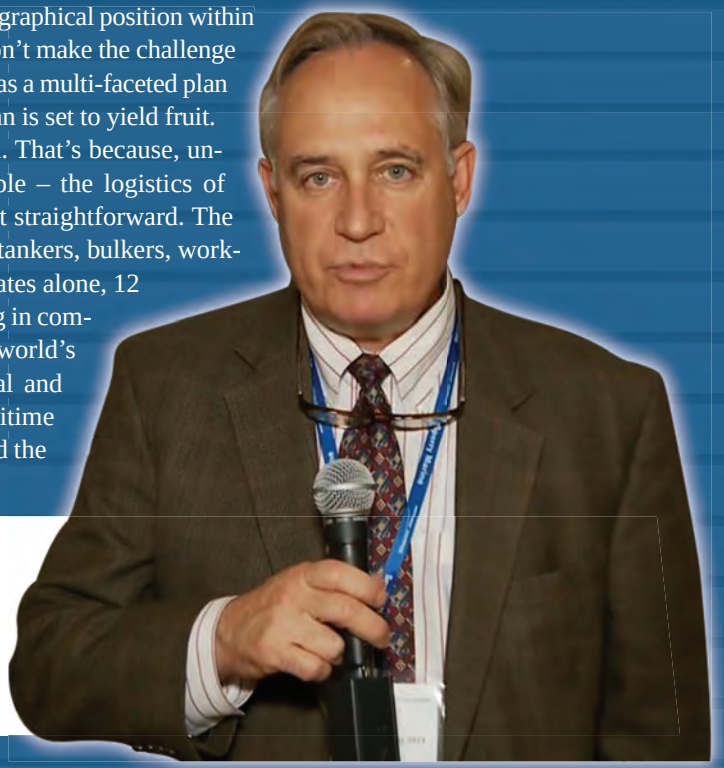
There is a saying in the air freight business, especially among the pilots that get those giant airplanes from point A to point B. Although these pilots tend to make less than their passenger jet counterparts, they nevertheless stay on the cargo side of the equation. Any of these transportation professionals will tell you, sometimes tongue-in-cheek, "Freight doesn't complain." Thirty thousand feet below, on the waterfront, cruise company executives know only too well exactly what those pilots are talking about.

Separately, and at a time when there are far more questions than answers in the world of commercial blue water shipping, it can be said that one sector – the global cruise industry – continues to provide investors, mariners and a growing customer base seemingly unlimited opportunities, upside and return on investment. The logistics of making this happen has become increasingly complex, especially where it involves keeping and growing a discerning and demanding customer base. Nowhere is that more true than in the United States and the heart of that effort ultimately emanates from the state of Florida.

At the same time, cruise operators, ports and terminals alike know it won't be enough to just sit back and wait for new business to come. As the two cruise ports that dominate the domestic cruise industry, Port Miami and Port Everglades, upgrade existing terminals and plan new berths to accommodate existing cruise lines and the ones still to come, the future and the very nature of cruising is set to change forever. Rick Eyerdam's story begins on page 32.

Halfway around the globe, a different situation is unfolding. The autonomous, Special Administrative Region of the People's Republic of China, also known as Hong Kong, is engaged in a focused effort of its own. Long the dominant port and logistics hub in the region, Hong Kong today faces stiff competition from other regional ports and has slipped to the world's number five position in terms of TEU throughput alone. And, its geographical position within five hours of more than half of the world's population alone won't make the challenge of keeping market share any easier. Nevertheless, Hong Kong has a multi-faceted plan that addresses a host of issues. Turn to page 17 to see if that plan is set to yield fruit.

Actually, containers and cruise ships have a lot in common. That's because, unlike other modes – rail, trucking and air freight, for example – the logistics of the maritime side of the intermodal equation are anything but straightforward. The global waterfront is shared by containerships, cruise vessels, tankers, bulkers, workboats, barges, dredges, super yachts and here in the United States alone, 12 million recreational vessels. All of these sectors have one thing in common: they have different needs, but all must comply with the world's ever-growing list of environmental, regulatory, technological and operational mandates. The new normal, when it comes to maritime logistics, will never be 'normal' again. Within these pages, and the five editions that follow in 2017, you'll understand why.



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

Associate Publisher's Note

The astute among you may have noticed a significant change in the offering from *Maritime Logistics Professional* this month, chiefly that we have decided to mostly "go digital." The decision was not taken lightly nor without a great deal of thought. But in light of a number of significant developments, it makes perfect sense.

What will not change is the editorial context and content as led by Joe Keefe. Joe joined us just more than six years ago, and his steady hand, experience as a mariner and intellect and insight have helped to grow the whole *MLP* brand, a brand that includes this publication, the MaritimeProfessional.com website (which today has more than 28,000 members), the *Maritime Logistics Professional* Enews and App.

What will change is just about everything else.

The branch out into the logistics universe from a pure maritime play has opened new worlds of opportunity, and driven by the Amazon's and the Google's of the planet, the entire logistics chain is undergoing a 'digital revolution' that is leaving in the dust those unwilling or unable to change.

Like the rest of the media universe, the influx of digital media options is growing in earnest in our sector. Personally I'm a 'paper guy,' which I think stems in part from my age and my habit, but also from the fact that I've always taught my Labradors to 'fetch the paper' from the driveway! (Fetching the iPad could get sloppy).

But in truth, as a media company we are committed to deliver our information to our readers as when and how they would like to receive it. With four magazines, 10 websites, 12 ENews services and four Apps, I can say with confidence that 24/7/365 one of our brands is actively circulating through the maritime world.

What I can also say with confidence is that with our recent acquisition of the assets of The Maritime Network, LLC, we now house under our roof the largest Social Media offering to the global maritime industry, led by our Maritime Network LinkedIn group with 128,718 members. Number two is not even close.

You likely know the name **Gaspare Maturano**, who has steadfastly built The Maritime Network LLC for more than a decade. Upon the closing of the acquisition, Gaspare said, "I am excited about where New Wave Media can take The Maritime Network. Their wide reach and expertise within the maritime world is exactly what I was looking for to bring The Maritime Network to the next level."

Everyone here at ***Maritime Logistics Professional*** looks forward to bringing you to the 'next level' with us.

Gregory R. Trauthwein, Associate Publisher | **trauthwein@marinelink.com**

SPOTLIGHT: LINERS TRADES AND ALLIANCES

A LOOK BACK AT A TUMULTUOUS 2016 AND A LITTLE ADVICE FOR WHAT IS LIKELY TO COME NEXT.

BY WILLIAM P. DOYLE

The year 2016 will be known as the beginning of the third generation of ocean carrier vessel sharing alliances and the most active year in decades for liner-wide consolidations. Recapping the past year is a necessary place to start as we look ahead to what could be an interesting year ahead.

Basic Historical Facts

The first generation of global alliances came about in the 1980's and 1990's. Arguably, the very first vessel sharing agreement, styled The Vessel Sharing Agreement, consisted of Sea-Land Service, Inc., Nedlloyd Lijnen, B.V., and P&O Containers, Ltd. Just like today's vision, this agreement was intended to maximize the use of very large and fuel efficient containerships known as the Econ-class-ships that Sea-Land had acquired through the U.S. Lines bankruptcy. In the mid-1990's the CKYH alliance began forming with a strategic alignment first between COSCO, K-Line and Yang Ming – and within a couple years Hanjin was folded into the alliance. The Grand Alliance and New World Alliance were introduced in the 1998. The Grand Alliance consisted of Hapag-Lloyd, MISC Berhad, NYK, and OOCL. The New World Alliance consisted of APL, Hyundai Merchant Marine and Mitsui OSK Lines.

The second generation of global alliances came about in in 2011 when The New World and Grand Alliances merged to create The G6 Alliance. Here, six of the world's largest liner companies joined forces – APL, Hyundai Merchant Marine, and Mitsui O.S.K Lines, Hapag-Lloyd, Nippon Yusen Kaisha and Orient Overseas Container Line.

In a noteworthy November 2011 announcement, the then former Grand Alliance member, MISC Berhad, foreshadowed:

> ***…the radical change in the operating dynamics of the liner industry which is driven by high operating cost and rapid changes in global trade patterns is challenging the validity of today's operating models. With the pursuit of size being the centre of this change, leading operators are now testing the size limits of vessels in order to maximise economies of scale and realise greater cost efficiency. This push for investments in larger vessels comes at a time when operators are struggling to stay profitable with a depressed freight rate environment, which is not expected to improve any time soon due to the continued heavy delivery of new container vessels.***

Within six months of that announcement, MISC Berhad exited the container trade to focus on its energy transportation business. In 2013, the world's three largest container carriers - Maersk Line, CMA-CGM, and Mediterranean Shipping Company (MSC) - announced the formation of the P3 Vessel Sharing Network. The network never materialized because the People's Republic of China refused to grant the alliance its regulatory approval.

Shortly after China's rejection, Maersk and Mediterranean Shipping Company (MSC) announced the formation of the 2M Vessel Sharing Agreement. What followed the P3 and 2M

> BEGINNING ON OR ABOUT APRIL 1, 2017, THERE WILL BE THREE MAJOR OCEAN CARRIER ALLIANCES. THIS NEW GENERATION OF ALLIANCES RECEIVED WORLDWIDE REGULATORY APPROVAL BUT WILL DELAY IMPLEMENTATION UNTIL APRIL. IN THE UNITED STATES, THE NEW ALLIANCES ALL RECEIVED REGULATORY APPROVAL IN 2016.

announcements was a rapid succession of expanded and proposed alliances.

In September 2013, CMA CGM announced it was forming The Ocean Three Alliance with United Arab Shipping Company (UASC) and China Shipping Container Line (CSCL). In April 2014, The G6 Alliance expanded services into the Asia-U.S. West Coast and trans-Atlantic routes. And then, in February of 2014, the CKYH Alliance announced that Evergreen Line would join the network, thereby making it the CKYHE Alliance.

Mergers, Acquisitions, Bankruptcy & New Alliances

Currently, in theory there are four major alliances that in short order will be reduced to three. The ocean carriers intend to honor all contracts in place under the four alliances until April 1, 2017. The four major alliances as of January 2017 are as follows:

2M Alliance – consisting of Maersk Line and Mediterranean Shipping Company (MSC). In December of 2016 Maersk announced that it would purchase Hamburg Süd. Earlier in the same month 2M announced it had reached a strategic cooperation agreement with HMM.

G6 Alliance – consisting of APL Co. Pte Ltd., Hapag Lloyd, Hyundai Merchant Marine (HMM) Co. Ltd., Mitsui OSK Lines (MOL) Ltd., Nippon Yusen Kaisha (NYK) Lines, and Orient Overseas Container Line (OOCL) Line. Ocean Three Alliance member CMA CGM completed the purchase of APL in September 2016. Hapag Lloyd is expected to complete the purchase of Ocean Three Alliance United Arab Shipping by the end of 1Q 2017.

CKYHE Alliance – consisting of COSCO Container Lines Co., Ltd., Kawasaki Kisen Kaisha, Ltd. (K Line), Yang Ming Ltd., Hanjin Shipping Co, Ltd., and Evergreen Line. Hanjin Line entered receivership (bankruptcy) in August 2016 and was thereafter suspended from the alliance network. China's COSCO and Ocean Three Alliance member China Shipping Container Line CSCL completed their merger in October 2016.

Ocean 3 (O-3) Alliance – consists of CMA CGM, United Arab Shipping Corporation (UASC), and China Shipping Container Liner (CSCL). This Alliance will completely cease to exist after April 1, 2017.

Third Generation of Alliances

Beginning on or about April 1, 2017, there will be three major ocean carrier alliances. This new generation of alliances received worldwide regulatory approval but will delay implementation until April. In the United States, the new alliances all received regulatory approval in 2016. The three major ocean carrier alliances will be:

The ***2M Alliance*** will comprise Maersk Line (with Hamburg Süd) and Mediterranean Shipping Company (MSC).

The ***Ocean Alliance*** will comprise CMA CGM (with APL), China COSCO Shipping (the new company formed through the merger of COSCO and CSCL), Orient Overseas Container Line (OOCL) Line, and Evergreen Line.

THE Alliance will comprise Hapag Lloyd (with UASC), Mitsui OSK Lines (MOL) Ltd., Nippon Yusen Kaisha (NYK) Lines, Kawasaki Kisen Kaisha, Ltd. (K Line), Yang Ming Ltd. It is important to note that the container business units of each Japanese carrier (MOL, NYK, K-Line) will be merged into a single company by mid-2017.

Post-Hanjin Bankruptcy

The Hanjin bankruptcy of 2016 was a complete disaster – stranding more than $14 billion worth of cargo at sea. I urge shippers and carriers to work with each other on ways to provide safeguards. This can be achieved any number of ways such as insurance contracts secured by an alliance, bonding or other financial instruments.

THE Alliance is the first alliance to formally explore options for providing safeguards. Members of the Ocean Alliance are in the process of reviewing their safeguard offerings post Hanjin. And, 2M recently announced that it has safeguards in place for its strategic operation agreement with HMM. Let's take a look at some of the new language in THE Alliance. The parties have included what I call framework language in Section 7.4 that would allow the remaining (i.e., non-bankrupt) parties to:

- *Make arrangements directly with entities providing vessels/space to the Affected Party that are used by the Alliance,*

> THE HANJIN BANKRUPTCY OF 2016 WAS A **COMPLETE DISASTER** – STRANDING MORE THAN $14 BILLION WORTH OF CARGO AT SEA. I URGE SHIPPERS AND CARRIERS TO WORK WITH EACH OTHER ON WAYS TO PROVIDE SAFEGUARDS. THIS CAN BE ACHIEVED ANY NUMBER OF WAYS SUCH AS INSURANCE CONTRACTS SECURED BY AN ALLIANCE, BONDING OR OTHER FINANCIAL INSTRUMENTS.

- *Make arrangements directly with agents or subcontractors of the Affected Party,*
- *Take other actions to facilitate the movement or cargo carried by the Affected Party to the intended port of discharge or other locations,*
- *Discuss and agree on other measures that are necessary to maintain continuity of operations and facilitate the orderly movement of cargo.*

Though the details have not been completely worked out, the intent in part is to set-up safeguards that could be used when an individual member liner fails in the network, (i.e., a carrier goes bankrupt). Thus, in theory, a funding instrument could be created. The funds from the instrument could be used to pay operational expenses to bring ships into port and unload containers (and also re-load empties) to ensure that cargo is not stranded on the ocean. These details are still being worked out by the parties – but the placeholder language is in the existing THE Alliance agreement.

Rising from the Ashes of Hanjin

Executives from Samra Midas Group (SM Group) recently visited the Federal Maritime Commission (FMC). This group is starting a new ocean carrier company called SM Line. SM Group is a South Korean based manufacturing, construction and services conglomerate and it is an expansive business.

SM Line is being formed from the ashes of the now bankrupt Hanjin Line. At this time, SM Line intends to operate a transpacific service (TPS) between the ports of Shanghai and Ningbo in China; Busan, South Korea; and the port of Long Beach, CA. The company will operate a string of five 6,500 TEU containerships. The transpacific service is scheduled to commence in April 2017.

In addition, SM Line intends to operate eight Intra-Asia services between China, Japan, Thailand, Vietnam, India, Pakistan, Indonesia and other countries. The firm intends to operate approximately eleven vessels in the 1,000 to 2,500 TEU range (or smaller). Among other businesses, SM Group is the owner of Korea Line Corporation, operating about 32 ships transporting LNG, coal, ore, nickel, product oil, cars and trucks.

The Year Ahead – 2017

While 2016 was certainly chock-full of surprises in the liner trades, there is some certainty on the horizon. We know that the all three major shipping alliances will commence operations in April 2017. The Commission will closely monitor the alliances and the competitive nature of their networks to determine whether prices increase and services decrease – and to what extent. Most of the already announced mergers will be completed 2Q 2017. I would urge in the meantime that shippers and carriers find solid safeguards that would protect the supply and transportation chain should another Hanjin-type bankruptcy take place in the industry. THE Alliance has provided a good starting point in its vessel sharing agreement filed with the FMC. It is highly likely though that more surprises are coming – the industry wide consolidation is not over.

The Author

William P. Doyle
is a Commissioner with the U.S. Federal Maritime Commission. The FMC, among other things, regulates liner companies, ocean transportation intermediaries and marine terminal operators. The thoughts and comments he expresses here are his own and should not be construed to represent the position of the Commission or his fellow Commissioners.

The IMO's 0.5% Global Bunker Sulfur Cap

Breaking down the challenges of the 2020 sulfur cap can be confusing. Matti Bargfried provides a primer.

By Matti Bargfried

What has happened so far?

The IMO this October voted in its 70th session of the Marine Environment Protection Committee to globally cap the maximum amount of sulfur allowed to 0.5%. HFO will be further allowed (there is no mandate to disallow usage) provided it meets the set standards. Alternative measurements like scrubbers are also accepted to reduce the ship emissions.

This number had already been unanimously adopted in 2008 during a meeting of the MARPOL Annex VI review group, and was ratified by 53 countries (81.88% of tonnage). The date of implementation depended on the outcome of a study which the IMO conducted and presented this August.

The study aimed to determine if sufficient production and therefore availability of low sulfur fuel oil (LSFO) would be likely. A positive outcome would set the date at 2020, whereas a negative prospect would allow another five years before the new regulation became effective. Bloomberg estimated that the global cap would add 250 million metric tons of LSFO to global demand.

The IMO study concluded that there are no bottlenecks of low sulfur fuel to expect, whereas another published study by EnSys claimed the opposite. It is worth noting that EnSys made an unsuccessful bid to carry out the official IMO study. The EnSys study was supported by BIMCO and IPIESA, an oil and gas industry association.

However, the International Chamber of Shipping pointed out in its Annual Review 2016 out that the IMO might place itself under political pressure if it set the date at 2025: *"In reality the decision taken by the IMO is likely to be a political one. […] Even if the supply of compliant fuel is projected to be tight, IMO Member States might nevertheless conclude that it is politically unacceptable to postpone implementation."*

This may have its roots in the fact that the European Union has already agreed that the sulfur cap will be effective for all 200-mile deep EU Member coastlines by 2020. The coastline reaches partly into the Indian and Pacific Ocean as some states have territories overseas. Setting the date to 2025 would make the North African Coast corridors where 3.5% sulfur is still allowed, too close to many European States for the liking of the EU regulators.

Does the Sulfur Cap Make Sense?

It might in fact be a case of too little; too late. Not only does the EU take over action regarding environmental regulations, leaving IMO behind in the political field, the IMO regulations are too weak and the cap agreed on is too forgiving, from an environmental point of view.

According to Bill Hemmings, Director of Aviation and Shipping of the NGO European Federation for Transport and Environment, the IMO wasted 10 years following Kyoto which tasked the organization with regulating greenhouse gas emissions. Shipping companies and ship managers may cringe because of the ever-rising costs of remaining compliant by using better fuels like marine diesel or expensive scrubbers. Conversely, NGOs and scientists cringe because even 0.5% of sulfur is still five hundred times higher than sulfur limits in diesel for cars, where its capped at 0.001%.

It has long been known that vessels pollute the environment much more than all cars combined. So, does it makes sense to further reduce sulfur? Yes it does, but many companies will be affected negatively. However, there are other points to consider when

Date	Sulfur Limit in %	
	Global	SOx ECA
2000	4.5%	1.5%
2010		1%
2012	3.5%	
2015		0.1%
2020	0.5%	

Photo credit: gcammarata

judging environmental impact. The high sulfur exhaust of vessels helps to counter the CO2 greenhouse effect. This is because the sulfur dioxide reduces the amount of solar energy reaching the surface, hence it cools down the planet. This man-made influence is dwarfed by natural sulfur exhaust of algae, which produce a compound called DMSP (dimethylsulfoniopropionate).

This compound is released slowly over time from algae close to the surface, acting as a sun screen. When other phytoplankton start eating the algae DMSP is released in big quantities into the water from the digested algae. Bacteria in the water start processing the chemical, creating dimethylsulfide (DMS), a gas which leads to the formation of clouds (cloud condensation nuclei). Close to the coastline we recognize this as the so typical "ocean smell." Clouds are most important for maintaining the climate as they reflect solar energy back into space, just as SOx (sulfur oxide) does.

This process is threatened by an effect called ocean acidification. The ocean basically acts as a CO2 sink by binding CO2 from the atmosphere. This makes the ocean more and more sour, because the carbon dioxide reacts with water and forms H2CO3 (carbonic acid). Ocean acidification is a major cause of dying coral reefs and the destruction of phytoplankton, which we need to produce DMS for cloud building. Since the beginning of the industrial revolution the so-called ocean acidification has stored roughly a third of all man-made emissions.

It might look far-fetched, but refining an additional 250 million metric tonnes of fuel has a very negative impact on CO2 emissions. First, the additional production steps demand additional energy and it is likely that this will be covered by burning non-renewable resources, secondly the refining itself sets free CO2 emissions. Therefore, capping sulfur will accelerate global warming to some degree.

Cost and Challenges of Sulfur Reduction

Vessel owners basically can decide between different strategies to meet the requirements, all have advantages and disadvantages:

- ***They can install scrubber systems***
- ***They can buy more expensive low sulfur fuel oils like MGO/MDO or new ECA fuels (> 20 new blends)***
- ***They can refit the vessel to LNG***

Despite investment and operational costs there are additional less obvious expenses. One is the loss of cargo room when fitting a scrubber into the vessel. The German ferry company TT Lines carried out a pilot project, fitting four scrubbers as hybrid systems (open and closed loop) into its ferry ROBIN HOOD (6300 tdw, 180 m length). Last year, at the ISF Conference at the University of Flensburg in Germany, the company presented the results of the project.

The ROBIN HOOD scrubbers were fitted into its port and starboard funnels, whereas the two container sized engine compartments had to be fitted below deck, blocking approximately one sixth of its deck cargo space. In total 17,500 meters of electric cable, 700 meters of GRE pipes and 2,000 pieces of components had to be installed.

New equipment comes with new administrational effort and additional maintenance jobs. Few ranks are familiar with the new systems, leading to higher costs in the beginning. Due to the new maintenance jobs time is taken out of the tight schedule.

Vessels which are switching permanently from HFO to low sulfur fuels instead of using scrubbers, may run into similar problems as today when entering SECAs. Dr. Reinhard Krapp of the VDR (an association of German shipping companies) published a paper named *"Industry Guidance on Compliance with the Sulphur ECA Requirements"* and pointed out a number of problems when switching fuels.

Photo credit: donvictoriO

One of the main aspects are operational problems using engines optimized for HFO on MGO/MDO when running for longer durations. It is assumed that this is due to a lower injection temperature (100° C lower), which causes stress on the surrounding materials and seals. Another factor might be that MGO/MDO have higher homogeneity leading to a faster rise in pressure when combusted. This might change the vibrations and force transmission says Dr. Krapp. As a result, fuel could leak into lubricants.

He also pointed out that the energy density of current HFO is approximately 8% higher than that of distillates. In return, distillates have a 2% higher net calorific value, with a net loss of approximately 6%.

There are many more concerns when using low sulfur fuels for HFO-designed machinery. Most of them are well understood as the subject has been researched well since the introduction of SECA regulations:

- ***Lower acidity:*** *Part of the sulfur is converted into sulfuric acid (H2SO4) during combustion. Using common cylinder oil with a high alkali base number will lead to wear.*
- *The use of ultra-low sulfur fuels requires special consideration because properties vary depending on supplier and there may be incompatibilities with HFO, MDO or other ULSFs.*
- *The much lower viscosity and lubrication can cause abnormal wear.*

Monitoring the Cap

Enforcing the sulfur cap in international waters might be challenging. If the regulation is to be taken seriously then enforcement and control must occur, otherwise there is no incentive to carry out the regulation. The most likely solution will be the introduction of emissions recording and measurement equipment.

Surveillance close to the outside borders of SECA zones will be less troublesome, because technological measurements inside the zones already exist for the purpose of supervising them. Authorities c an leverage a number of tools like airborne surveillance are used to determine vessel emission levels and could be applied further outside of current zones.

These airplanes use antennas to "sniff" emissions from nearby vessels giving hints to Port State Control officers about which vessel to enter. The advantage over optical systems like differential optical absorption spectroscopy (DOAS) is that the system can be deployed at night or on cloudy days.

The PSCs of Paris MoU and Tokyo MoU have already announced an increase in focus on sulfur limit regulation and plan a major campaign for 2018. The campaign indicates that embarked officers will examine the vessel to determine whether it has remained compliant. Realistic long-term surveillance options for international waters have not been revealed. So far PSC has no power outside its own waters and could only inform the flag state about sulfur limit exceedance.

The idea to obtain emission data by multiplying fuel emission factors by vessel journey data is interesting. This is much more an organizational than technological challenge. Bunker agents would need to deliver precise data about the ship and the type of bunker sold, requiring in turn additional monitoring systems.

This could be calculated by combining available positioning data (perhaps AIS), with other available data sources and operational data from the ship. Monitoring and storing the data of wash water discharge and emission exhaust from scrubbers within the VDR would allow meaningful combination with GPS data, creating a system which could be used to determine when, where and how much SO2 a vessel emits.

The only possible way to make absolutely certain that vessels are not switching back to HFO would be to disallow bunkering of HFO if a vessel does not possess a cleaning system. Until a functioning control system is up and running, many will try to exploit loopholes. MARPOL Annex VI states that the vessel *"shall not be required to deviate from its intended*

voyage or to delay unduly the voyage in order to achieve compliance." The concern remains that vessels will bunker on purpose in these harbors where only HFO is available.

Less widely reported is the fact that this phrase applies only if the ship can present a record of actions taken to achieve compliance and evidence provided "…that it attempted to purchase compliant fuel oil in accordance with its voyage plan and, if it was not made available where planned, that attempts were made to locate alternative sources." Furthermore, vessels need to notify the competent authority that a compliant bunker was not available. These measurements minimize possible abuse of the exemption.

Production Challenges

The distribution of suitable fuels is the main challenge. It appears that many ports will not be able to deliver LSFO in satisfactory amounts by 2020. The International Bunker Industry Association (IBIA) warned that many ports will not be able to replace the current HFO stocks with LSFO in time. These ports would then need to import bunker fuel from distant refineries. In return, this would lead to non-competitive bunker prices and additional environmental pollution due to transport, creating winners and losers on the bunker market, where the winners are those who are able to satisfy demand for a good price.

Especially jeopardized are those ports which relay exclusively on local refineries. If there were to be regional imbalances, bunker markets might shift towards regions that can provide compliant fuels.

Refiners are moving slowly to satisfy demand despite the fact that four years remain, and considering that the sulfur limit has been known since 2008. IBIA pointed out that before the due date, few vessels will be using the more expensive refined fuels. Most will only switch when necessary, potentially leading to a situation where the "world fleet" tries to switch overnight. Such a spike in demand could not be handled.

Refiners are especially concerned about who will buy high sulfur fuel after 2020 and how to expand the production of LSFO. Demands could be met by blending bunkers with distillates to create HFO with S ≤ 0.5% or by processing away sulfur. The last option requires additional production steps and possibly, additional equipment. To blend bunkers, low sulfur distillates are mixed with high sulfur residuals to create the required sulfur content. The used distillates are lost for the market. Both options will have residual "left-overs" from production.

In addition, the maritime industry will start to compete with other shore-based industries by acquiring higher distilled fuels. Refiners will then sell to the market offering the greatest returns.

How big is the shift?

The IMO study sets the high sulfur fuel oil demand of 2012 as its base for its calculation, it was 228 million metric tonnes. In 2020, this could sink to 36 million tonnes. Refiners would sell ~85% less high sulfur fuels to the maritime industry than they did in 2012. The IMO concludes that these oils will be a niche product, only used by ship operators who decide to install scrubbers. By 2020, more than 3,800 ships are expected to use such cleaning technology.

This is basically a swap, because vessels will continue to use fuels. The demand for total marine heavy fuel oils containing less than 0.5% sulfur is expected to rise to 233 mt. Adding the anticipated 36 mt of high sulfur oils shows that the bunker market is expected to be bigger in 2020 than it was in 2012.

How big is the market impact?

Since the end of the 1980s, global demand for residuals has been sinking continuously, despite maritime demands for HFO rising continuously. In 1990, almost 13.3 million barrels per day (BPD) of residuals were produced. In 2012, production and demand were both four million BPD lower.

On average, the maritime industry requires roughly 35% of the global residual fuel production for HFO, the other 65% is consumed by shore-based industries such as power plants.

Considering the number of vessels which are expected to continue burning HFO, the total global demand for residual fuels will be "only" ~30% lower than it was in 2012. A part of the 30% overhead could be used within new-build coking units. This would ease the demand for distillates to blend bunker, although it seems unlikely that there will be a sufficient number of new coking units by 2020.

Dealing with an HFO surplus and avoiding market disruptions for non-maritime HFO demands is the real challenge, not producing enough S ≤ 0.5 fuels. This matters because it shows that maritime bunkers are only a share of the refiner's residual fuel oil customer portfolio.

The Author

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MARITIME LOGISTICS
PROFESSIONAL

A Closer Look

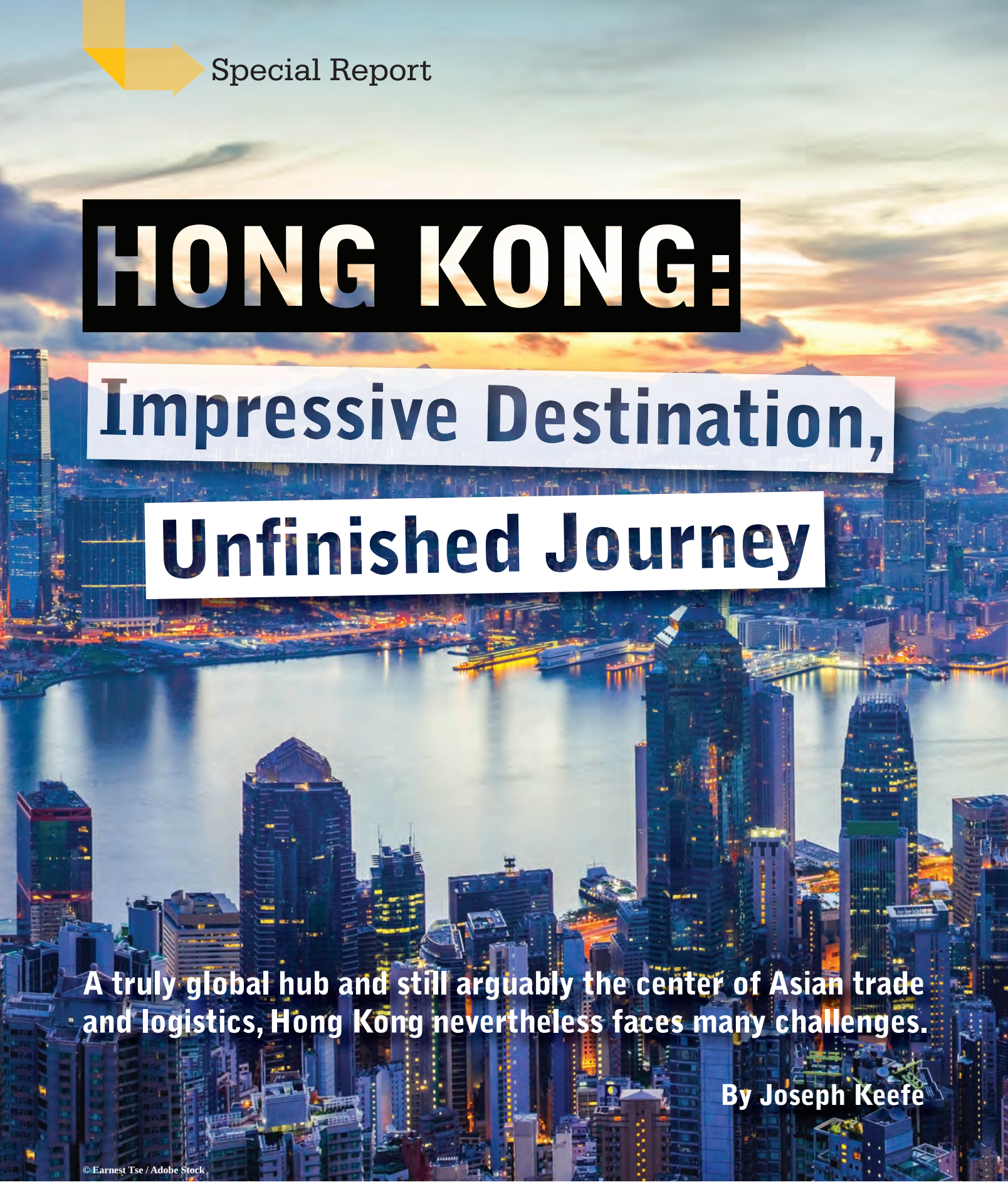
PORTS: **Hong Kong**

HONG KONG:

Impressive Destination, Unfinished Journey

A truly global hub and still arguably the center of Asian trade and logistics, Hong Kong nevertheless faces many challenges.

By Joseph Keefe



… the Port of Hong Kong saw in 2016 its lowest TEU throughput for more than a decade. Not even a late surge in throughput in December could prevent the less-than-rosy results. By the numbers, Hong Kong saw a monthly 1.8 million TEU, 14% increase from the same period just one year ago. But, 2016's totals (19.6 million TEU) represented an annual drop of 2.5%. More worrying is that some of these individual terminals experienced as much as a 20 percent surge in December, but much if not all of that was a function of the Hanjin 'hangover.'

A weeklong visit to Hong Kong reveals many things about this exotic city with its centrally located port and logistics hub. With more than 7 million residents tightly packed into 427 square miles, Hong Kong ranks as one of the most densely populated places on earth. It is also one of the busiest, and its trading economy is the world's 8th largest with international trade facilitated by the world's 5th busiest container port, the world's number one air cargo destination and a strong base of shipowners, cargo owners and traders.

The autonomous, Special Administrative Region of the People's Republic of China also boasts many other advantages that have attracted a strong maritime presence. Over time, Hong Kong has seen a steady expansion of its maritime services cluster, including such businesses as ship management, ship broking, ship finance, maritime insurance and law. All of that, in turn, has produced enviable economic benefits in way of local job opportunities and a high standard of living.

With 340 container liner services per week connecting to about 470 destinations worldwide, the port boasts nine container terminals with a total of 24 berths at Kwai Chung and Tsing Yi Island, all operated by private entities. Exports represent a relatively small portion of Hong Kong's box traffic.

Like Charleston, South Carolina, one of Hong Kong's biggest reasons for optimism is its geographic position. In October, for example, local South Carolina Port Director Jim Newsome told ***MLPro***, "Right now, we think the Southeast is the best place to be in the port business because we have an import growth based on population and export growth and expanding manufacturing." Similarly, Hong Kong is situated just four hour's flight from virtually all of Asia's key markets and within five hours of half of the world's population. For comparison, though, you can fit five 'Charlestons' into the port of Hong Kong, with room to spare.

There's more: Hong Kong today hosts the world's fourth largest shipping register, trailing only more recognizable players like Panama, Liberia and the Marshall Islands. Almost 2,500 vessels were under Hong Kong flag by April of last year, representing a whopping 104 million gross tons, and more than 150 million deadweight tons (DWT) – about 8% of the world's total. What's not to like?

Real Concerns

As it turns out, there is ample reason for concern. For example, the Port of Hong Kong saw in 2016 its lowest TEU throughput for more than a decade. Not even a late surge in throughput in December could prevent the less-than-rosy results. By the numbers, Hong Kong saw a monthly 1.8 million TEU, 14% increase from the same period just one year ago. But, 2016's totals (19.6 million TEU) represented an annual drop of 2.5%. More wor-

Kwai Tsing Container Terminal

"A local green initiative, looking to cut stack and industrial emissions in the port of Hong Kong has 17 Hong Kong major freight liners have signed up the Fair Wind Charters (FWC), a voluntary commitment to switch from high-sulphur bunker oil to 0.5% sulphur diesel when berthing in Hong Kong. FWC is the world's first shipping-industry led fuel switching initiative. That's nice, but it also costs money and perhaps gives an (unfair) advantage to other regional ports – Mainland China, for example, where the air quality is notoriously bad – and where they don't necessarily practice similar environmental stewardship."

Photos: Information Services Department of Hong Kong SAR Government

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Of bigger concern is the close proximity of another seven of the world's top 10 boxports – all of them located next door in Mainland China. Not too long ago, none of those neighboring ports could boast those kinds of numbers. Such has been the explosive regional growth, some of which came at Hong Kong's expense.

Local stakeholders are only too aware of the situation; some worried and others, who have operations in more than one area port, philosophical about the changing logistics trend. As for the Hong Kong government, they are hard at work making sure that infrastructure is not the reason that traffic continues to decline, if only slightly.

Looking Ahead, Not Behind

Leveraging a deep-water, silt-free natural harbor located close to the Chinese mainland, Hong Kong's evolution into a dominant Asian sea transport hub isn't surprising. But just because Hong Kong Port was the world's fifth busiest container port in 2015, handling 20.1 million TEUs, doesn't mean it can sit on its hands. Indeed, 2015 container traffic was down 9.7% from 2014.

Nearby Shanghai, Singapore, Shenzhen and Ningbo-

Zhoushan all boast bigger numbers, and the mainland Chinese ports are expanding quickly. For its part, Hong Kong hangs its hat in part on its renowned efficiency and the fact that all container terminals are privately owned and operated. Periodic physical enhancements and new cargo techniques have markedly raised local handling efficiency.

Containers are not Hong Kong's only seaborne trade commodity. During 2015, Hong Kong handled 257 million tons of seaborne and river cargo, of which 70% was carried by ocean-going vessels. This includes break bulk, oil, gas, grain, minerals and timber. More than one-half of that, significantly, was transshipment cargo, much of which eventually goes to the Chinese mainland. And, as those Chinese ports get more efficient, it is likely that some of this transshipment cargo will go away.

At the same time, regional, competing ports have developed rapidly in recent years. Shanghai, for example, is the world's

Comparison with Major Container Ports of the World ('000 TEUs)

Port	2005	2009	2010	2014	2015	High Year	11-Year Change	PCT Change
Shanghai	18080	25002	29069	35285	36537	36537	+18457	+ 102%
Singapore	23192	25867	28431	33869	30922	33869	+10677	+ 46%
Shenzhen	16200	18250	22510	24037	24205	24205	+8005	+ 49%
Ningbo-Zhoushan	5210	10503	13147	19450	20627	20627	+15417	+ 296%
Hong Kong (#)	22602	21040	23699	22226	20073	24494	+1892	+ 8%
Busan	11843	11980	14194	18683	19467	19467	+7624	+ 64%
Guanzhou	4680	11200	12546	16389	17590	17590	+12910	+ 276%
Quingdao	6310	10262	12012	16580	17436	17436	+11126	+ 176%
Dubai	7619	11124	11600	15249	15592	15592	+7973	+ 105%
Tianjin (*)	< 4000	8704	10086	14061	14111	14111	+10111	+ 252%

Source: Marine Department, government of Hong Kong.

(*) estimated Tianjin figure for 2005 / (#) Hong Kong high number occurred in 2008.

Photos: Information Services Department of Hong Kong SAR Government

busiest seaport, while Shenzhen was the world's third busiest port, with 24.2 million TEUs handled in 2015. The Port of Ningbo-Zhoushan surpassed Hong Kong to become the world's fourth busiest in 2015, with its throughput increasing to 20.6 million TEUs. Hong Kong meanwhile showed the least amount of growth over the course of the past 11 years and is one of only two top 10 ports to show a decline in TEU throughput from its best year. Singapore was the other.

A local green initiative, looking to cut stack and industrial emissions in the port of Hong Kong has 17 Hong Kong major freight liners have signed up the Fair Wind Charters (FWC), a voluntary commitment to switch from high-sulphur bunker oil to 0.5% sulphur diesel when berthing in Hong Kong. FWC is the world's first shipping-industry led fuel switching initiative. That's nice, but it also costs money and perhaps gives an (unfair) advantage to other regional ports – Mainland China, for example, where the air quality is notoriously bad – and where they don't necessarily practice similar environmental stewardship.

The (Modern) HK View ...

As part of MLPro's one week visit to Hong Kong in late November, a lengthy briefing was presented by Modern Terminals (MT) and its local General Manager of Strategy & Business Development, Gavin Dow. MT moved 5 million TEU's at its Hong Kong berths in 2014, or roughly one-quarter of Hong Kong's throughput. In fact, MT's local throughput has most recently been up, whereas Hong Kong throughput as a whole has been moving south. The 10th largest port operator in the world, MT has been in Hong Kong since 1972, but also operates terminals on the mainland. And, that last factoid may be particularly important.

MT is faring well in a less-than-favorable boxship environment, but significant challenges remain for local terminals, and the port that hopes that their market share will rebound to previous levels. One of those challenges involves local investment – both in terms of money and land. And, while the terminals themselves have made a lot of investment in last few years, the government has not necessarily matched that effort. For one thing, the terminals are 'land constrained' and they need as much as another 70 hectares. To be fair, the government is trying to solve this issue, and negotiations were underway to do just that in the latter part of 2016.

The land issue is particularly important because container handling yards – like shipyards – need ample 'laydown' space in order to operate efficiently and reduce container 'dwell time.' And, said Dow, the combined [local] maximum operating capacity is around 23-24 million TEU's. As a general rule of thumb, 80% of maximum capacity is also considered the point of "maximum efficiency." With the cumulative Hong Kong port throughput bumping up against 20 million TEU's annually, some stakeholders consider the port to be at maximum efficiency already. For its part, MT is even looking at

multi-level truck parking as a viable solution.

Also pushing Hong Kong to keep its foot on the gas pedal is the significant improvement in efficiency at ports like Shenzhen, where local operators are closing the gap quickly. As more countries look to privatize existing port operations and develop new ones, the development of ports on the Chinese mainland and the wider region has challenged Hong Kong's local supremacy. Actually, Hong Kong port operators are already active there. Modern Terminals is one of them. Investing in and operating several container terminals in Shenzhen, and the Yangtze River Delta, MT can afford to hedge its bets when thinking about regional business.

Hard at work at improving its already impressive Hong Kong presence and efficiencies, MT does the exact same thing on the mainland. And, improvements are arguably easier to see there than they are at a mature terminal in Hong Kong already operating at an enviable clip. Still another Hong Kong terminal operator, Hutchison Port Holdings (HPH) Group, has an impressive network that leverages 48 ports in 25 countries, and handled in excess of 80 million TEUs worldwide in 2015.

Helping the local case is the fact that Hong Kong is a 'free' port. Even so, some Chinese ports are operating at half the price of Hong Kong, but, says Dow, "Sticker price isn't the only variable." Nevertheless, BIMCO, the world's largest international shipping association, said recently that container shipping lines received an average rate 7% ($42 USD) lower in 2016 than in 2015. Hence, while price isn't the only variable, it remains unquestionably important.

MT uses every tool at its disposal in an effort to improve its performance, including the switch to the Navis terminal operating software (TOS) software from an in-house proprietary system. Dow said in November, "Some business went away in 2014, but some came back, especially 2016. Navis was a big part of that – with demonstrated efficiencies on throughput." Beyond this, he said, midsize terminals like MT are looking to collaborate with others; sharing data and safety stats as a way to improve business practices.

In the meantime, and for shippers who care, MT's Hong Kong operations are all ISO 14001 certified, utilizing environmentally friendly all-electric and/or LNG equipment. Last, but certainly not least, is talk of the relaxation of Mainland China's cabotage rule for mainland commerce. If that happens, the exodus of cargo to mainland ports could accelerate. That's anything but certain, but local Hong Kong terminal operators and the local government itself are watching that development closely.

The Good News

Like any other container port, Hong Kong and its private operators have a keen eye on infrastructure, especially when

Kwai Tsing Container Terminal

Photos: Information Services Department of Hong Kong SAR Government

it comes to beefing up berths to support the new post-Panama reach cranes. Those improvements continue at a breakneck pace because Hong Kong's chief advantages leverage not only its naturally deep harbors and centrally located geography, but also finely honed efficiencies that still outpace its now bigger rivals.

In other sectors, the Kai Tak Cruise Terminal entered service in June 2013 with rooftop and tourism-related facilities for visitors and locals, and providing embarking and disembarking services for cruise passengers. The terminal's capacity of customs, immigration and health quarantine operation clearance can serve 3,000 passengers per hour. That sector has doubled its volume in terms of both passenger throughput and ship calls in only three years. Local officials are doubling down on making sure that trend continues.

Separately, and critical to the container business, the Hong Kong-Zhuhai-Macau Bridge (HKZMB), a large-scale cross-border infrastructure linking the three places, is expected to be completed in 2017. Cargo movement between Hong Kong and western Pearl River Delta will be further enhanced, eventually reducing local road traffic, air emissions, and shortening trucking transits to and from the local container terminals from today's 4 hours to just 45 minutes. When finally realized, those are real gains.

A planned third runway for the world's busiest air freight hub, nominally unrelated to maritime commercial business, will solidify Hong Kong's position as the world's number one air freight hub. A tour of Cathay Pacific's amazing air cargo freight handling center at the airport revealed enviable logistics technology and efficiencies. It is here where the maritime cluster could take some lessons.

No less important is China's Belt & Road initiative, an effort that envisions the integration of the region into a cohesive economic area through infrastructure and the broadening of trade. It is something that will eventually impact the local maritime cluster; to what extent, that remains to be seen.

Conventional wisdom says that Hong Kong's market share of maritime traffic (percent of regional trade in TEU's) will likely continue to decline, even if its actual numbers begin to rise. That's not necessarily bad news. Every port will eventually reach maximum capacity. As the global demand for transport increases, there will be plenty of TEU's to go around for all ports. And, it would be a mistake to assume that Hong Kong won't continue to be a key, if not the central hub in the region. They will.

Hong Kong Harbor

Cruise Destination

Hong Kong

*All images courtesy: "Information Services Department of Hong Kong SAR Government"

A growing cruise market for Hong Kong is part of a carefully crafted business plan aimed at augmenting the port's regional status as both an air and ocean logistics hub. That local planners are succeeding shouldn't be any surprise.

By Joseph Keefe

Hong Kong's impressive logistics hub(s) are set to get even better. Better known as the world's number one air cargo hub and the world's fifth busiest container port – moving more than 20 million TEU's – Hong Kong is also the world's 8th largest trading economy. This eclectic and remarkably diverse city located strategically in the heart of the Pacific intermodal equation is also home to a busy cruise sector, one that is set to expand even further in the near future. That's because this tightly packed, 427 square mile autonomous territory offers excitement, easy access to other exotic Asian locales and the allure of an already efficient ocean maritime system that has room to grow.

Seizing the Moment

To seize the opportunity brought about by the rapid development of cruise tourism in the region, the Hong Kong Government, together with the Hong Kong Tourism Board and the terminal operators, has spares no effort in promoting the development of cruise tourism in Hong Kong through active promotion to activate the overseas source markets, driving more cruise deployments to Hong Kong, as well as through the enhancement of infrastructures and facilities, including developing the Government-owned Kai Tak Cruise Terminal. Growth over the course of the past four years has been particularly impressive.

A spokesman from the Hong Kong tourism Commission told ***MarLoPro*** in November, "We indeed see a growing trend in the number of ship calls at Hong Kong and will continue with our efforts to sustain the growth momentum in the coming years." He pointed to the numbers and impressive cruise brands that now have presence in Hong Kong. These include Royal Caribbean Cruises Limited, Genting Hong Kong, Costa Cruises as well as Princess Cruises, to name a just a few. He adds, "Looking at the Kai Tak Cruise Terminal alone, we see an increasingly diversified range of cruises that call at the Terminal, with 9 brands in 2015 to 18 in 2016."

There are two cruise terminals in Hong Kong, namely the Ocean Terminal in Tsim Sha Tsui and the Kai Tak Cruise Terminal near Kowloon Bay. The new Kai Tak Cruise Terminal was commissioned only in June 2013, and has two berths which can allow simultaneous berthing of two of the largest cruise ships in the world (GT of 220,000 and approximately 360 meters LOA). Today, the terminal's maximum draft is an impressive 13 meters (42.5 feet).

Victoria Harbor is famous for being wide and deep, without any air draft limit, meaning that cruise ships can easily berth at any of the two cruise terminals of Hong Kong without limitation of heights.

Hong Kong Cruise Traffic at a glance ...

YEAR	SHIP CALLS	PASSENGER THROUGHPUT (*)
2013	89	191,062
2014	140	366,981
2015	142	452,768
2016	193	466,659

(*) includes arrivals and departures / source:

Selling Hong Kong

Located at an advantageous geographical position, Hong Kong boasts a comprehensive aviation network, and fully one-half of the world's population can be reached in just five hours' flying time. The Tourism Commission spokesman said, "We are also at the doorstep of the enormous source market in mainland China and we have an increasingly huge local source market. Together with the excellent infrastructure, Hong Kong can be easily reached by cruise visitors from all over the world. Such a strategic location also means that Hong Kong can offer diverse choices for cruise itineraries."

Like New Orleans in the United Besides, the professional tourism trade is Hong Kong's great asset. They are experienced in providing support services to cruise companies and passengers to international standards. Together with the existing tourist offerings and attractions, Hong Kong is an ideal cruise destination where cruise passengers can experience the unique culture of 'east meets west.'

Building on the Future

More importantly, the Government, together with the Hong Kong Tourism Board, is committed to facilitating the cruise lines in making deployments in Hong Kong and maintains close contact with the cruise tourism trade to provide necessary support to them. In fact, the Hong Kong Government has been investing in different public works projects to enhance the overall infrastructure and transport network in Hong Kong. As far as cruise tourism is concerned, the Government, together with the cruise terminal operators, are committed to providing excellent services and supporting facilities for cruise lines and passengers.

The investment in the development of the new Kai Tak Cruise Terminal, as an example, is indeed just one of these strategic moves. After the commissioning of the Kai Tak Cruise Terminal in June 2013, the Hong Kong Government and the terminal operator have been continuously working on enhancing the services and facilities there. Beyond this, a number of mega-size infrastructure projects which connect people from all over the world are ongoing. The Hong Kong-Zhuhai-Macau Bridge, the Guangzhou-Shenzhen-Hong Kong Express Rail Link and the Third Runway System of the Hong Kong International Airport are all projects that will eventually bring more people to Hong Kong, more efficiently and in a faster manner.

Local facilities include public transport services such as public bus and mini-buses, ferry services as well as special shuttle bus services. Moreover, the Kai Tak Development area, at which the Terminal is situated, is undergoing massive development with new roads and facilities such as sports stadium under planning or constructions.

With almost 25% of the local economy driven by logistics, and much of that in the local maritime cluster, it shouldn't be much of a surprise that gearing up for more and bigger cruise ships is just another day at the office for local planners. Home to the world's 4th largest ship register and with Hong Kong-based shipowners controlling as much as 9 percent of the world's tonnage, a vibrant group of maritime law, marine insurance and ship finance professionals contribute much more to the global shipping picture. Hong Kong's already enviable cruise business is about to join them at the grownups table. **www.ktd.gov.hk/eng/**

Hong Kong

is commonly referred to as 'the Hong Kong Special Administrative Region of the People's Republic of China.' An autonomous territory on the Pearl River Delta of East Asia, it is also one of the world's busiest trading hubs. Arguably, it remains as Asia's most important. As such, the United Nations Conference on Trade and Development (UNTAD) keeps careful statistics on the region. As a logistics trading hub – both in terms of ocean and air cargo – it has no rival. On the water, however, Hong Kong finds itself today looking over its shoulder at rapidly expanding and modernized ports just around the corner in Mainland China. So, what does the 5th busiest port in the world, coupled with the number one global destination for air freight, look like?

Hong remains a region in flux and one of contrasting statistics. For example, transport exports fell almost 7% in 2015, while the national fleet grew by a similar margin. Total merchandise trade also fell (-2.6%), mirroring a worrying trend that has persisted for the past four years running. Container port throughput reached a whopping 22,300,000 TEU in 2015, but that number is also down almost 2.5 million TEU's from its high water mark in 2008. Nevertheless, the 11-year trend shows an 8% increase in annual TEU throughput; impressive unless you compare it to other nearby ports which boast far larger growth patterns. Actually, and in less than ten years, Hong Kong has slipped from first to fifth in terms of total TEU throughput.

As impressive as Hong Kong's trade numbers are, it's national fleet and the vessels controlled by Hong Kong firms and citizens is equally notable. Bolstered by a strong legal system and deep roots in maritime law and arbitration, its maritime services cluster also features robust ship management, ship broking, finance, and maritime insurance sectors. With a backdrop like that, it isn't surprising that Hong Kong hosts the world's fourth largest shipping register. Almost 2,500 vessels were under Hong Kong flag last year, representing 104 million gross tons (2016), and more than 150 million deadweight tons. And, if Hong Kong's local container throughput isn't growing, its control of shipping assets (up a whopping 242% since 2005), certainly is.

Sometimes forgotten, always growing: Hong Kong's cruise traffic also represents a boon to the local economy, and while it remains only a small part of the local maritime footprint, local authorities are actively promoting the eclectic and unique destination as a place that should not be missed. The local terminal capacity of customs, immigration and health quarantine operation clearance can serve 3,000 passengers per hour. *Travelers are listening:* That sector has doubled its volume in terms of both passenger throughput and ship calls in only three years. Local officials are doubling down on making sure that trend continues.

Hong Kong SAR, By the Numbers in 2015:

Population: 7.288 Million	Container Calls Per Week: 340	Merchandise trade: 1,070,023 Million USD
Country Size: 427 square miles	Global Trade Destinations: 470	Hong Kong Ship Register: World's 4th Largest
GDP: 307,017 Million USD	No. Container Berths: 24	National Flag: 150,321 (1,000's) DWT (8.6% global fleet)
PCT GDP Driven by Logistics: 25	No. Container Terminals: 9	HK Ownership: 80,153 (1,000's) DWT (4.6% global fleet)

Photo: Modern Terminals

Hong Kong SAR, By the Numbers in 2015:

Country	(exports, millions of US$)
China:	287,482
United States:	44,347
Japan:	15,945
India:	13,272
Viet Nam:	9,928

Hong Kong's National Fleet (carrying capacity thousands DWT)

	2005	2010	2014	2015
Total Fleet	43,958	74,514	140,976	150,322
Oil Tankers	11,301	18,550	26,406	29,619
Bulk Carriers	26,546	40,958	86,772	88,942
General Cargo	2,303	3,754	2,847	2,810
Containerships	3,433	10,160	21,542	25,330
Other	375	1,092	3,408	3,620

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(*) includes arrivals and departures
Source: UNCTADstat (http://unctadstat.unctad.org)

Caribbean Cruise Crescendo:

MSC Cruises may well be the firm to watch as it all unfolds.

Photo: MSC Cruises

It's only just begun.

Photo: Port Everglades

Allure of the Seas, the second largest cruise ship in the world.

By Rick Eyerdam

Photo: Royal Caribbean

Cruise port of Miami

Cruise Port of Miami (CREDIT: PortMiami)

The boost in luxury vacation travel that propelled the cruise industry in 2016 to new passenger records is just a whisper compared to what will come next, with over 12 new giant cruise ships in the yard or ordered, entire fleets redesigned and refurbished, ships specially designed for Oriental and Arctic travel and even new island destinations carved from the sand.

The Cruise Lines International Association (CLIA) said the number of global cruise passengers increased by 4.5% to 24.2 million in 2016 and cruise operators will launch 26 new ocean and river vessels in 2017. Last month, Disney Cruise Line ordered two ships for delivery in 2021 and 2023. Celebrity, Virgin, Costa, Royal Caribbean, Viking, Crystal and Regent also already have ships on order for delivery in 2020 and beyond.

First Things

Two cruise ports that dominate the domestic cruise industry, Port Miami and Port Everglades, have spruced up existing terminals and are planning new berths to accommodate cruise line giants that are now or soon coming to call. Carnival Corporation and Port Everglades recently extended their agreement to 2030 that includes preferential use of five terminals, including recently renovated terminals and berths to better serve passengers sailing on seven of company's global cruise line brands.

The addendum builds on the landmark 15-year agreement reached in 2010 with the Broward County Board of County Commissioners and furthers Carnival Corporation's commitment to Port Everglades, which overall hosts more than 3.6 million multi-day cruise passengers a year. As part of the addendum, Carnival Corporation will have preferential use of Cruise Terminal 4, which reopened last year after $24 million worth of renovations and upgrades designed for greater efficiency and guest convenience.

Additionally, the port is currently undertaking an estimated $13.6 million slip extension project on Terminal 4, expected to be complete by mid-2017 that will lengthen the slip to accommodate larger cruise ships. As part of the long-term agreement, the company also has preferential use of three additional terminals, Cruise Terminals 2, 21 and 26, along with one additional terminal. This provides five terminals in total for Carnival Corporation to serve its guests who visit Fort Lauderdale as part of their cruise vacation.

"Carnival Corporation is a critical Port Everglades partner, and its many unique cruise line brands offer guests sailing into and out of our port with a wide variety of cruise experiences and itineraries," said Steve Cernak, chief executive and port director of Port Everglades. "Carnival Corporation has a strong, long-standing presence in the Broward County community, and the additional five years included in the agreement reinforces that commitment."

> *This is a very exciting time for MSC Cruises as we continue our expansion in the North American market. From working together with Miami-Dade County to provide a truly world-class experience for cruisers at Terminal F to committing our second and most innovative ship yet to the U.S. market, we are thrilled for the road ahead.*
>
> *– Roberto Fusaro, president of MSC Cruises USA*

Photo: MSC Cruises

Photo: MSC Cruises

The company will add a second ship from its Carnival Cruise Line brand, Carnival Splendor, to sail from Port Everglades during the 2017 summer season. In addition to Carnival Cruise Line, six more of Carnival Corporation's 10 global cruise line brands currently carry nearly a million and a half passengers to and from Port Everglades each year. These include Holland America Line, Costa Cruises, Cunard Line, P&O Cruises UK, Princess Cruises and Seabourn. The seven Carnival brands and 28 different ships account for a combined average of more than 300 calls at Port Everglades each year.

As part of the original agreement, the port undertook a $54 million cruise terminal renovation project to make significant improvements to four existing cruise terminals to accommodate ships from Carnival Corporation's fleet of global cruise line brands. Enhancements made as part of the project included features to enable simultaneous embarkation and debarkation processes, including two passenger loading bridges, separate and larger baggage halls and improved ground transportation areas. And as part of the extension, Carnival Corporation and Port Everglades will engage in discussions to examine the opportunity for possible further improvements to Cruise Terminal 21 to accommodate Carnival Corporation's newest class of ships.

Port Everglades will also welcome the return of Crystal Cruises' luxury ships beginning in October 2017. "Fort Lauderdale is an ideal fit for our ships, itineraries and discerning guests, with its close proximity to an international airport and reputation for outstanding service that mirrors Crystal's own," said Crystal President and CEO Edie Rodriguez. "With these things in mind, we are relocating select fall sailings and look forward to working with Port Everglades to expand our itineraries in this market."

Crystal Serenity and Crystal Symphony will have a total of eight sailings to and from Port Everglades beginning October 2017.

PortMiami

At PortMiami, the $1.113 million Port tunnel and the deepening to 52 feet and widening of its channel set the stage for newer and larger cruise ships as well as container vessels. The new port tunnel speeds an estimate 4.9 million annual passengers to the PortMiami cruise terminals like never before and the channel widening, accomplished at a cost of $205.6 million will permit any size vessel to maneuver with ease.

With that accomplished, Royal Caribbean Cruises began building a new cruise terminal on leased PortMiami land, intended to serve as homeport for Royal Caribbean International ships. Royal Caribbean Cruises Ltd., the world's second-largest cruise brand, is headquartered in Miami. But it has berthed its largest ships at Port Everglades, not PortMiami, because Miami's seaport could not accommodate their size. The construction of its own terminal would bring those ships to Miami. The partnership, which included a $200 million investment by RCL, will again make PortMiami Royal Caribbean's largest cruise port in the world.

Royal Caribbean Cruises would guarantee Miami-Dade County more than $140 million in dockage fees for its present cruise terminal at PortMiami for the next ten years – more than $100 million above the present guarantee for that period. The existing agreement for the present terminal space dedicated to Royal Caribbean, Terminal G, was to expire Sept. 30, 2021. The amendment to the agreement, approved by county commissioners who operate the port extended an agreement to Sept. 30, 2026. During that period, the cruise line would pay the county from $10.5 million in fiscal 2016 to $14.8 million in fiscal 2026.

The amendment would also provide for one five-year renewal period starting in 2026, based on mutual agreement. The county would be guaranteed $100 million from Royal Caribbean over that five-year renewal period, based on an annual

guarantee of 750,000 passenger moves. In addition, Royal Caribbean has committed to spending an extra $20 million to build a 20,000-square-foot innovation lab at its corporate headquarters in PortMiami.

And PortMiami will spend as much as $30 million rejuvenating it's Terminal F to accommodate MSC's current megaships and two more that are due to arrive by 2020. The project will "not only rejuvenate and update the existing terminal to provide new contemporary amenities," but will also expand the terminal through the construction of a new building in order to house both MSC Cruises' next-generation cruise ship MSC Seaside, as well as MSC Divina, which is currently sailing year-round from PortMiami, according to a release from MSC Cruises.

"This is a very exciting time for MSC Cruises as we continue our expansion in the North American market. From working together with Miami-Dade County to provide a truly world-class experience for cruisers at Terminal F to committing our second and most innovative ship yet to the U.S. market, we are thrilled for the road ahead," said Roberto Fusaro, president of MSC Cruises USA.

Along with PortMiami, MSC Cruises has been actively in-

volved in the entire process of designing the new cruise terminal, helping ensure that the newly renovated and expanded terminal will meet the needs of its guests and result in an overall quick and seamless guest experience. Enhancements to Terminal F at PortMiami will include:

- ***Significantly expanded waiting area with seating for up to 1,500 guests;***
- ***Expanded and improved VIP private waiting area for MSC's***
- ***Separate dedicated waiting areas and lines to accommodate MSC Black Card members and guests booked in the Aurea Experience who receive priority embarkation;***
- ***Smoother disembarkation process with a more flexible and efficient baggage claim area; and***
- ***Facility advancements to accommodate the "smart ship technology" that will be available on MSC Seaside as it relates to the embarkation and disembarkation process.***

The terminal is expected to be ready by December 1, 2017, just prior to MSC Seaside's arrival in PortMiami on December 21, 2017.

Photo: Port Everglades

"The cruise industry is responding to global demand and we are highly encouraged by both the short-term and long-term outlook. From technological advancements and deployment of new ships to new ports and destinations around the world, the industry continues to respond to desires of today's travelers resulting in steady growth and strong economic impact around the world.

– Cindy D'Aoust, Cruise Line International Association's (CLIA) president and CEO

Stronger than ever

"The cruise industry is responding to global demand and we are highly encouraged by both the short-term and long-term outlook," Cindy D'Aoust, Cruise Line International Association's (CLIA) president and CEO, said in a statement in December. "From technological advancements and deployment of new ships to new ports and destinations around the world, the industry continues to respond to desires of today's travelers resulting in steady growth and strong economic impact around the world."

According to CLIA, worldwide spending generated by the cruise industry reached $117 billion in 2015. The equivalent of 956,597 full-time employees earned $38 billion last year — an amount that fell year-over-year even as the number of workers increased. Last year's projection said that 939,232 employees had earned $39.3 billion in 2014 and the total economic impact for the industry was $119.9 billion.

And with emerging markets bringing in more travelers, one might expect competition within the industry to be on the rise. But insiders say that's just not the case. "I think you'll hear this from every single one of us cruise line executives, but there really is a cruise line for everyone and we shouldn't compete against each other," Holland America Line vice president of North American sales Eva Jenner recently told an industry gathering. "We're really competing against land based vacations." Carnival Corporation president and CEO Arnold Donald agreed, adding, ""Our goal is to introduce more people to the great value and great experience of a cruise vacation. We see our competition as land-based vacations, not other cruise lines."

A Marketing shift

Industry practice might argue against that statement however as the lines seek to retain clients and attract Millenials. Norwegian Caribbean is among several that has shifted its branding. The cruise line has dubbed the new standard 'The Norwegian Edge.' "We will take every ship, aside from new ships we've just delivered, through this new Norwegian Edge experience in a dry-dock by the end of 2017 except for one ship," said Andy Stuart, Norwegian's president and chief operating officer.

The changes to the ships that will result in a much more elegant experience for guests across an entire fleet, he said. "We do believe we can have a very consistent experience across our brand in spite of the difference in scale between some of the ships." Norwegian expects the enhancements to boost repeat business.

Already refurbished are Pride of America and Norwegian Sun and; Norwegian Dawn in summer 2016. Norwegian Spirit, Norwegian Sky and Norwegian Pearl are scheduled for winter 2017; and Norwegian Jade in spring 2017. Norwegian Jewel will receive them in 2018, Stuart said. Great Stirrup Cay, NCL's private Bahamian island retreat is receiving luxury cabanas for rent, new dining outlets, bars and lounges and an exclusive experience for guests booked in luxury accommodations. New experiences are yet to be revealed for travelers visiting Norwegian's newest private island, Harvest Caye in Belize, set to be completed by January. "We're putting a lot more into it than originally conceived," Stuart said.

MSC: on the move

MSC Cruises is moving away from its prior emphasis on "The Mediterranean Way of Life." Now the world's fourth largest cruise company wants customers to know it offers "Not just any cruise." December 2017, marks the beginning of a massive expansion for MSC Cruises – a company that already seen an 800% growth in capacity since 2003. Over the next 10 years, MSC will spend $10.2 billion on 11 new ships, built by STX France and rival Italian shipyard Fincantieri SpA. The latest ships will feature more than 2,700 cabins, carrying about 5,400 passengers. The MSC annual passenger capacity will grow threefold, from the current 1.7 million to 5 million.

Photo: Norwegian Cruise Line Media Center

Two Meraviglia Plus cruisers have been ordered for delivery by 2020 The will be 331 meters long, weighing more than 220,000 tons and accommodate 6,300 passengers each. These will be MSC's largest vessels and its first powered by liquid natural gas.

The company is also building a $200 million exclusive Bahamian Marine Reserve Island Experience in the Bahamas as part of its strategy to become a significant player in North America. Over the next two years, MSC Cruises will work with the Bahamian Government and ecologists to develop the cay, a onetime sand extraction station, into a thriving marine reserve that will harmoniously coexist with the local ecosystem. This is a project that will transform the local economy base from resource exploitation to resource conservation.

MSC Cruises Executive Chairman Pierfrancesco Vago commented: "This is a natural progression for our company, which is growing very rapidly, and we are thrilled about providing this totally new experience for our guests in the Caribbean."

"Ocean Cay MSC Marine Reserve and its exclusive offerings will be a magnificent extension of our shipboard experiences. We ensure every decision we make keeps each of our ships true to the promise of our brand, offering the authenticity and quality our guests expect. This is what made us the leading brand in many of the markets we operate, including across Europe, South America and South Africa. We will apply the same thinking and attention to detail to our Caribbean offering, of which this exclusive marine reserve will become a cornerstone, because we know our guests will be amazed by this industry-unique experience."

At 95-acres in size and with 11,400 feet of pristine beach front spread across six distinct beaches, Ocean Cay Marine Reserve, 20 miles south of Bimini will easily be the biggest island development by any cruise company in the Caribbean. A purpose-built berth and pier right on the seafront means that MSC Cruises guests will be able to step off the ship straight onto the island. Since a unique part of their visit will be the island's night life, live music and entertainment at the 2,000-seat amphitheatre and many restaurants and bars, guests movement between ship and island will be especially convenient. In addition, the ship and all on board services will stay open while berthed at Ocean Cay MSC Marine Reserve.

MSC Cruises broke ground on the development in March 2016 and Ocean Cay MSC Marine Reserve will open to guests in December 2017. The Ocean Cay MSC Marine Reserve project will offer a permanent MSC Cruises presence in the Bahamas, for which the company plans to recruit 240 Bahamians in various roles over 2016 and 2017. The cay will be ideal for all MSC Cruises ships serving the Caribbean region, notably MSC Divina and the under-construction next generation ship MSC Seaside (launching December 2017), both sailing from Miami, plus MSC Opera and MSC Armonia, sailing from Havana, Cuba. In addition, the company will open a crew training school in Nassau to provide local manpower for the growing number of MSC Cruises ships sailing the Caribbean.

Significantly, the MSC strategy stands apart from their key CLIA rivals, who see their main competition as land-based tourism. Not MSC: "We need to really make sure that we're setting our brand apart from everyone else," said Bonnie Levengood, senior vice president of marketing for MSC Cruises North America.

The Author

Rick Eyerdam
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Photo: Royal Caribbean

Transportation Electrification Arrives at the Waterfront

Credit: Clean Air Engineering - Maritime

In California, the quest for environmental benefits has moved beyond 'cold ironing.'

By Tom Ewing

Transportation electrification (TE) is starting to impact California like no other state, maybe unlike any other place in the world. Essentially, and eventually, TE depends on replacing gasoline and diesel engines with renewably generated electric power. This could include just about every car, truck, fork lift, drayage vehicle, train and ship in California.

For the freight industry, including the maritime sector, TE presents complex challenges. In recent months, CA has started wrestling with "heavy-duty" freight transportation electrification. The maritime industry is included in this heavy-duty focus, starting with container, passenger and refrigerated cargo vessels. TE presents new demands across the board for ships, terminals and port operations.

The 7,500-acre Port of Los Angeles is center stage for zero-emission and low-emission technologies and strategies. Environmentally, the Port wants to be a better neighbor, decreasing the air pollutants that impact nearby communities. Additionally, the Port needs further controls to help Southern California meet Clean Air Act requirements for ozone, or smog, and fine particulates. The Port and its commercial operations need to decrease CO2 and greenhouse gas (GHG) emissions. By 2030, California wants state-wide GHG emissions to be 40

**public domain image*

percent below 1990 levels. Freight sector reductions are critical for hitting that target.

A WORK IN PROGRESS

Figuring out how to do this remains a work in progress. But a demonstration project is starting at LA's Port, in partnership with Pasha Stevedoring and Terminals L.P., The Green Omni Terminal Demonstration Project is a year-long, public-private effort to show full-scale, real-time zero and near-zero emission technologies at a working marine terminal.

At full build out, Pasha will be the world's first marine terminal able to generate all of its energy needs from renewable sources. For example, Pasha will integrate a fleet of new and retrofitted zero-emission electric vehicles and cargo-handling equipment into terminal operations, including four electric yard tractors and two 21-ton electric forklifts. Partially funded by a $14.5 million grant from the California Air Resources Board (CARB), the total cost is $26.6 million. Pasha committed $11.4 million in cash and in-kind participation, as well as serving as the project site.

For mariners, there are two critical components within this maritime/transportation electrification effort. One is likely familiar: using shore based power while at berth so that auxiliary engines – and emissions – are cut. The Port calls this Alterna-

> ***The Port and its commercial operations need to decrease CO2 and greenhouse gas (GHG) emissions. By 2030, California wants state-wide GHG emissions to be 40 percent below 1990 levels. Freight sector reductions are critical for hitting that target.***

tive Marine Power (AMP); more generically it's called 'cold ironing.' The LA Port has 270 berths, 24 are AMP equipped. This has been around for quite a while, actually.

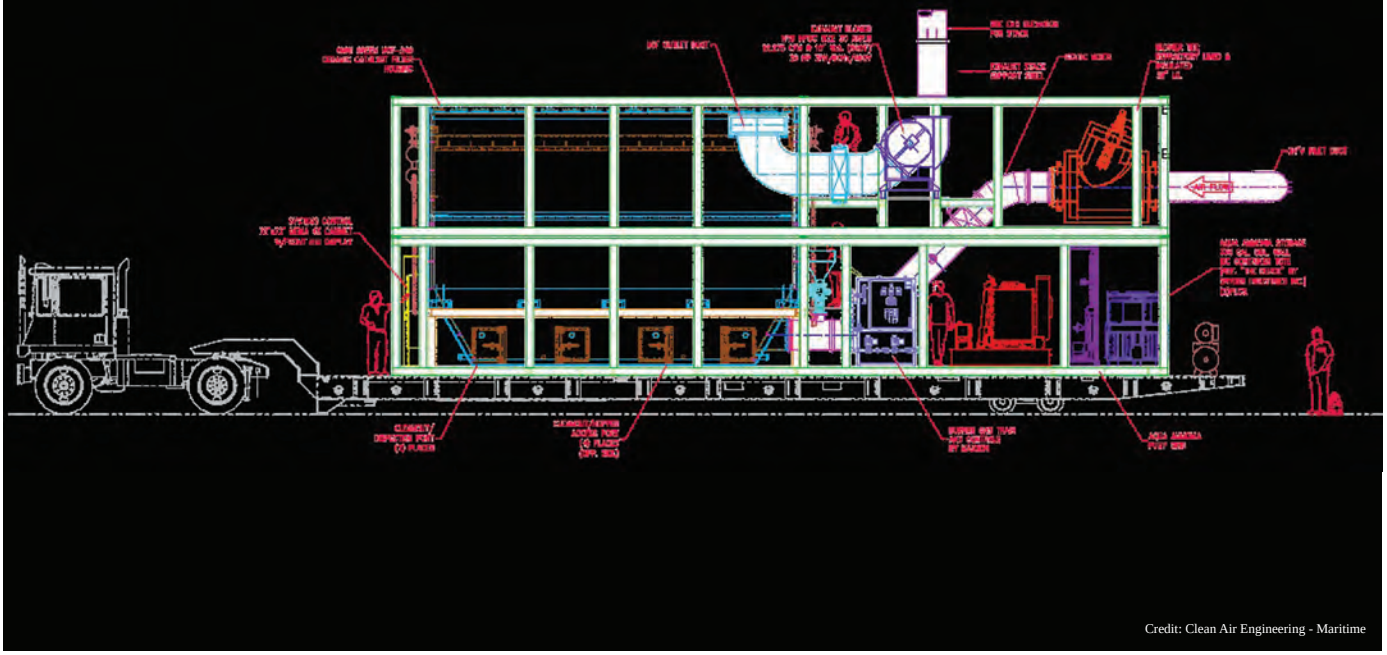
The second component is perhaps less familiar. It consists of a dockside vessel emissions capture and treatment system – called ShoreKat, developed by Clean Air Engineering – Maritime (CAEM), in partnership with Tri-Mer Corporation. ShoreKat is next-generation technology, based on an older CAEM system, a barge-mounted unit called Marine Exhaust Treatment System-1, approved for use by CARB in June 2015. ShoreKat will work in tandem with on-shore power. It will be required to control stack emissions – under certain circumstances – for ships which, for one reason or another, cannot use shoreside power and need to keep auxiliary engines running.

Prior to entering Port, a captain will need to have made his decisions about at-berth power. He can cold-iron the vessel, assuming compatibility with the terminal, and that the ship is retrofitted for shore-side power. Or, he can remain powered-up. But in that case the vessel needs to be connected to an emissions capture system.

CAPTURE, TREAT - & SELL?

CAEM reports that the newer ShoreKat controls are more expansive than METS-1, capturing and treating more than 90 percent of PM, NOx, SOx and related diesel pollutants.

Shore Kat diagram



Credit: Clean Air Engineering - Maritime

ShoreKat can eliminate upwards of a ton of NOx emissions per vessel per 24-hour period.

ShoreKat offers two additional advantages over METS-1. Land based, ShoreKat is placed on a trailer, able to move along a pier, facilitating best position for subsequent loading and unloading. A crane lifts a "bonnet" to attach to the vessel's exhaust stack. Treatment can commence without vessel retrofit. Importantly, ShoreKat has lower capital and operating costs compared to METS-1. ShoreKat's second advantage pertains to reducing energy-related emissions, particularly CO2, a top goal, obviously, for transportation electrification. CO2 reductions will be part of the demonstration work at Pasha, the first time that CO2 destruction technologies will be applied at a seaport terminal.

Matt Wartian is a Regional Global Practice Manager the engineering firm Burns & McDonnell and the project manager for Pasha/Green Omni. The CO2 control research has two parts; determining best ways to maximize CO2 reductions and in a later phase, planning for CO2 capture, for disposal or, perhaps, sale to a downstream user for research.

Wartian expects ShoreKat to be ready by February 2017. Although vessels will not be charged during the demonstration, planners still need to decide how ShoreKat costs will be covered after start-up. For example, today's 'cold-ironed' vessels must pay for shore-side power.

CALIFORNIA: OUT IN FRONT AGAIN

This is not just a marginal, academic research project. For example, two new CARB documents exemplify how regulations will push TE compliance using shore-side power and/or control technologies.

One document is a "Vessel Fleet Plan" that requires operators to detail how their fleet will comply with at-berth emission requirements. The Port's initial focus is on container and refrigerator fleets, and then only those which "cumulatively make 25 or more visits annually to a California port." For passenger ships, the minimum is 5 or more visits. And, while LA is today's target, the expanding regulations will eventually apply to of state's larger ports.

These Plans were due to CARB by October 1, 2016. As a counterpart to the vessel plan, terminal operators must also explain how they will fulfill their obligations under the environmental initiative. A second, newer policy is an Advisory posted in November. The Advisory informs affected vessel fleets and terminal operators as to how the Air Resources Board (ARB) will proceed with enforcement of the regulations, beginning in January 2017.

The Advisory sets forth six possible scenarios in which a vessel might be granted some leeway regarding at-berth emissions. These could include unavailability of terminal power, unresolved hardware problems, or when vessels keep power, but use an alternative control technology. Whatever the reason, operators are required, annually, to report specific vessel and event-related information to CARB. Operators are liable for infractions, fines and penalties could follow. In 2017, 70% of a fleet's visits must comply with the Advisory's requirements. That increases to 80% by January 1, 2020.

LOOKING AHEAD

Matt Wartian was asked about scale-up, at least at LA. After all, the Port of LA is the 19th largest in the world, the 9th largest when combined with the Port of Long Beach. LA was visited by 1,951 vessels in 2015. Unanswered questions include how much AMP infrastructure is needed, how many ShoreKats that might involve and who will pay for it all. Wartian himself doesn't know. That said; there will only be one ShoreKat at the Pasha project. The Pasha terminal is a break-bulk facility and usually unloads just one ship at a time; so operationally, that works. As the emission reduction program expands, though, to other terminals, and other Ports, the "right number" of units – AMP and ShoreKats – still needs to be determined.

The Port of LA has no plans to expand AMP beyond the current 24 berths, which cost the Port about $180 million. As a comparison, the ShoreKat used in the Pasha project cost $3.7 million. Demand – and future investments – will likely become clearer for vessel and terminal operators, and the Ports themselves, when compliance plans can be reviewed.

In many ways, transportation electrification is hardly about transport. In California, TE is about using electric power primarily to replace individual engines and power plants. TE is not being advanced because it offers better, more efficient or safer transport. Furthermore, because TE results from command, not demand, it sweeps in new regulations and enforcement to ensure participation, compliance, equity and, eventually, the data that will document improved air quality and reduced climate impacts.

Hopefully, these non-transport goals will still allow safe, efficient and cost-effective maritime shipping.

The Author

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Cloud-Based Global Trade Management – the Sky is the Limit

A new, cloud-based solution leverages global trade compliance to streamline trade and logistics. The global supply chain might never be the same – and that's a good thing.

By Joseph Keefe

Global Trade Management (GTM) can be defined as the practice of streamlining the entire lifecycle of global trade across order, logistics, and settlement activities to improve operating efficiencies and cash flow. Separately, IT research firm Gartner defines foreign/global trade compliance (GTC) as "a category of software that addresses the rules and regulations and trade-specific costs of conducting cross-border trade." Until now, perhaps, those two concepts were considered separate tasks, undertaken in different ways, by different providers and for different reasons. That's about to change.

At a time when the global trade markets have been roiled by myriad variables, two veteran solution providers have come together to offer a cloud-based global trade management system like no other. Charlotte-based Integration Point and NY-based GT Nexus, having been aligned in an informal partnership for several years, are now developing an integrated offering that they say will be the most comprehensive global trade management solution in the industry.

By itself, Integration Point has been in the business of providing cloud based global trade management (GTM) solutions since 2002. One of the earliest providers to offer global trade compliance solutions delivered over the internet, its roots are firmly planted in the US Foreign-Trade Zone (FTZ) space. A team of more than 600 subject matter experts serve more than 600 customers doing business in 100 countries.

GT Nexus bills itself as the world's largest cloud-based B2B network, with a platform that delivers supply chain management and global commerce solutions that include Supply Chain Planning, Supply Chain Collaboration, Transportation Management, Procure to Pay Automation, Supply Chain Finance and Supply Chain Visibility, just to name a few. In business since 1998, GT Nexus is headquartered in NY with 1,000 employees worldwide, managing $500B in goods, with more than 28,000 businesses and 100,000 worldwide users.

Stronger, Smarter Together

Operating on the premise that the supply chain is a network, the two firms agree that business networks must be flexible. For its part, says Kevin Shoemaker, Integration Point's vice President of Global Solutions, "Integration Point's trade compliance platform was designed in the cloud for companies who need to keep up with expanding global markets and an ever-changing regulatory environment." Beyond this, he adds, "We provide the tools shippers need to compliantly move goods to the end customer, no matter the location. By utilizing our platform, importers and exporters alike can access trade regulations for over 190 countries; analyze their global trade for risk and savings opportunities; manage imports, exports, and direct filing requirements; and fully leverage duty suspension programs across the globe on one integrated platform."

GT Nexus regards its strength as the ability to provide agility

Compliance becomes more strategic when you connect it directly to your supply chain processes. Once the trade compliance part of the network is addressed, supply chain transactions are made cleaner and more compliant.

– Heidi Benko,
Vice President, Product Solutions Strategy & Marketing at GT Nexus

and end-to-end visibility. According GT Nexus, it is essential to seamlessly connect the entire supply chain: both upstream and downstream. The foundation to making this all happen is end-to-end connectivity, visibility, and network-wide collaboration – including suppliers, customers, and other supply chain partners. By integrating the physical and financial supply chains, companies significantly improve working capital and ensure a resilient supply chain.

Together, the two firms intend to marry their offerings into a single service that allows companies who import or export raw materials or finished goods to comply with import and export regulations and trade agreements. That's because the shifting landscape of regulations require up-to-date trade content to properly manage and plan for customs duties, import and export compliance requirements, and report international trade data in an efficient and compliant manner.

The aim of the new service includes 'global trade compliance can be leveraged to help manage a global supply chain.' But, what does that mean? According to Heidi Benko, Vice President, Product Solutions Strategy & Marketing at GT Nexus,

At a glance … top 10 advantages of the GT Nexus / Integration Point offering

Comprehensive	Cloud-based superior global trade management at lower cost of ownership.
Single Solution	Managing global trade process through the network partners (suppliers, logistics & brokers).
Global Team	Localized knowledge enables companies to stay ahead of changing supply chain regulations.
Cost Savings	Comprehensive set of duty optimization solutions including FTZ, FTA and First Sale Automation.
Reduced Lead Times	Streamlined trade management through automated document creation & compliance checking.
Reduce Delays	Eliminate non-compliance
Reduce Risk	Proactive denied party screening of all parties and locations on every transaction.
Reduced Brokerage Fees	Automated item classification, import and export document creation, direct filing capabilities.
Rules & Regs Visibility	In advance of shipments, ensure compliance and identify opportunities such as FTA's.
Supply Chain Visibility	Tracking goods & costs throughout transaction lifecycle from order to delivery with alerts to delays.

"Compliance becomes more strategic when you connect it directly to your supply chain processes. Once the trade compliance part of the network is addressed, supply chain transactions are made cleaner and more compliant." She continued, "The process is digitized, making documents more accurate and streamlining processes. For example, HS codes and duty rates are automatically populated into invoices to expedite customs filings. Documents and data are checked early and often for accuracy. All parties in the transaction are viewing and utilizing the same documents and data vs. data rekeying."

The goal is to allow companies to utilize better information in the form of trade content and analytical tools, and then benefiting from more informed decision making. By doing so, trade compliance becomes yet another lever available for improving the performance of global supply chains.

It starts with trade content sourced from governments, typically via automated feeds, so that whenever an update is made at the source, Integration Point receives those same updates as soon as they are available. Once trade content is received, it goes through a rigorous multi-step validation process to ensure that all content delivered to the end user is accurate, complete, and updated in a timely manner.

The integrated Global Trade Management Platform:

There are two major mistakes that shippers make on the compliance side. The first is assuming that Customs will never knock on their door or thinking that their Customs Broker is keeping them in compliance. And, trade is heavily impacted by regulatory issues. In fact, the World Economic Forum says that cancellations happen in nearly 5% of sales due to export license delays.

Worse, many companies lack a standard way to manage trade compliance across the entire organization. In today's global economy, companies doing business in multiple countries need a platform that provides visibility into their global compliance operations and the ability to institute common, compliant procedures for how they transact business.

The Integration Point/GT Nexus offering works like this: Suppliers and other trading partners are on-boarded and checked against Restricted Party lists prior to the transaction. Parts and items are uploaded and classified. Then orders, invoices and shipment parties are automatically checked against Restricted Party lists. Trade data such as HS codes and duty rates are populated onto documents ensuring documentary accuracy and compliance. Finally, the customs entry is created and filed directly from the platform, or pre-entry is electronically sent to the broker.

"For sales and supply chain departments, this is where the trade compliance rubber meets the road. By having trade content integrated into an export management system, like we do in our platform, export departments would have visibility well in advance of a license requirement," says Shoemaker, adding "The integrated solution not only provides visibility into the license requirement, but also validates if a license is required and if the exporter has one on file in our system. Having the right information at the right time is where we see the real value in trade compliance across the supply chain."

The new partnership brings many cutting edge features to the supply chain. The Trade Lane Analyzer, for example, tells shippers 'what they need to know.' Shoemaker adds, "We are very excited about bringing a tool like Trade Lane Analyzer to the market. Trade Lane Analyzer is designed to address many of the issues we address – namely, having the right information earlier in the supply chain which allows for taking action before issues arise in their supply chain."

By using Trade Lane Analyzer, companies can incorporate into their sourcing decisions the potential impact of import and export controls, if any country of origin rules may apply, what documents are required, along with incorporating trade compliance data such as available trade preference and/

> *Integration Point's trade compliance platform was designed in the cloud for companies who need to keep up with expanding global markets and an ever-changing regulatory environment.*
>
> – Kevin Shoemaker,
> Integration Point's Vice President of Global Solutions

or duty suspension programs.

Separately, the system marries EDI status updates from carriers and brokers, with AIS data and milestone models to provide details on where shipments are and predictive ETAs. Users are alerted to delays. Future enhancements include machine learning capabilities that could one day provide even more accurate predictive ETAs. As the new offering gathers steam, the two firms will leverage the strengths of the other to provide a comprehensive, turnkey package. For example, and while Integration Point is not involved in the physical movement of freight, only the gathering and sharing of regulatory information necessary to efficiently moves freight across international borders, GT Nexus services include transportation sourcing, booking/tendering, rating, planning & optimization, track and trace and customs clearance. There are over 13,000 carriers connected to their Network, and the firm claims that more than 95% of global ocean capacity runs through its platform.

Ultimately, both firms are pushing those traditional boundaries of how trade compliance has been viewed and how it's used today. Shoemaker explains the concept, saying, "Instead of simply avoiding fines with trade compliance, we look for new and creative ways that trade compliance can be leveraged to improve operational efficiencies and cash flow."

Shared Vision, Integrated Offering, & Common Customers

According to GT Nexus and Integration Point, the new partnership finalized a contract with a new client shortly after announcing the offering and expects several more to close by year's end. Targeting both new and existing clients, the two firms already share more than 30 customers that can instantly benefit from an integrated offering.

Weaving Integration Point's trade content and compliance data into transactions created on the GT Nexus platform, and then performing compliance checks automatically, the solution streamlines processes and helps ensure that transactions are complete and compliant to reduce delays and costs. As they move forward the partner firms are already starting up customer influence groups to help drive the future roadmap of the combined offering. To that end, Shoemaker says simply, "Customs regimes around the world are enforcing regulations more than ever. Considering all that, it's an unnecessary roll of the dice to take your trade compliance lightly."

Compelling Data Propels Cruise Industry

The Heart of Cruise Shipping,

like never before, is still here in the United States. And, says industry advocate Cruise Lines International Association (CLIA), cruising has at the same time evolved from its more conservative roots to become ever more exciting – and popular. Younger generations – including Millennials and Generation X – will embrace cruise travel more than ever before, says CLIA. The numbers would tend to support that position.

CLIA bills itself as the world's largest cruise industry trade association, providing a unified voice for the global cruise community, supporting policies and practices that foster, among other things, "a safe, secure, healthy and sustainable cruise ship environment." Representing 60 Cruise Lines that reach ocean, river and specialty cruise line destinations, accounting for more than 95 percent of global cruise capacity, CLIA also claims 300 Executive Partners, key suppliers and cruise line partners, including ports & destinations and ship development, suppliers and business services.

But CLIA's membership is much more than just mammoth ocean cruising vessels. For example, and among the key trends being followed by CLIA Cruise Line Members is the current fleet of 184 river cruise ships, with as many as 13 new river cruise ships on order for 2017. That's an increase of 7 percent. More importantly, interest in ocean cruising is projected to remain strong in 2017. CLIA says that nearly half of non-cruisers have expressed interest in taking an ocean cruise. Beyond this, actual demand for cruising has Increased 62% in the ten year time frame of 2005 to 2015.

The Heart of Cruising:

Total cruise passenger and crew visits to Florida totaled 10.5 million in 2014, accounting for 45 percent of all passenger and crew visits in the U.S. with an 11 percent increase from 2013. That trend continued in 2016 and is expected to extend into 2017. Florida remains the center of cruising in the United States, accounting for more than 60 percent of all U.S. embarkations. Miami continues to lead Florida ports and since 2010, Florida ports have experienced more than a 20 percent increase in passenger embarkations. 2015 passenger throughput at Port Everglades (3,622,229 passengers) and Miami (4,915,000 passengers) accounted for a whopping 8.6 million of the nation's 11 million cruise passengers. Combined, passengers, crew and cruise lines directly spent $7.95 billion in the state, accounting for 38 percent of the industry's direct expenditures and an 8.4 percent increase over 2013. This spending generated 146,401 jobs paying $6.82 billion in income. In addition, the state of Florida, the home of corporate or administrative offices for many cruise lines, accounts for about two-thirds of the cruise lines' U.S.-based employment.

California, like Florida, hosts both cruise line headquarters and ports-of-embarkation. During 2014 alone, cruise passenger and crew visits totaled 2.01 million. Passenger and crew visits increased for the first time in five years, by nearly 50 percent. This dramatic increase was the result of a combination of increased deployment in the Mexico West market and a shift from 7-day cruises to shorter 3- and 4-day cruises. That's only expected to increase dramatically, over time.

Separately, Alaska benefits from the cruise industry primarily as a destination market. And, as the Arctic ice recedes, the ability of quality operators to ply these waters will increase passenger throughput. During 2014, the cruise industry produced 4.7 million passenger and crew visits to Alaska destinations. And, as adventure travel grows at a record pace, cruise expeditions are expected to see that impact, here and in other remote regions.

In all, 24.2 million passengers took to cruise ships in 2016 and CLIA expects that number to increase to about 25.3 million in 2017. That's a lot of passengers, a lot of fun, and still much more in terms of what it means for cruise logistics providers.


CRUISE PASSENGERS COME FROM AROUND THE WORLD*
Canada
724,000
US
11.28 Million
UK
1.61 Million
Germany
1.81 Million
Spain
466,000
Italy
809,000
France
615,000
China
986,000
Rest of the World
3.03 Million
Brazil
618,000
Australia
1.1 Million
Demand for Cruising has Increased 62% in the Last Ten Years (2005-2015)
*Represents 2015 total ocean cruise passengers
CLIA
12


2017 PASSENGER CAPACITY SNAPSHOT
2017 = 25.3 Million Passengers Expected to Cruise
CLIA Global Ocean Cruise Passengers (In Millions)
30
25
20
15
10
5
0
17.8
19.1
20.5
20.9
21.3
22.34
23.19
24.2
25.3
2009
2010
2011
2012
2013
2014
2015
2016p
2017p
p = projected
CLIA
7

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