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ports to be implemented successfully, ports will

need to collaborate more

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## PORTS HARBORS

### Official Journal of the International Association of Ports and Harbors

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## Driving force

IAPH board tasked the newly formed dynamic duo with the final chapter of IAPH reformation

### Santiago Garcia-Milà IAPH President

t the Guangzhou conference last May, we bode farewell to Susumu Naruse, who decided to step down as secretary general. Susumu has been faithfully leading the secretariat for almost 10 years, including the initial 'reform years' that led to our new constitution. I want to thank him for his work and wish him all the best for the future.

I am happy to announce that we found a successor in Masahiko Furuichi, who took office as secretary general on 1 September this year. Masahiko was formerly working as senior advisor with the Japan International Cooperation Agency (JICA) and has a long-standing career in academia. Taking responsibility for administration and finance, he will create a new management duo with our managing director Patrick Verhoeven, who continues to drive the policy and strategy agenda.

The IAPH board has tasked Masahiko and Patrick with the final chapter of our reform process. They will jointly prepare an assessment of the current resources deployed in Tokyo and

### ■ IAPH is evolving into a full-blown policy organisation

Antwerp and work out a new organisation chart and multi-annual budget for the coming years, matching the available resources with our actual needs. IAPH is evolving into a fullblown policy organisation, aiming for a strong voice in International Maritime Organization and other international institutions. At the same time, we are taking the World Ports Sustainability

Program to its next level with new projects and partnerships. This requires a fundamental restructuring of our resources.

We expect the organisation chart and budget to be finalised by the time we meet in Antwerp in March 2020 for the World Ports Conference. With an overall focus on trust, transparency, and reliability, the conference has four content streams covering energy transition, data collaboration, reputation management, and business innovation and we will go live with a full programme and registration this September.

In Antwerp we will present a forward-looking brand for the organisation that matches our ambition as the voice of world ports. We are also refreshing your favourite magazine! Tell us what topics, to explore, which people you want to hear from, which insights and data analysis you want to obtain, and how you want to interact with the editorial team. I would like to thank all our members for the confidence they have given us so far and continued support for the completion of the reform process we started in 2015. PH



### Port **updates**

CAR EXPORTS ZOOMING South Korea's Mokpo port is planning to build a new pier to facilitate growing vehicle shipments, particularly for lead customer Kia Motors, which exported 310,000 units from its Gwangju plant in 2018. Transhipments from producers in the region are also growing, going from 15,000 units in 2014 to 159,000 in 2018. Mokpo Regional Office of Oceans and Fisheries stated that work on the pier will be carried out from 2020 to 2023, at an estimated cost of KRW43.2 billion (USD36.5 million). Construction of the second phase of is nearly complete, with all works set to be done in 2020, after a total of 14 years of building. Mokpo Regional Office of Oceans and Fisheries said, "By strengthening our support for import and export activity through constructing this car dock, Mokpo port will become a central port in the southwestern region."



**KING'S LYNN GROWTH** Associated British Ports' (ABP) Port of King's Lynn has made an agreement with Palabora Europe for a new GBP30,000 (USD37,882) vermiculture bagging plant, to supply the material for fire protection, plaster, and lightweight concrete for the construction industry. Kim Kennedy, ABP King's Lynn port manager said, "We are delighted to welcome Palabora as a new customer in King's Lynn and look forward to providing them with the best location for their thriving business operations. We invested in the new bagging plant at the port to ensure we can provide a full turnkey solution to our customers."



Royal HaskoningDHV will help Da Nang port in Vietnam prepare for increasing cargo volumes

## Relocating Da Nang port

Vietnam is working with Dutch engineering consultancy Royal HaskoningDHV to revamp port facilities in Da Nang to prepare for increasing cargo volumes and to make the Mekong Delta more resilient against climate change.

The overhaul of the port in Da Nang, a coastal city that has been suffering from congestion, would see the construction of a new sea port in the Lien Chieu area, to ease the load of the existing port in the Tien Sa area. During a trade mission to Vietnam in April, Royal HaskoningDHV's representatives signed a letter of intent with Da Nang to work on the relocation of the port to Lien Chieu.

The plan is to have the Lien Chieu facility take over cargo handling, while Tien Sa will be dedicated to serving cruise ships. The Vietnamese government's estimates show that Da Nang's ports will have to handle about 10 million tonnes of cargo by 2020 and 30 million tonnes of cargo by 2030. Congestion at Tien Sa caused by growing cargo volumes has also resulted in traffic jams and accidents, plus air pollution, and hampering plans to develop tourism in Da Nang.

Dang Viet Dung, vice-chairman of Da Nang's People Committee, said that the city wants to build the Lien Chieu port as a key entry point into logistics chains, providing services for the central and central regions, as well as the import-export exchange among Asean partners via the East-West Economic Corridor (EWEC) that links Vietnam, Laos, Thailand, and Myanmar.

He continued, "We aim to build up Da Nang as a regional logistics centre to meet import and export needs among domestic and foreign direct investment enterprises. Partners in Asean could boost trading with Vietnamese businesses along the EWEC transport system and via Da Nang ports. The logistics complex will provide 50% of logistics services via the airport and sea ports and 40% via the railway system by 2050."

Dung added that a railway will be constructed to join the Kim Lien cargo railway station with the airport cargo logistics and hightech park. A road will link the National Highway No 1 with Lien Chieu port.

Nguyen Huu Sia, general director of Da Nang Port Joint Stock Company, said the city has potential to develop into a key logistics centre of Vietnam and Asean. Vietnamese state-owned marine and civil engineering consultancy Tediport said in a recent assessment that upon completion, new port could accommodate cargo ships of up to 70,000 dwt. Tien Sa port alone could allow access to 70,000 dwt ships, 4,000 teu container ships and 150 gt cruise ships, he added. Sia said that Da Nang's port facilities, including Tien Sa, Lien Chieu and Son Tra, would handle 29 million tonnes of cargo by 2030.

As planned, the city will upgrade Lien Chieu port as an integrated port to ease the overloading at Tien Sa – which will handle mainly cruise ships and fewer cargo ships. Lien Chieu is scheduled to begin operation as a cargo port in 2022.

Royal HaskoningDHV will also assist the Vietnamese government in upgrading the Mekong Delta, which is part of the Strategic Partnership Arrangement on Climate Change Adaptation and Water Management between Vietnam and Netherlands. Funded by the World Bank, the plan aims to be a strategic guidance document to provide a long-term integrated policy framework for the development of the Mekong Delta.

The Mekong Delta is essential to Vietnam's economy, as an import and export hub for the country's agricultural industry. Ongoing building and expansion will add to the pressure on natural resources.

## Port of Cork prepares customs for Brexit

The Port of Cork in the Republic of Ireland has doubled the capacity of its customs facilities in anticipation of a possible no-deal exit from the European Union (EU) by the UK, a move the port said is likely to "substantially" increase border processing times.

An 31 October deadline is fastapproaching for the UK's Brexit, with the chances of doing so via a formal deal to unwind its participation in the EU growing slimmer by the day.

"After close examination of historical data and several simulation studies, the port concluded that if the United Kingdom leaves the EU single market and customs union without an agreement, it is likely that more intensive checks and declarations will be required," the Port of Cork said in a statement.

Brendan Keating, the port's chief executive, said Cork has made "extensive preparations" ahead of Brexit, with the port acting in coordination with the Irish government and EU to ensure a smooth transition. "Larger customs facilities will ensure that we can continue to ensure prompt vessel turnarounds and efficient supply chains without extended interruption from any additional administrative formalities," Keating said in the statement. A new USD89 million terminal — the Cork Container Terminal — is due to open in 2020, additionally increasing traffic in the port.

Border and customs officials throughout the EU fear a no-deal Brexit could unleash a fair amount of chaos at UK border crossings.

Consequently, not all stakeholders share Keating's optimism, particularly in the event of a no-deal Brexit.

An Organisation for Economic Cooperation and Development study found that customs compliance requirements, lengthy administrative procedures, and other delays could increase the transaction costs of transported goods by between 2 to 24 % of the value of the good.

Cork, in the south of Ireland, is the country's second-largest port, handling a total container traffic of 228,762 teu last year.

port in Nome is a critical piece of the existing opportunities in the Arctic, in my opinion, because there's no deepwater port north of Dutch Harbor."

Nome has a population of 3,800 people, with an airport, hospital and commercial centre, placing it in good stead to become a future regional hub.

The port has already drawn the attention of the US Army Corps of Engineers. Through a process of elimination it was deemed the most appropriate site to be the first deepwater US Arctic port.

The corps drafted an initial plan in May 2019 to double an existing causeway of 914 m and build a second causeway of the same distance. The seafloor would be dredged, lowering the current depth of 7 m to 12 m, to accommodate larger vessels traveling through the region.

The corps will release a finalised version of the port study later in the year, with approval from Congress and added investment, construction is expected to begin mid-2020 at an estimated cost of USD500 million.

### Port updates

### **CHINESE LNG PUSH**

China has revealed plans to build two more LNG receiving terminals in its push for clean energy. Firstly, Zhejiang **Energy and Shenzhen Energy Gas** Investment Holdings will jointly develop a facility in Zhoushan port in Zhejiang province. The facility will be built on the south of Liuheng island at Zhoushan's sub-port and will be connected to Zhejiang Energy's pipeline on the mainland. In the first phase of the project, a berth capable of accommodating a conventional 266,000 m3, an LNG bunkering terminal and three LNG storage tanks that each have capacity of 200,000 m3, will be built. The terminal is expected to process 3 million tonnes of LNG annually and this could go up to 6 million tonnes when the second phase is constructed. Separately, publicly listed Chinese energy distributor Guanghui Energy will build an LNG receiving terminal along the Yangtze River in Hunan province. Located in Junshan port area of Yueyang port, the facility will include two 8,000 m3 LNG discharge berths, one berth for a work boat, one 50,000 m3 LNG storage tank and related facilities.



### CONTAINER CAPACITY WIN Morocco's Tangier Med has surpassed container capacity at the nearby Mediterranean ports of Algeciras and Valencia, after adding 6 million teu in a new EUR1.3 billion extension Tangier Med 2. The port expansion builds on export capacity for French carmakers Renault and Peugeot, which produce cars locally, as well as adding 6,000 jobs at the port and 70,000 others in its adjacent business area.

The industrial port side of Nome Alaska and the Bering Sea

# Increased interest in Arctic port plans as ice melts

As ice melts around the Bering strait, the Alaskan city of Nome plans to expand its existing port into the only deepwater port in United States Arctic waters.

Richard Beneville, the mayor of Nome, hopes the port expansion will serve as a full-service support centre for vessel traffic passing through the strait. While the port of Nome is situated south of the Arctic circle, it is closer than the current full-service deepwater port that US vessels rely on, 1,600 km away, the Dutch Harbor at the Aleutian Island of Unalaska.

Joy Baker, port director of Nome, commented, "Putting a deepwater

### Port updates

### HARSH PENALTIES FOR SEAFARERS 'JUMPING SHIP'

The Indian director-general of shipping plans to act against Indian seafarers who 'jump ship' to try and illegally enter countries while halted in international ports. A circular released on 1 August said, "This is a criminal act and due to this unscrupulous behaviour of a small number of seafarers, the job prospects for Indian seafarers on cruise ships are being adversely affected." The announcement follows complaints that a high number of Indian seafarers aboard US-bound cruise ships were abandoning vessels to try and illegally enter the country. Subhash Barguzar, India's deputy director-general of shipping, noted that there have been a few hundred claims of this nature from manning agents in the maritime sector. Seafarers caught attempting to do so will have their passports cancelled, rejected access to the e-migrant system, and their seafarer continuous discharge certificate (CDC) will be cancelled within 24 hours of a complaint from an employer or registered recruitment and placement company. The cancellations will be run through India's Ministry of External Affairs.

### QATAR CRUISE CALLS

A consortium led by Middle East Dredging has completed dredging works at Qatar's Doha Port. Two major cruise vessels will now be able to simultaneously call at the port, with Sheikh Mohamed bin Khalid Al Thani, director of technical affairs at Oatar's Ministry of Transportation and Communication, insisting that industry will be economically crucial for Qatar in the coming years, especially in light of the imminent FIFA World Cup in 2022. The sporting event is expected to draw a significant number of visitors to the Qatari capital.



Long Beach marina and shipping port at sunny day

# LA-LB terminals expect smooth peak season flow

Average truck turn times at the Los Angeles-Long Beach port complex jumped 7.8% to 83 minutes in July, according to data from the Harbor Trucking Association (HTA).

Terminal operators in the ports of Los Angeles and Long Beach say a drop in productivity last month was caused by one-off events and does not signal that service will deteriorate further as the peak season progresses.

According to Harbor Trucking Association (HTA) truck mobility data powered by GeoStamp, the average truck turn time at the 12 Los Angeles-Long Beach terminals in July was 83 minutes, up 7.8% from 77 minutes in June. The number of moves that lasted two hours or longer edged up to 18% from 17% in June.

What happens at this time of year in the largest US port complex is of interest to all major gateways in the eastbound trans-Pacific at the beginning of the peak season because Los Angeles-Long Beach is a bellwether for the trade. Last year, July was the beginning of an early peak season due to frontloading of imports from China. This was reflected in marine terminal congestion that continued through the rest of the year.

Conditions are much different this summer. There has been little front-loading of US imports, and industry analysts are projecting a return to a normal cadence, in which cargo volumes increase through October and then diminish once most of the holiday merchandise has entered US ports for the Christmas season.

However, terminal operators in Los Angeles-Long Beach do not expect to encounter the same challenges as last year, when container volumes in the port complex increased 4%, according to PIERS, a JOC.com sister company within IHS Markit. In the first seven months of 2019, total container volume in Los Angeles increased 6% from 2018, but yearto-date volumes in Long Beach have declined 7.2% from the same period last year, according to port authority statistics.

### Smart ports paper released

The British Ports Association (BPA), along with the Port of Rotterdam has launched a new joint smart ports paper examining the digitalisation of ports. The white paper can be found on the Port of Rotterdam website.

The paper is part of BPA's Port Futures programme, a thought leadership initiative that brings together industry partners, innovators, and experts on topic relating to shipping and ports. Commenting on the paper, Joyce Bliek, director of Digital Business Solutions at the Port of Rotterdam Authority, said, "Digitalisation presents new opportunities to not only raise efficiency within logistics chains but also improve their sustainability. We believe in the added value of a global network of connected ports around the world. Such a network can facilitate the active exchange of data, both within port communities and between individual ports."

## North P&I club members raise concerns on rise in pilot helicopter transfers

An increasing number of ports around the world are using helicopters to transfer the pilot to and from the vessel instead of the more traditional pilot boat, according to new information from North P&I Club.

The Club noted a rise in queries from its members on helicopter transfers as they become more common in ports around the world. While this does mean that pilots can be transferred in increasingly challenging weather conditions, the marine liability insurer warns that the practice introduces new, but manageable risks that ships' crews should be aware of.

"As an increasing trend, this is something that should be put into safety management systems [SMS] and risk assessments," North P&I Loss Prevention executive John Southam told P&H sister publication SAS. "It should be a bespoke assessment for this operation. Pilot boarding tends to be a day-to-day job, but they are all a bit different – especially for helicopter pilot transfer, crew should conduct a risk assessment for that port in that operation."

North P&I recommends that the

ship's master should read and understand the latest copy of the International Chamber of Shipping (ICS) Guide to Helicopter/Ship Operations. Additionally, the port's guidelines and requirements should be sought and adhered to.

After consulting the above, the insurer said that the ship's crew should draw up a bespoke risk assessment to be used in conjunction with any existing SMS procedures for this type of operation. Generic "one size fits all" risk assessments should not be used, it advises, as each port and operation will have different and changeable risks.

"Transferring a person via pilot cutter is in itself a risky operation," said Adrian Durkin, director (Claims) at North P&I. "The simple fact that it's by helicopter doesn't necessarily change the complexity. As it stands, there are no changes to insurance, but keep a weather eye to see if there is an increase in burdens of liability that are put on the vessels."

In addition, North P&I emphasises the importance of communication in transfer operations. It states that the ship's master and helicopter pilot should agree on the most efficient form of communications and ensure there is no cross-talk on the channel, as well as prepare the deck for landing, importantly removing any debris from it.

Southam stressed the importance of steering clear of a helicopter's downdraft and winch wires, which are "capable of serious injury and potential fatalities". "The winch wire must touch the deck fully before any one going near that pilot – it is not a tight line," he stressed.

As always, the insurer said that crew should wear the appropriate personal protective equipment (PPE), with all necessary fire-andrescue equipment at the ready during transfer operations.

"Hopefully, the process will be less questioned and crew will get more experience, but they should never get complacent," said Southam. "It is worth repeating that there should always be a bespoke risk assessment, inclusion in the safety management system, and a toolbox talk on the risks each time a pilot transfer via helicopter takes place."

### Port **updates**

#### NANSHA EXPANSION

The port of Nansha has begun work on the fourth phase of a container terminal to accommodate the world's largest container ships. The work, which is scheduled to be completed in the second half of 2020, will see the bottom width of the channel expanded from 243 m to 385 m by three dredgers, including China's largest trailing suction hopper dredger (TSHD), the 2016-built TSHD Jun Yang 1. The expansion of Nansha port is part of the Chinese government's Greater Bay Area, which was mentioned in China's 13th Five-Year Plan in 2016 and is widely viewed as an extension of Guangdong's participation in the Belt and Road initiative.



### AFRICAN PORT UPDATES

Discussions between Tanzania and China over the USD10 billion port project in the town of Bagamoyo have been taken up again after Tanzania suspended the project in June. The newbuild port would be the largest port on Africa's East coast and form part of China's extremely ambitious Belt and Road initiative. It was abandoned because of "exploitative and awkward" terms by the Chinese, according to president of Tanzania John Magufuli. Seperately, Anadarko, a US oil and gas firm, will develop the first onshore liquefied natural gas (LNG) facility in Mozambique, to support the fledgling Rovuma development. The USD20 billion Area 1 Mozambique project, a joint venture between McDermott, Chiyoda and Saipem, will comprise construction of two liquefaction trains on the Afungi peninsula, in northern Mozambique.

### China to receive PCM containers

A shipping container that is equipped with phase change materials (PCM) that store and release cold energy when changing state, such as from liquid to solid, is currently being delivered in China, hoping to become an addition to traditional refer containers.

Compared with traditional technologies, which rely on diesel-powered refrigeration, the PCM cooled freight containers have the advantages of constant temperature control, passive cooling, energy saving, and environmental benefits. The containers can easily be transferred between trains and trucks, offering enhanced flexibility across supply chains and reduced emissions.

Experts from the University of Birmingham, United Kingdom, have worked with Chinese railway rolling

stock company, CRRC Shijiazhuang, to develop the cold storage road and rail container.

The company has now started to deliver the first order of 49 passively-cooled containers to Yunnan Su Lida Agricultural Products Supply Chain. The containers are an enhanced version of the launch units trialled in 2018.

Once charged, a full charge for a container takes less than two hours, the technology can keep the interior of the container within a set temperature range for more 100 hours.

For example, if the set temperature range is 5-12 °C, one charge could last about 14hours. However, the duration can be increased to about 194 hours if the set temperature range is 0-5 °C.

## Setting the agenda

The IAPH's Patrick Verhoeven and the World Maritime University's Dr Cleopatra Doumbia-Henry talk sustainability, co-operation, and corruption, *Jonathan Robins* reports

hen new regulations such as the sulphur cap, Facilitation of International Maritime Traffic (FAL) regulations, and stricter greenhouse gas (GHG) curbs are introduced, many knowledgeable minds are required behind the scenes for their crafting and implementation. To build the capacity to do this, in 1983 the International Maritime Organization (IMO) established the World Maritime University (WMU), which is based in Malmö, Sweden, and has a branch in Shanghai. Its president, Dr Cleopatra Doumbia-Henry, sees the WMU's role as crucial in these changing times.

"WMU is an offshoot of the IMO... [the] child of the IMO," she explained, "It is there to ensure that, especially for the developing world, countries have the capacity to act on maritime affairs, including the regulatory framework of the IMO."

# **G** It is a must that we have to contribute to the SDG agenda

### Dr Cleopatra Doumbia-Henry, World Maritime University president

Nearly 5,000 graduates have passed through the WMU, which awards master's degrees and PhDs and has a large distance learning programme. Alumni include Secretary-General of the IMO Kitack Lim and the chair of the IMO Council, Xiaojie Zhang.

With sustainability an increasingly dominant area of maritime regulation, it is no surprise that it is also a focus for the WMU. "It is a must that we have to contribute to the SDG [sustainable development goal] agenda, and therefore sustainability broadly speaking is a very integral part of our academic programme," Doumbia-Henry said.

Does she believe that the ports industry has fully woken up to the sustainability agenda yet? "I think we have a unique opportunity now because the message has really reached them. Ports around the world are realising [what] the implications are in terms of climate, environmental costs, as well as the role that ports play."

Nevertheless, as Patrick Verhoeven, IAPH managing director of policy and strategy, said, sustainability means

different things to different ports. "While most ports will be working on some aspects of sustainability, very few are pursuing an integrated approach so far. It means we still have a lot of work to do to promote the integrated philosophy of the SDGs."The IAPH is seeking to promote an 'Olympic approach', whereby each port will try to qualify for each of the 17 SDGs, and will go for excellence in the areas most relevant to them. "We're currently developing a tool that will facilitate ports to achieve this goal and we're also planning a tailor-made training scheme, adapted to the needs of ports in developed and developing countries," he said.

For those ports that have already launched sustainability projects, the IAPH's recent sustainability awards was a major showcase. As a judge, Doumbia-Henry saw up close how ports are approaching sustainability, and she was impressed. "It was very encouraging; it is giving me lots of hope. Many ports are in major cities, and so the impact on human health [from high pollution] reaches people," she explained. Verhoeven was also pleased that so many ports came forward to enter the awards. "We felt sorry for the judges that they had to go through so many excellent project applications! It was indeed interesting to note that most projects fell in the category 'community outreach and port-city dialogue."

Other areas are getting plenty of attention too, Doumbia-Henry said. "The SDGs has given us a very good boost to make everyone aware – industry, governments, and academia – how much work is to be done to reduce CO<sub>2</sub> [carbon dioxide] emissions, and the implications of climate change that are getting more vicious and strong," she said. "I think the message is getting through and the port industry is rising to the challenge and doing more and more to make sure they contribute to sustainability and the environment." It is a sentiment backed up by Verhoeven's hope that in next year's sustainability awards, each member should be able to submit at least one sustainability project, with the winners set to be announced during the World Ports Conference Gala Dinner in Antwerp in March 2020.

The sector is already subject to national emission plans and targets under the Paris Climate Agreement. "Ports can facilitate the reduction of  $CO_2$  emissions of shipping, but the prime responsibility there lies with the shipping industry that has to meet the GHG targets of the IMO," said Verhoeven, "Ports can offer

### CLEOPATRA DOUMBIA-HENRY AND PATRICK VERHOEVEN



The WMU empowers countries around the globe to cohesively enact IMO regulation

bunkering infrastructure for clean marine fuels, but they have to know what type of fuels shipowners will be using. The same goes for onshore power supply; the investments are enormous so there needs to be a good business case. Dialogue between ship and shore is essential, also when it comes to optimising port calls to increase fuel efficiency. That is exactly what the recent IMO resolution on collaboration between ports and shipping in reducing GHG emission from ships is promoting."

This highlights the importance of the IMO for ports beyond just ship emissions and security. IAPH members are also affected by the ongoing work on electronic data exchange, single windows, autonomous shipping, places of refuge, vessel traffic service (VTS), safe cargo handling and mooring operations, anti-corruption, and more. For this reason, the IAPH plans to step up its presence at the IMO and develop a strong network with member states. "Most government representations at IMO are from maritime administrations, who are not necessarily familiar with ports. So it means we need to invest in explaining what our industry is all about and how it relates to the various topics on the IMO agenda," he explained.

Doumbia-Henry agrees that the IAPH can play a key role in the process of expanding intelligent, well-formed regulations. "One of the things is a challenge for ports is that we don't have an UN agency that specialised on ports. IMO does a bit on ports – in fact quite a bit actually – but not regulating them per se, except for the international safety and security code".

Doumbia-Henry previously worked for the International Labour Organization (ILO), liaising closely with the IAPH to develop technical standards for dockworkers. "I've seen the IAPH in action, and worked with them on safety and security issues, and they were very influential in providing technical expertise," she commented. "IAPH is an important organisation and it will be needed more and more into the future. The sustainability agenda will give it an important boost in terms of what it can further galvanise the industry [to do] to help with CO<sub>2</sub> reductions."

As the industry grapples with all of these issues, she sees the IAPH's role at the forefront. "Corruption is just one hugely important issue that the IAPH can help to tackle, as ports have an important role to play in ensuring that it is eliminated; when ships dock a lot of this happens on the ground," she emphasised. Verhoeven noted that the IAPH is already involved in this fight through its close working relationship with the Maritime Anti-Corruption Network, which is a network of shipping companies that has successfully developed a corruption incident reporting mechanism. He added, "Battling corruption first and foremost means investing in people and procedures on the ground. We can help there by facilitating the dialogue between our members, shipping interests, and authorities." On this issue, as with many others, there is plenty more work to do. PH



## Online ambitions

*Lars Fischer*, managing director of Softship Data Processing, takes a look at how Maritime 4.0 – the digitisation of the industry – is influencing ports, their customers, and the future

hile there is no doubt that, just 30 years since the advent of the World Wide Web, the shipping industry has come a long way in terms of digital adoption – it still has a long way to go. The prospect of autonomous shipping, and the benefits that can be brought about through the purposeful application of disruptive technologies across the entire shipping supply chain will, indeed, be great. However, we ought not to be under any illusion: this is for the few, not the many, unless the baseline for digital administration is vastly improved.

As a company that has provided software

solutions to the maritime industry since the advent of the internet, at Softship we often see shipping companies who misunderstand the difference between 'digitisation', converting information from a physical format into a digital one, and 'digitalisation', the process of leveraging digitisation to improve business processes. This is an important distinction, because, unless the entire industry can 'digitalise', the shipping industry will not achieve 'Maritime 4.0', the digitisation of all processes from planning through design to maintenance, as a new era in our shared history. Admittedly, this is a simple point, but one that ought to be stressed. The confusion between digitising and digitalising processes is what is continuing to hold the maritime industry back. There are many shipping companies that are assuming their business processes are improved simply because they are transferring information digitally. Yet because the systems they use are not talking to each other – not integrated, and digitalised – they are actually working far less efficiently. This causes problems, mistakes, and delays; all of which cost money.

The reason we have reached a situation, where companies are digitised but not integrated, is because over the past few decades, there has been a piecemeal approach to the adoption of software solutions. This is particularly true for the management of back-office processes. The consequence of this is that many organisations are now weighed down by the disparate systems, tools, and applications that they have taken on over time to address specific business needs.

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These programmes often overlap, disqualify each other or are utilised only in part. This is particularly common amongst ship agency businesses, yet, supply chain managers often overlook the impact of port agency and husbandry operations on the overall efficiency matrix. Port agents play a critical role in every shipping supply chain, connecting ship to shore and standing between owner, charterer, and cargo owner. How efficiently they conduct their operations, then, matters to every partner in the supply chain.

The role of the ship agent is one that is being impacted significantly by the increasing digitalisation and automation of processes in port, each of which depends upon the ability to connect and integrate with other digital communications systems. This is an important point because ports are, in the main, increasingly driven by data intelligence, but an ill-equipped port agent can easily create kinks in the system. A disconnect between the communication of information between agent and port can be especially disruptive and costly and will inevitable slow the (necessary) digital evolution of ports worldwide. However, this certainly need not be the case.

If we look first at ports, as it stands currently, there is a very wide gap between the modern, digitalised ports - Rotterdam and Singapore being leading examples - and smaller, more remote ports that make up a significant proportion of the world's maritime network. The one unifying element is that, today, all ports do rely on the transfer and communication of digitalised information to facilitate the flow of goods. Where the competition will continue to split is at the point in which big-data (the information obtained digitally as a matter of course) is analysed and applied to make tangible changes to improve the overall efficiency of services and operations.

Cloud-based services (systems accessible via an Internet browser) and purpose-built software solutions for the port sector are now more affordable, can be integrated across platforms and significantly reduce operating costs for port managers and ensure greater control over the movement of goods. However, it is the port or liner agent that is responsible for documenting the processes and sharing the information that makes it possible for goods to arrive at or disembark from a port. If the port agent is not able to administer from the vessel, or work on-the-go, the entire supply chain is impacted. More so, if they are working from outdated, outmoded

# Ship agents serve as a critical link between ship and shore

### **Lars Fischer**

Managing director of Softship Data Processing

systems and offline systems, which is often the case, there is significantly more chance that data will be shared incorrectly.

This is where industry-specific software solutions come in. Purpose-engineered, cloud-based systems available to ports are now also available and specifically designed for port agents (including Softship's advanced port agency solution - SAPAS). These solutions are designed to ensure that every administrative back-end function of a container line or port agent's operations is controlled within one system. Critically, these cloud-based systems can be used on any internet-enabled device, so agents can work on-the-go, and in real time.

There is another important consideration here. While a port agent is responsible for managing hundreds of critical tasks and administrative requirements, its role in maintaining the safety and security of the digital maritime ecosystem is also often overlooked. This creates operational hurdles in marrying digitised operations in port, but also opens multiple opportunities for cyber criminals to penetrate company networks, and quickly cause significant damage to operational capability and security. This means that port agents and other third-party service providers, if not appropriately equipped and protected, can pose a credible risk to shipping supply chains when it comes to managing cyber risk.

The onus in addressing the problem of cyber risk, in this instance, is on every business to ensure the right software systems are in place and constantly updated. They must also make sure their staff or personnel are given the tools and training to do their part in maintaining safe and secure networks. To provide some context, protection and indemnity insurer Gard last year highlighted that members had been fallen victim to phishing scams where hackers had accessed the email accounts of their service providers.

In these cases, their clients – shipowners – had been sent emails purporting to be from the shipping company requesting fees and payments be sent to different bank accounts than usual. This diversion of funds led to one ship being detained because the agents had not received funds for port clearance. Investigations showed that the original source of the infiltration was through service providers.

Therefore, shipowners, operators, and managers have to vet every agents' IT capability as a pre-requisite, to fortify themselves against cyber intrusion, which can manifest in many forms. The simplest way to do this is for the ship agent to operate using an all-encompassing software solution developed and maintained externally. This means systems are constantly adapted to the many and rapidly developing risks of communicating online.

It is for these reasons that ship agents need to carefully consider their IT capabilities, and the efficiencies and assurances it can bring to their own business, and that of their customers. Ship agents serve as a critical link between ship and shore, without which it would not be possible to move goods around the world. Making sure that the ship agent can deal with the digital demands of the future and can support digital innovation in port, then, is the key to making sure that the entire maritime ecosystem is able to evolve. **PH** 

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## Port digitalisation: Common goals

To become more efficient, ports need to work together, using data to feed collaborative planning platforms, reports *Charlie Bartlett* 

> he shipping industry in general is hindered by an insular attitude and a unique resistance to sharing ideas. There is no question that shared initiatives could improve the prospects of meeting with the IMO's 2050 CO<sub>2</sub> emissions targets, while also increasing vessel utilisation, and profits for all involved parties. But the will to undertake these measures has always come from on high, which is from regulators and the getting together of various parties is relatively rare when compared with many other industries.

> Shipowners are secretive; where one introduces new, good-faith environmental measures, one must always be looking over their shoulder for competitors who would drop such commitments for a competitive edge. Efficiency improvements are often sidelined on the grounds that they only benefit the charterer and provide no direct return-of-investment (ROI) for the shipowner, even though a more efficient ship is more attractive for all parties. At the construction phase, each vessel, even sister-vessels, are prototypes, built with different combinations of onboard equipment, presenting a barrier to digitalisation requiring bespoke solutions, too costly to be viable for the many.

> While industry criticism often focuses on shipowners, the fact of the matter is that ports also have similar issues and are reluctant to work towards an industrywide standard of transparency. Different ports or port groups such as DP World and APMT use disparate performance metrics: some measure in gross moves per hour, others in net moves. Poor access to benchmarking information makes it more challenging to identify areas for improvement, even though there are many.

> Each also uses a different protocol for communicating with the approaching vessels, with mixed results. While every vessel would ideally arrive just in time to take advantage of a newly opened unloading berth, the truth is different, and messy. Arrival and departure times are written on whiteboards and queues form. This means that vessels sitting out in the bay continue to burn fuel as they wait to dock, negating the benefits of any shore-side power installed to combat pollution.

> Help is at hand, however. In June 2019, the EUR43 million (USD47.5 million) Sea Traffic Management Validation (STM) project concluded, after a run that

began in 2015. Funded partially by the EU, it comprised 13 countries, 311 ships, 12 simulator centres, and the ports of Barcelona, Brofjorden, Gothenburg, Limassol, Sagunto, Stavanger, Umeå, Vaasa, and Valencia. The ground-breaking project has sought to improve, among many other things, the way vessels interface with ports.

The first step on this route is standardisation, and this primarily affects the way actors communicate within the port, rather than without. There were three new standards that emerged in the aftermath of the project: S-211 Port-Call message format, for standardising shipport communications; S-421 route exchange format for vessels exchanging route information with shoreside centres and one another; and S-100, for secure exchanges of data.

Using these tools, the project runners found, shipowners could make fuel savings of an astonishing 24%, a large proportion of which was achieved merely by arriving at port at the right time. Yet for every advantage the project presented for vessels, there is an interesting potential efficiency fix for ports, as well. With increased transparency along ship routes, and giving container ports information on where containers are headed, it makes sense to use double or dual-cycling, whereupon port cranes pick up a container in both the unloading and return phases of its operation. Cranes can almost double the speed of the vessel's unloading phase using this technique.

Elsewhere, groups of containers are loaded in one go – sometimes four at a time – which can achieve much higher time savings even than dual-cycling. But this is challenging when terminals keep the information to themselves. Self-evident, although, are the cost-savings to visiting shipowners, who can count on better vessel uptime profiles as less queueing at terminals means better utilisation.

Despite a slower start than expected, Maersk's TradeLens platform is gaining considerable traction with Hapag-Lloyd Ocean Network Express (ONE) signing up in the role of so-called 'trust anchors'. These are not to be confused with paying customers of the service; rather, they can be more accurately regarded as enabling cross-compatibility between their companies and Maersk's blockchain service, in order that customers can make use of it.

With the news of Hapag-Lloyd and ONE's ecosystem membership compounding that of CMA CGM and MSC at the beginning of June, TradeLens now encapsulates more than half of all container freight capacity.

"The addition of leading carriers to TradeLens will help global supply chain customers expand and explore the benefits of digitisation and deliver new opportunities to the increasing number of TradeLens ecosystem participants across the global supply chain," said Vincent Clerc, A.P. Moller – Maersk chief commercial officer. "As a neutral industry platform, TradeLens offers supply chain visibility, ease of documentation, and the potential of introducing new products on top of the platform."



The european STM validation project is a milestone in the long journey to digitalise ports Managing Director for Corporate and Innovation at ONE Noriaki Yamaga said, "The opportunities to drive greater innovation across the shipping supply chain are enormous and we are excited about the opportunity to provide our leadership and insight to help the platform continue to evolve."

At time of writing, about 20 ports are signed up to the service as ecosystem partners, including PSA Singapore, International Container Terminal Services, Patrick Terminals, Modern Terminals in Hong Kong, Port of Halifax, Port of Rotterdam, Port of Bilbao, PortConnect, PortBase, and terminal operator Holt Logistics at the Port of Philadelphia.

TradeLens is part of the contribution toward digitising processes, at port and at sea. But the major impact it will have happens once the vessel is at the terminal. Cutting out a great deal of the clerical aspects of cargo handling, it will go some way towards cutting down on port workloads, if not actually directly influencing the speed at which boxes are loaded or unloaded. There are many potential benefits of being able to grant new parties secure involvement in the movement of a box. Having this information to hand will allow port operators to apply algorithms and other technology to help them make more intelligent decisions; meanwhile, it will spare the parties involved in handling containers the cost of paperwork, which can make up half the value of some containers.

It is plain to see that these benefits also extend to the shipping industry in a broader sense. Better communication between ship and port will bring with it not only optimised arrival times and shortened port calls, but an improved capacity for the quantification and rationalisation of vessel behaviour, as well. This unlocks a brace of potential fixes, which can address questions both of profitability and environmental sustainability.

Vessels sunk into queues, or simply unduly-long unloading and loading intervals, are not contributing to the movement of goods. History has shown that owners need little incentive to order more vessels than are necessary; the greater the perceived need, exacerbated as it is by inefficient port operations, the more likely it is that owners will overorder, with the result that the industry is characterised by a surfeit of half-empty vessels. Each new vessel, especially ones that are underutilised, water-down progress toward the IMO's 2050 CO<sub>2</sub> reduction targets. By tightening-up these processes, however, ports can play a key role in facilitating a better supply-demand balance, ensuring that vessels in the existing fleet are properly utilised. **PH** 

## Preparing for the storm

The rise of modelling scenarios for extreme weather conditions influences not only port infrastructure, but also the marine insurance market, writes *Gabriella Twinning* 

eather conditions have become more extreme in recent years with tsunamis, hurricanes, heatwaves, and even cold snaps being deemed as larger risks. Given that ports are constructed along coastal areas, they are particularly exposed to the impact of such weather and can suffer infrastructural damage that can affect static items such as cranes, large volumes of cargo, and in certain cases lead to loss of life. Accordingly, correctly assessing the risk has become extremely important to marine insurers.

Catastrophe modelling, commonly shortened to cat modelling, is the process of using computerbased calculations to estimate the losses that could be sustained due to hazardous natural events or 'acts of God'. Founded in 1987, this form of modelling is a fairly recent development, and is primarily used in the insurance or re-insurance markets for risk assessment, mostly for infrastructure and property.

It was only after such catastrophes as the Tohoku earthquake and subsequent tsunami in 2011, Hurricane Sandy in 2012, which devastated the ports of New York and New Jersey and resulted in a USD3 billion insurance bill, and the explosion in the Chinese Port of Tianjin in 2015 owing to the storage of hazardous and dangerous goods, that the cat modelling industry focused its attention on ports and marine cargo. "This succession of marine and property clash events, demonstrated the need for modelling capability by which to develop a more accurate perspective of cargo and specie risk," senior model product management analyst at Risk Management Solutions (RMS) Sam Lucas told *P&H*. Chris Folkman, professional partner at the International Union of Marine Insurance (IUMI) re-iterated this point, adding that these major incidents had "surprised" the cargo industry with the hefty losses incurred. The reason for this being, "Cat modelling has traditionally focused on stationary buildings, and marine cargo has been treated as somewhat of an afterthought."

In 2016, RMS launched its Marine Cargo and Specie Model software program specifically to determine the hazards and then the vulnerability of ports and cargo stored there. The model runs more than 2,000 scenarios, including those for a particular port or terminal, and uses a combination of "science, engineering, statistics, and previous industry experience to look at all plausible events, not just the worst-case event", explained Lucas. This information can then be used by interested parties to calculate the risks and projected losses for the scenario run.

Further, the model takes into account the impact of storm surges and the effect of saltwater on cargo, factors specific to the marine industry. This information



Cat modelling helps assess marine risks sustained due to natural disasters such as hurricanes would have been crucial in minimising the losses during Hurricane Sandy where, according and AlG report, 16,000 cars were written off in the storm surge that inundated a port storage facility. The cars were stored quayside and were susceptible to even the lowest levels of flooding. According to Peter Ulrich, senior vice-president at RMS, in this case the cargo model can be used for "lessons learned and 'best practice' for future construction of ports and also where they store certain cargo items in a port as there are different risks in different areas." This kind of information output of the model is extremely beneficial to ports, especially regarding risk management and port planning.

According to Sean Dalton, head of marine, North America at Munich Reinsurance America, this type of modelling is essential for marine insurance providers providing coverage "at a known storage location such as a warehouse or distribution centre, cat modelling is of greatest benefit in assessing loss potential".

# Nobody knows where exactly the cargo is while it is in transit

Simon Keenan, Allianze Global

This view is shared by Shane Latchman, vicepresident and managing director at AIR Worldwide, another provider of marine cat modelling software, who warned that the models assess the risk instead of predicting it. AIR provides specific model packages that can be run over specific assets and portray a realistic view of potential losses.

Another useful output of cat modelling is that it provides a natural hazard assessment of the specific location being modelled, drawing from local hazard maps and site-specific studies. Hence, AIR developed their specific Japan earthquake model and AIR Australian cyclone model, for example. These models can be used to estimate losses in real time by insurers running it over a portfolio of assets as soon as the event takes place. The natural hazard assessment provided by the model could be used for future port planning, as it should deliver clear calculations of where areas are more susceptible to damage compared with others.

"With the introduction of cat modelling, underwriters have been able to drill down and determine the exact cat perils [and to what intensity] affecting a particular location and thus price accordingly," said Simon Keenan, senior underwriter marine liability, ports, and terminals, Allianz Global. With the development of specific marine cat modelling, ports should be more involved in the process as well as investigating the outputs from these models as this can prove vital, not only in improving insurance costs, but also in port planning.

Although cat modelling has helped immensely in assessing marine risks for ports, there are still further areas open for further development. For Ulrich, there remain a lot of unknowns when it comes to cargo tracking. "Nobody knows where exactly the cargo is while it is in transit. It is a bit of a conundrum that we can track a package from Amazon, from A to B but we can't track 50 million dollars' worth of Mercedes automobiles in the same way. If we could do that, we would be able to understand the risk better," he said. This point goes hand in hand with port storage, as the cargo moves quickly within a port, there will be moments when it is more or less at risk, therefore, operators and planners need to be more involved in the process to ensure risks are mitigated at all times.

Latchman further explains how the development of cat modelling can help port infrastructure in the future. Citing the Tianjin Port explosion, he envisions that by gathering additional data from ports regarding cargo storage, as cargo in ports vary over time and by season, it will enhance the models to calculate when ports are most at risk throughout the year. For example, if during the summer months a certain port with a high risk of earthquakes only stores cotton on its premises, damage from a fire would be significantly worse than that seen during the winter months. This scenario could then be used for better port and storage planning, or have ports carry out more fire drills during certain months to increase safety on the premises. **PH** 

## Planning demands smarter approach

Technology has the potential to solve many problems concerning the world's port and terminal operators, although not all of them, *Jon Guy* reports

he changing face of the global economy has created new demands for port capacity, and while emerging economies are able to dedicate greenfield sites for new facilities, port operators in developed economies are having to become more enterprising. Firms specialising in port planning say that while there has not been a boom in the demand for new ports, there are new facilities being built in Africa, Asia, and central Europe.

Some port capacity expansion demand is being fuelled by the ongoing work by China for its Belt and Road initiative, but, perhaps surprisingly, this is not particularly extensive.

Peter Beamish, technical director in the Marine and Aviation department at Royal HaskoningDHV, said, "There remains some demand for new port facilities. However, current demand is not at levels we have seen in the past. That demand is being driven by LNG [liquified natural gas] facilities."

In the past four months, Korea Gas Corporation and US-based asset management firm Energy Capital Vietnam have agreed on the framework for building a privately funded LNG regasification terminal, storage, and gas supply system in Vietnam.

It has also been announced that there is to be a multibillion-rand LNG storage and regasification terminal established at the South African port of Richards Bay by 2024.

In China, Zhejiang Energy and Shenzhen Energy Gas Investment Holdings will jointly develop a facility in Zhoushan port in Zhejiang province, and Guanghui Energy said it will build an LNG receiving terminal in Yueyang Port, along the Yangtze River in Hunan province. He added that there were also greenfield ports being constructed with the firm currently involved in two such schemes in Bangladesh.



Currently, the trend for many in the industry is how to handle greater volumes of freight while being constrained by the inability to physically expand their footprint.

Many established ports have also housed ancillary buildings and support services in the hinterland surrounding them. That leaves the port planners with a double headache: not only are they constrained in terms of the land that have at their disposal, it also restricts the ability to upgrade the transport infrastructure.

It is thus unsurprising that many port planners and operators are turning to emerging technology to seek new solutions.

Alex To, principle maritime engineer at management, engineering, and development consultancy Mott Macdonald, said, port planning was at a new stage. "Things have quite clearly changed," he said. "We are at the fourth stage of port evolution; over the past 10 years we have moved into the smart port era. The aim of the smart port is to add more value to the customer and technology is playing a huge part."

Technology is driving the ability of port planners to utilise port simulation to create better ways of working. Such techniques are creating ever more radical views of how future ports will be created, but to be said, there was more to the impact of technology than in the planning stage.

"Hamburg is seen as a leader for the use of technology in driving the creation of Smart Ports," he continued. "The aim is to drive efficiencies, reduce the time that cargos and onwards logistics firms are in the port and reduce the operating costs.

"Ports take the view that they simply cannot expand as the land is all too often not there to do so. Therefore, they are now looking at the way to make the best of what land they already have," he added.

Automation of facilities can not only drive down costs but can speed handling. The increased use of the internet of things (IoT) has the potential to reduce the familiar sight of lorries waiting outside port gates as they queue to access their cargos on the quayside.

Much has been discussed in the recent weeks about the implementation of 5G and the port community is seen as frontline beneficiaries of its implementation.

In June, Hamburg Port Authority revealed that it is working with Nokia, and Deutsche Telekom have been undergoing testing for a new 5G scheme across the port. The testing has been underway for 18 months as part of a scheme looking at network slicing, enabling those in the port to access the network via virtual networks that run simultaneously.

The key benefit of 5G compared with 4G is simply one of scale. With a 4G network you can support up to 100,000 devices per kilometre. 5G will increase the number of devices that can be supported per kilometre to 1 million. "The testbed has given us a glimpse of the huge potential that 5G and, in particular, network slicing will offer," said Jens Meier, CEO of Hamburg Port Authority (and vice-president of IAPH). "I believe the new standard will form the basis for solving tricky industry challenges and is the last push we need to make a breakthrough in terms of digitalisation. I'm proud that the City of Hamburg and the Port of Hamburg are among the first to benefit from this technology.

"Ports in general need to run smoothly and incredibly efficiently. At the Port of Hamburg, we have demonstrated that 5G can play a big role in this regard. The testing ground is delivering invaluable hands-on experience and data that will help us when implementing future Smart Port concepts using 5G communication networks and technologies like network slicing", added Wolfgang Hackenberg, board of management Germany, Nokia.

Climate change is having an impact any port planning now obligated to include environmental impact studies. "Technology is playing a role in ports' ability to understand the issues that climate change may well bring," said Beamish. "We now see technology being use in the ports to monitor water levels and water quality.

"By their nature, ports are challenged by changes in sea levels and ports are working on how they can combat those issues. It is not simply a case of increasing the height of quays but look at how ports can [be] better prepared for the heart of rising sea levels and increased storm occurrence."

The growing size of vessels is also creating new challenges and ports are placing greater focus not only on land facilities but also sea access routes. Many are increasing the depth of those route via more precise dredging activities to ensure there is ample draught for large vessels to use port facilities and in some cases seeking to extend the length of quays to provide better access for quayside machinery.

"We are in the era of Big Data," added To. "We now have the ability to collect and analyse huge levels of data. The aim is to better understand the data in order to make the port more efficient. That includes understanding the environmental challenges we face and enhance resilience.

"The International Panel on Climate Change has said that sea levels will rise from between 0.5 to 2.4 m by 2100, which potentially could be a significant change. Sensors, within the water and on land are now part and parcel of port planning to identify when conditions are problematic.

"We are at a point where cargo owners can make a decision as to how they want their cargo handled and moved right up to the point when the vessel enters the port. Lorry drivers can access road conditions and also congestion levels at the port to enable them to take a view on when they want to access the port."

He added, "Port planning is also looking at the use of wind and tidal power as they look to move towards renewable energy.

"Port planning remains dynamic but technology is at the heart of how efficiencies and improvements are not only designed but also delivered." **PH** 

Technology advancement can help ports and terminals coping with global changes



## Scaling up

The newly built ports of Tuas and London Gateway will use automation and a sustainable approach to cater to larger vessels wishing to call at the established trade hubs of Singapore and London, writes *Keith Wallis* 

> S ingapore's multimillion dollar Tuas mega port epitomises the advantages of building a greenfield facility rather than adapting a legacy terminal to changing port demands. With a forecast capacity of 65 million teu when fully completed in the 2040s, Tuas is slated to become the world's largest container terminal at a single location. That comes as Singapore saw box volumes grow 8.7% to 36.6 million teu last year, against a total handling capacity of 45 million teu at its existing four terminals. Tuas also continues Singapore's tradition of shifting port activities further west, out of the evergrowing central area, which started more than a century ago when cargo working moved from the downtown waterfront along the Singapore River to places.

> Planning for Tuas started about 10 years ago when the government's Economic Strategies Committee recommended the consolidation of all container port activities from Pasir Panjang and the city terminals at Tanjong Pagar, Brani, and Keppel to Tuas. Accordingly, in 2012, the government announced plans to relocate the port to Tuas and free up the four terminals that together cover 925 ha for redevelopment into new commercial centers of housing, shops, and offices.

> Efficiencies will come through the reduction of interterminal haulage and the automation of wharf-side and yard operations, a spokesperson for the Maritime and Port Authority (MPA) of Singapore told *P&H*. The MPA is overseeing the development of the port and is due hand over the first phase costing SGD2.42 billion (USD1.75 billion) and covering 294 ha with 20 million teu to terminal operator PSA International in 2021. Phase two, costing SGD1.46 billion (USD1.06 billion), will see some 387 ha of land will be formed to boost handling capacity by 21 million teu. Singapore engineering consultant Surbana Jurong was appointed by the government to carry out planning and engineering design and supervise construction of the port.

> With a total linear quay length of 4.4 km, wide turning basins and deep water depths of more than 20 m at the basins and approach channels, mega vessels of more than 400 m in length will be able to call at Tuas in all tidal conditions, the MPA said. Dredged material to form the navigational channels, fairways, and turning basins is being used as part of the reclamation to form the



phase one and two terminals, saving SGD2 billion in the process. Quah Ley Hoon, MPA chief executive, said a next generation vessel traffic management system that will be used to predict congestion hotspots and assist vessel route planning, a move that should reduce vessel fuel consumption and emissions.

The MPA told *P&H* that there were four main considerations taken into account when developing the port master plan. These comprised the site's sheltered deep waters, sufficient design capacity to take into account global economic and sea trade growth, the ability to handle ships of at least 24,000 teu, and environmental sustainability.

The port's carbon footprint will be reduced by using mostly electric-powered cargo handling equipment and renewable energy, including solar power. "Automation will be a key part of the new mega port, with over 1,000 battery-powered driverless vehicles and the world's largest fleet of almost 1,000 automated yard cranes to be developed," said Nelson Quek, Port of Singapore Authority (PSA)Singapore head of Tuas planning.

Commenting on the Tuas development independent port advisor, Andy Lane, partner in CTI Consultancy said, "The productivity bottleneck in almost all terminals is yard capacity and velocity. So starting with a blank sheet, PSA can right-size the yard and ensure the right ratio between yard and quay cranes. PSA has the ability to design for higher crane intensity, supported by a higher velocity yard – a luxury that does not exist at other terminals, which expand incrementally and/or are stuck with what they already have."



London Gateway, owned by DP World has been modelled for future demands Greater capacity was also the driving force for the development London Gateway, which will be the biggest logistics park in Europe covering 859,353 m<sup>2</sup>. Located about 50 km from the heart of London on the northern shore of the River Thames, this is first new port built in Britain since 1990.

Automation will be an important part of operations at both new ports

"London Gateway can handle the largest ships now and in the future and has been modelled for future demand. The criteria for developing the port – the onset of the giant ships and to bring about significant changes to the UK supply chain, was visionary," London Gateway spokesman Matt Abbott told *P&H*, adding that the port's cranes currently have an outreach of 25 containers wide



with an air draft to handle a stack of 11 boxes on deck.

With 72% of Britain's consumers within the port's orbit, development of the logistics park means goods can be distributed close to the major markets of London, the southeast and the Midlands. This negates the need for products to be transported to distribution centres in the heart of Britain and trucked back south.

To bolster the success of the park and port GBP40 million (USD48 million) is being invested in offsite infrastructure including improvements to road links to the M25 orbital expressway. A 750m-long rail spur from the port to the national rail network has been twin-tracked to facilitate freight shipments and bolster the port's green credentials. "There are 45 rail services a week. We hoping for about 40% of containers to leave by rail – now it's about 25%," Abbott said.

Since it opened in November 2013, London Gateway, owned by Dubai's DP World, has emerged as Britain's third busiest container port, behind Felixstowe and Southampton. London Gateway saw box volumes rise 38% to 1.3 million teu last year while the three berth first phase has a capacity to handle 2.4 million teu.

The former Shell Haven oil refinery at Stanford-le-Hope was earmarked by the Port of London Authority (PLA) for a deep-sea terminal as long ago as 1999, amid a perceived crunch in port capacity. But transformation of the site into London Gateway was far from plain sailing.

The site has always been devoted to heavy industry including time as an ammunition factory and the Shell Haven and Coryton oil refineries. But it is also located in an environmentally and archaeological sensitive area close to land-based nature reserves and rich fishing and shellfish grounds in the Thames estuary.

A raft of consultants were employed by the PLA and DP World to consider aspects of the port's development including hydrology firm HR Wallingford, Wessex Archaeology and Cullen Grummitt & Roe (CGR). The land-based environmental effort included the collection and relocation of 350,000 animals and reptiles including voles and snakes and the creation of two nature reserves – Salt Fleet Flats on the southern shore of the River Thames in Kent and Stanford Wharf near the port.

At sea, dredging included the creation of a 100 km-long channel, 11 km deep in places, from the port to the eastern end of the Thames Estuary near Margate that recovered 32 million m<sup>2</sup> of sand - roughly equivalent to the 1 million tonnes of sand and silt used to build the quay which extends 400 m into river. London Gateway has been built as largely fully automated port with an all-electric and container stacking system, a ban on the loading containers straight onto trucks, the use of hybrid shuttle carriers. Solar panels have been installed on container handling equipment to keep auxiliary systems running and reduce fuel consumption.

Abbott said the advantages of developing London Gateway over an organically grown facility port means, "We can build to current and future scale and respond to market trends." **PH** 

### FEATURE



# Unravelling the dangers of container lashing

Within just a year, four crew have died during lashing work, intensifying calls for tighter regulation and raising questions over pressures being put on crew to flout safe working practices, **Zoe Reynolds** reports

espite the recent death of a ship's officer on the St Lawrence, Canada, unlashing containers on the river continues unabated. Second officer Ravindu Lakmal Pieris Telge fell overboard after working at height on board the Singaporean-flagged *Maersk Patras* on 19 May 2019. It was just two days after his 29th birthday.

Authorities called off a search-and-rescue operation after a day-long air and sea rescue found no trace. "As the port Chaplain at Montreal, I visited *Maersk Patras* on Monday evening on 20 May when she berthed [at] Pier No 77," Father Andrew Thuraisingam told *P&H* sister publication, *SAS*. "The seafarers were in shock," he said. "I contacted the family members in Sri Lanka. When I was trying to console them, they were requesting my prayers for their son's slim hope of survival."

In a statement the following day, Soren Toft, chief operating officer of AP Moller-Maersk said, "It is with regret we have received the news that the searchand-rescue operation was unsuccessful, and we must conclude that we have lost our colleague."

Telge is the fourth world seafarer to die in lashing accidents in a year – two occurred onboard container ships, with two of the other incidents reported in Ireland, and the third in New Zealand. When working at height, crew must be kitted out with appropriate personal protective equipment (PPE).

However, Telge was not wearing a life jacket or harness when he fell off the top of a stack of containers on the 31,333 gt vessel into chilling 6 °C waters.

### The whole thing is a recipe for disaster. It's outrageous. It's not the 1970s anymore. Containers everywhere [should be] lashed when vessels are alongside

### Peter Lahey, ITF Co-ordinator

"The vessel was westbound for Montreal slow steaming, waiting for the pilot to board," said Vincent Giannopoulos, Inspecteur International Transport Workers' Federation, Région du St. Laurent et Grands Lacs.

It was reported that the weather was fine as the vessel continued slowly on. The lashing team roster obtained by *SAS* shows it was all hands on deck that day, with some crew inexperienced in container lashing. "Most of the crew assigned to lashing, including the cook, mess man, engine crew and navigation officers, were not qualified deck workers," said International Transport Workers' Federation (ITF) co-ordinator Peter Lahey.

The ITF did the initial review of the fatality alongside Transport Canada. According to Giannopoulos, Telge was rostered on lashing after working the 00:00–04:00 watch and slept through the group cargo safety meeting. To make up for this he was reportedly given his own 'private' briefing before commencing unlashing work.

He was handling a 4.5 m-long, 22.5 kg lashing bar, reaching up to the top of the second container. At this point the bar began to swing and the weight took him overboard port side. It was 09:28. The crew began yelling 'man overboard' over the radio, Giannopoulos reported. As soon as the captain could make out the shouting he hit the man overboard (MOB) button and called for help over the radio to the pilot boat and nearby ships.

"Our initial investigations raised serious questions about crew fatigue and the safety procedures on board," said Lahey. Unions, however, are pointing the finger at Transport Canada and the port authority, rather than Maersk, for the fatality.

"Maersk was probably the best actor in all of this," said Lahey. "The vessel was sailing under the requirements. Montreal is the only major port in Canada [or the world] where large container vessels are required to unlash before coming into port."

Montreal was once a bulk port, but now container traffic has increased. Not only this but the container ships coming into the port are much bigger than vessels the port used to handle: the port announced a 5th consecutive year of record tonnage for 2018 in January – a 9% increase in 12 months to 1.6 million containers.

The ITF carried out a two-year investigation between

2016 and 2017 into the practice of unlashing on the St Lawrence River, interviewing ship's captains, officers, and crew. Crew testified how difficult it was to unlash, sometimes in the dark, in sub-zero temperatures, and gale force winds.

Lahey said that the findings confirmed that unlashing was often started hundreds of kilometers before the Les Escoumis pilot station, primarily in winter, when daylight hours are short and lashing bars are frozen. He added, "We suspect that with the increased size of vessels in less then optimal summer conditions that crew cannot complete unlashing and lashing within the historic allowable zone."

Freezing rain is a major environmental and safety hazard, common along the St Lawrence River, according to the Department of Atmospheric and Oceanic Sciences, McGill University, Montreal. It is characterised by cyclonic couplets and can have a "devastating effect on people, property, and commerce".

In a nod to its measures to protect its seafarers, Lahey said that Maersk is one of the only companies that "supplies their crew proper winter gear for working on deck in temperatures that hit minus 40 with wind chill".

From their investigation findings, the ITF made a presentation to Transport Canada last year to put forward their case to ban the practice of crew lashing and unlashing containers while the ship is moving in Montreal.

"We played them audio tapes, saying how difficult it was to lash in those conditions; how difficult it is getting the ship in unlashed. They said, 'That's horrible.' Then they went to consult with the shipping industry, ports, and there was an enormous push back. They did a few inspections and deemed it to be safe," said Lahey.

This stance does not look set to change any time soon. A spokesperson for Transport Canada told SAS it was common practice for crew to unlash containers on ships while in transit on the St Lawrence River between Les Escoumins and Montreal. "Although this practice is unique to the Port of Montreal, it has been deemed acceptable by Transport Canada since the transit is in sheltered waters," he said.

Transport Canada held meetings with the unions last year and was consulting with various stakeholders, he added, stating that the practice was in accordance with the International Maritime Organization (IMO) Safety of Life at Sea (SOLAS) Convention, and Canadian regulations and requires no formal approval by Transport Canada.

In a letter to the Montreal port president and CEO in July, Lahey described unlashing on the river as potentially "catastrophic for the image and reputation of the Port of Montreal" and "for the health and safety of sailors". He blamed the practice for the death of Telge and alleged the port had failed to report a series of lashing accidents. "Our access to federal information requests have indicated that no accidents or incidents

ITF has requested to ban the practice of crew lashing and unlashing containers while the ship is moving in Montreal



Following existing guidelines, Maersk Line only allows lashing and unlashing while the vessel is at anchor have been reported to the federal authorities in the past five years for lashing work done by sailors," he wrote. The port did not respond to this allegation when contacted by SAS.

Lahey said he was disappointed that the Canadian Transportation Safety Board had declined to do an investigation into the fatality. "The whole thing is a recipe for disaster," said Lahay. "It's outrageous. It's not the 1970s anymore. Containers everywhere [should be] lashed when vessels are alongside.

"They've passed responsibility for an incident that happened in Canadian territory to the flag state of Singapore where it will be brushed off," Lahey alleged.

The issue is therefore far from over, with the ITF unwilling to see further deaths occur. At the time Telge fell overboard, the ITF investigation was already underway and caused outrage at the federation.

An IMO spokesperson suggested that the ITF could take the issue to the wider maritime industry to effect change. The spokesperson told *SAS* that as the ITF has consultative status on the IMO, it could raise the issue for discussion in a bid that member states could then call for amendment of SOLAS.

Under the current IMO conventions, only ro-ro vessels are required to secure cargo before sailing.

A report by the Dutch Safety Board into a similar fatality in the Bull channel of the Humber Estuary in the UK on 3 September 2014 concluded that the practice of unlashing before the vessel reaches port is motivated by commercial pressure.

While it saves time in port, it creates tension between financial interests and crew safety.

In the case of the container ship *Freya*, once the pilot was on board inner lashing rods could be removed. However, the outmost lashing rods were to stay in place until the ship was in port to avoid the risk of people or containers going overboard.

The 28-year-old Indonesian seafarer was working on the outer edge of the deck, at night when he fell overboard at 20:50 local time.

A crew member saw him fall, threw a lifebuoy into the water and called the bridge to alert the captain. The captain informed the pilot and issued a general alarm and marked the MOB position.

The Humber Vessel Traffic Service was informed and lifebuoys and smoke markers were also thrown overboard. Due to oncoming traffic, the vessel had to wait about 17 minutes before it could turn around and conduct a search along its original course, and an MOB boat was launched from *Freya* minutes later. Despite extensive searches with a second pilot boat, lifeboat, helicopter, and nearby vessels the crew member was not recovered, and has not been found to this day.

The report noted that Holwerda Shipmanagement, that managed *Freya* at the time of the incident, was aware of the "adapted working method" of disconnecting the innermost rods to speed up the unloading process, but stressed this should only occur just prior to arrival, and the outermost rods should never be disconnected when sailing.

Pressure often comes from the unloading locations that are keen to start loading containers straight away. "It has even happened that attempts have been made to hoist containers from the ship before it is berthed", the report said, stating that the shipping company noted how this puts pressure on the captain and his ability to "find a good balance in relation to safety".

Lashing at sea is a well-established practice, especially on open register vessels, according to Peter Van Duyn, director, International Cargo Handling and Coordination Association, Melbourne, Australia. A vessel, however, is more stable when it is secured alongside the wharf. It is usually well-lit at night (using the portainer crane as a source of lighting), he said.

"While at sea, in the dark, there is usually not much lighting available on deck. Hence the recommendation for the lashing to be done by qualified shore-side personnel when a vessel is alongside," Duyn told SAS.

The ITF maintains that this should be the rule for all lashing work. It reached an agreement with the Joint Negotiating Group of shipowners (including Maersk) in the 2018 International Bargaining Forum.

As it stands, the issue over unlashing practices remains and Transport Canada investigations are ongoing. Meanwhile, Maersk Line told *SAS* they had taken preliminary measures on top of existing guidelines, allowing lashing and unlashing to be carried out only while the vessel was at anchor. **PH** 



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# Strategic defence for Swedish hub

Changing geopolitics are highlighting the strategic importance of Gothenburg port, writes *Dr Lee Willett* 

Aval forces have long provided security to enable maritime trade to flow between ports along well-established sea lines of communication (SLOC). Today, with state-based rivalry at sea returning, threats to such SLOCs are becoming more prominent. This is evident in the western Baltic and the North Sea regions, where strategic competition is having broader regional security implications.

The US-led Baltic Operations (BALTOPS) exercise in June 2019, which involved many NATO and partner countries, focused in large part on securing SLOCs into and across the Baltic. The increasing naval focus on the Baltic also means that the Skagerrak/Kattegat straits, which connect the Baltic Sea to the North Sea and beyond, have become a new strategic SLOC on the global shipping map.

Between the Skagerrak and Kattegat straits sits the port of Gothenburg, one of the largest maritime hubs in Europe and strategically critical for trade from Europe to the wider world. The potential impact of increasing regional rivalry is underlined by growing Western politico-military focus, for example, with Sweden and NATO member states building greater naval presence. Gothenburg is a key strategic asset for Sweden, Scandinavia, and the wider international community. The large port is a primary hub for the export and import of automobile products. Other regional states also rely on Gothenburg. For example, the port is a primary export node for Norwegian salmon.

According to the port administration, other resources being exported through Gothenburg include steel, energy products, and wood-derived raw materials from Swedish industry. From an import perspective, products include high-value technical machinery, and large volumes of clothing.

An assessment of the products that passed through the Swedish hub in 2018 underlines its international significance. According to data published by the port of Gothenburg in January 2019, the volume of standard twenty-foot equivalent unit (TEU) containers passing through the port rose by 17% from 2017. There were 23.4 million tonnes of energy products handled in 2018.

Maritime trade is strategically significant for Sweden. Talking at a naval conference in Stockholm in May, Royal Swedish Navy (RSwN) chief Rear Admiral Jens Nykvist said, "The importance of the sea is immense. Sweden is to be considered an island." Noting that about 90% of Swedish trade goes by sea, the admiral cited data from the Swedish Maritime Administration, which noted that in 2018, 170 million tonnes of goods moving to and from Sweden were transported by sea.

"Maritime trade is vital for Sweden," Nykvist emphasised. "We take the just-in-time deliveries for granted. This worries me. The flow of goods is not only vital to Sweden but also valid for all countries surrounding the Baltic Sea. If it should stop – even for just a few days – it would have large impact.

"This is also one of the reasons why you need a navy, to make sure the lifeline can work," he added.

The strategic importance of Gothenburg and wider access to the west coast region is highlighted by Sweden's increasing defence and security focus there, despite the importance for Sweden of the eastern Baltic region. This focus is spotlit by several developments. First, an increasing number of RSwN exercises, including combined training with partners such as the US Navy, are taking place in Swedish west coast waters. Second, the cross-party Swedish Defence Commission – in its latest white paper (published in May 2019), assessing Sweden's security situation and required defence capability for the 2021–25 timeframe – proposed establishing a new amphibious battalion on Sweden's west coast.

According to the Commission, there is a need to base an amphibious unit on Sweden's west coast around Gothenburg to help secure and protect Sweden's western links. Nykvist emphasised on the strategic importance to Sweden of its west coast, where Gothenburg is located. "The west coast is vital, because it's the main side of Sweden where we bring goods in and out." **PH** 



## India cabotage reform fuels trade

A year into India's cabotage policy liberalisation, the reform measures are driving changes throughout the country's maritime supply chain, **Bency Matthew** reports

> Www ith the revised cabotage law, enacted in May 2018, foreign-flagged ships can transport laden export-import containers for transhipment and empty containers for re-positioning between Indian ports without any specific permission or license. Furthermore, a host of bulk and project cargoes (non-containerised) have been opened to foreign fleets on coastal routes. In the past, coastal trade had been exclusively reserved for Indian tonnage because the government wanted to insulate domestic carriers, especially state-owned Shipping Corporation of India (SCI), from the onslaught of international competition.

> "The supply chain lag time and transhipment at a foreign port increases cost to the exim [export-import]

trade, adversely impacting the competitiveness of Indian traders and manufacturers in the global market," Mansukh Mandaviya, India's shipping minister said, announcing the abolition of restrictive cabotage rules.

Although it is too early to form a definitive opinion on the pros and cons of heightened competition in such a short period, new government data signals a positive trend towards the intended goals, and industry stakeholders generally appear bullish on India's resurgent coastal shipping outlook.

The Container Shipping Lines Association (CSLA), the representative body of foreign shipping lines in India, has been particularly vocal in highlighting pent-up demand for transhipment handling at Indian ports because of the cabotage relaxation. According to CSLA's latest reporting to the India's Ministry of Shipping, such combined incremental cargo gains – meaning redirected shipments on mainline calls – for Indian ports have averaged 100,000 teu a month in the March-to-May period.

Maersk Line, the largest carrier to and from India, has also positioned itself to take advantage of growth opportunities fuelled by the unrestricted, freer market environment. "We are using this opportunity to increase transhipment at ports in India, position empty containers in deficit locations, and optimise the ease of doing business for importers and exporters," Steve Felder, Maersk's managing director for South Asia, said.

Buoyed by that improving trade outlook, many other long-haul carriers have also begun broadening their ports of call on the Indian coast. For example, niche intra-Asia liner Wan Hai Lines recently began calling at Tuticorin and Cochin, in addition to Jawaharlal Nehru Port Trust (JNPT), on its China-India II (Cl2) service, with an eye on Indian east coast cargo usually transhipped over Colombo, Singapore, and Port Klang.

The Cochin call addition holds considerable significance, given that the harbour hosts India's first full-fledged container transhipment terminal, operated by DP World. The USD600 million Vallarpadam Terminal began operations in 2011 but has thus far struggled to make any significant mark on its efforts to recapture Indian cargo transhipped through Colombo due to limited mainline connectivity – a shortcoming the Dubai-based company largely blames on uncompetitive, regulated vessel-related tariffs levied by the landlord port.

"To attract the next generation [of] deep draft vessels, additional steps need to be taken such as competitive marine charges as other hubs including Colombo enjoy pricing flexibility and offer more competitive rates compared with Indian ports. Along with this, a move towards a market determined tariff, investment in stateof-the-art technology and maintaining deeper drafts are among other measures that will boost the sector to make it more attractive and support India's trade growth," DP World Subcontinent said.

However, the terminal giant, which has six concessions over five Indian ports, said the cabotage reform is a positive step and expected to help perk up coastal shipping and transhipment operations at Indian ports.

Indian ports handled a combined 16.5 million teu from April 2018 to March 2019, of which about 3 million teu were transhipped through various foreign hub ports with Colombo topping the chart. However, arguably owing to the cabotage relaxation, the pace of foreign transhipment seems to have slowed down, as that number in the previous fiscal year stood at about 3.2 million teu against a total of 15.3 million teu, according to government data collected by IHS Markit.

"Both the coastal trade and the transhipment of containers from Indian ports have shown an increase subsequent to the relaxation of licensing conditions for plying of foreign ships for specified types of cargoes," Mandaviya said during a recent parliament session.

Foreign transhipping has been more pronounced in India's east coast region, where ports, particularly busier Kolkata and Chennai, lack the necessary water depth, other infrastructure capabilities, and sufficient gateway traffic to woo direct mainline calls. As a result, these ports have been relegated to the role of feeder handlers, which involves sending and receiving Indian cargo through international hub ports. This relayed operation causes several challenges – extra shipping costs and longer transits – thus undermining the competitiveness of Indian merchandise in global markets.

Although some positive signs are emerging, India's foreign transhipment problem is rooted in many other inherent factors, so a maritime policy reform alone is not

an antidote. High vessel-related charges and lagging productivity are major concerns for mainline operators wishing to offer direct calls at Indian ports.

Earlier this year at a trade event in New Delhi, the Associated Chambers of Commerce and Industry of India (ASSOCHAM), the country's premier industry body, debated various problems plaguing Indian ports and sought government intervention to fix them – particularly the thorny question of vessel-related tariffs – through stakeholder consultations and policy actions. "We find the Indian port charges to be an additional burden for India's export-import trade [because] they are high relative to many countries, which is not conducive to promoting a healthy competitive environment. To create and sustain a competitive environment and to develop hub ports, India must compete with foreign hub ports in terms of cost, productivity, and service levels," said Felder.

"To cite an example, if we look at Colombo in Sri Lanka, the number of sailings is far greater than warranted by the domestic market. This frequency is generated by transhipment volumes and hence, local import-export trade is promoted and enabled," he added.

The government, yet, maintains that the full benefit of any sweeping reform will be visible in a longer period. "Transhipment at a port or terminal takes two to three years from commencement to firmly establish itself on international routes and hence, the recent cabotage relaxation by India, coupled with infrastructure push, tariffs, [and] procedure simplification such as interterminal transfers is expected to take some time to manifest the full impact," an official cabotage review note stated.

At the same time, Indian shipowners see the cabotage rule change as a flawed, irrational economic policy that can seriously harm domestic fleet developments – a stated government vision. They are also deeply worried about a purported government move to lift the firstright-of-refusal (ROFR) mandate long enjoyed by them over cargoes controlled by state-owned enterprises. Under the ROFR programme, an Indian operator has the right to match the lowest price quoted by a foreign carrier in public tendering.

However, for cargo interests, it all boils down to cost gains from greater competition and to that end, there are some positive signs. Amid fears of slackening freight demand, as more inland volumes shift to sea because of the coastal shipping push, intermodal rail giant Container Corporation of India (Concor) recently put a "tariff freeze" through the end of the current fiscal year in March 2020. With an expansive inland network, stateowned Concor dominates India's containerised rail.

With robust GDP growth forecasts – hovering around 7%, combined with a burgeoning middle class, India represents a lucrative freight market for foreign carriers battling lacklustre demand in larger global economies. The cabotage refining is certainly music to the ears of those targeting the emerging Asian nation. **PH** 

Jawaharlal Nehru Port Trust is India's largest transhipment container handling terminal premises in Mumbai.

![](_page_27_Figure_1.jpeg)

![](_page_28_Figure_1.jpeg)

Source: IHS Markit - Ports and Terminals © 2019 IHS Markit/Shutterstock: 5100761

### FEATURE

![](_page_29_Picture_1.jpeg)

## **Compliance conflicts**

Ports are on the front line of enforcement for the IMO 2020 global sulphur cap, but are hampered by fuel quality, transparency, and legal authority issues, writes *Charlie Bartlett* 

n the build up to implementation of the IMO 2020 global sulphur cap, scaremongers have been ringing alarm bells virtually every day about a potential crisis. A year ago, they were focused on the availability of space at shipyards, warning that since every ship would have to have a scrubber fitted, there would be giant bottlenecks. Combined with this were the warnings about long-term heavy fuel oil (HFO) supplies – an issue that is still making the discussion rounds. Others warned that low-sulphur fuel bought in good faith would be contaminated with the sulphurous residues from bunker barges and pipes that once carried HFO.

Perhaps the warning with most credence came in the wake of the Houston fuel contamination disaster in mid-2018, which caused issues in a number of vessels that included the sticking or seizing up of fuel injection system components and blocking of fuel filters. If a wide spread contamination incident were to occur post-2020, the results would be disastrous. Insurance claims expert Amanda Hastings cautions readers against assuming the worst. "No one has gotten to the bottom of why the fuel was contaminated in Houston, and there were at least two different strains of contaminants, so it's difficult to predict if this was a one-off case or if it is likely to happen again," she told *P&H*, adding that the incident should serve as a warning against bulking out fuel stock. However, an issue that perhaps has not been touted as enough of a problem is that of enforcement of the sulphur cap, given that once a ship gets to sea with non-compliant fuel on board, there are no immediate blocks to unethical behaviour. In fact, it is ports that are serving as the front line for policing compliance with the 0.5% sulphur level.

"It's actually our problem if shipowners do not comply," Andreas Chrysostomou, CSO Tototheo Maritime and CEO Marine Fields Holdings at Marinefields said at the IHS Markit 'Countdown to Compliance' conference in June 2019. "What we have in place – that is, Port State Control – does not work." One of the reasons for his statement is the fact that government support for their Port State Control authorities varies tremendously, particularly in developing nations. For example, Indonesia had previously stated that it was not planning to enforce the sulphur cap from the implementation date, due to a surplus of 3.5% sulphur HFO at the refineries of local energy company Pertamina, meaning the fuel would have been made available for Indonesian-flagged vessels to use in the country's territorial waters until all of it was sold off. However, public pressure following the Reuters story that uncovered this issue has meant that Indonesia has since reversed its decision and will comply with the global deadline.

There may still be a market for the Indonesian fuel given that many global ports are expected to shut off their supply of HFO due to lack of interest. "There are a number of shipowners who are investing in scrubbers," Gijsbert De Jong, marine marketing and sales director at Bureau Veritas warned the conference attendees.

New low-sulphur fuels are likely to be inadequately tested and may be unstable or contaminated Refineries could introduce new technologies to get more higher-fractions out of the same amount of crude. "For refineries, it takes USD1 billion a year to fit new cracking equipment," De Jong continued. "There will be different ways to use the residuals from the refineries."

However, not every refinery will be minded to invest such an enormous sum for a coker, and so it is likely that the surplus of high-sulphur residues at oil refineries will increase as more crude is cracked to provide enough higher-grade, distillate fractions for vessels looking to switch away from HFO.

Unfortunately, this makes it likely that black markets will spring up – and if they did, they would be concentrated in the global south, where ports and Port State Control authorities are less likely to enforce the regulations – and some might simply be bribed to look the other way.

"It's a coastal issue," Chrysostomou said. "Not many countries have the capability to patrol. If we want compliance from day one, we're going to need to change the system of patrolling and policing from the current one, which has not changed since the 1960s. We need there to be more incentive not to pollute if we want immediate compliance."

The fact that bunkering as it stands is particularly centralised will work to the IMO's advantage, Ronan Graham, associate director at IHS Markit, explained. "Around 60% of all bunkering is performed in the top 10 ports, which will facilitate compliance."

Nevertheless, history has shown that maritime regulation is far from binding across the board. In the United Arab Emirates, for example, ships and crews are abandoned haphazardly thanks to a lack of enforcement of the Maritime Labour Convention (MLC 2006). It is common knowledge among shipowners that here, they can break the rules without facing repercussions. That this also happens to be the world's crude oil capital, situated at the crossroads of East-West shipping trades,

elicits the question: will owners and charterers be held to account for illegal bunkering? "There is a difference in enforcement depending on jurisdiction," Graham told audience members. "In Africa, for example there will be very little enforcement."

Scott Herring, of Parker Kittiwake, has one solution. He believes that private agencies, not governments, ports or flag states, ought to be in charge of ensuring compliance with the sulphur cap. "The IMO have set these rules, everyone understands them, but who is going to police them?" asked Herring. "Port State Control authorities, it seems, are setting their own fines. Private companies could be the solution here. This could be a worldwide, global solution."

Certainly, no shortage of commentators suggest that fines, as they stand today, will not be high enough to deter owners who could make the cost back in a few months by flouting the law. However, muddying the water even further is the fact that many vessels acting in good faith risk contamination through no fault of their own, which will introduce an additional complicating factor likely to make the sulphur cap generally more difficult to enforce. "We need a much higher level of transparency within the bunkering industry," De Jong said. "There are very few people who can tell you what is in the fuel reliably.

"Diesels are very forgiving machines, and will burn almost anything. One of the ways we can resolve the known unknowns is by sharing information between owners and fuel suppliers. Once you know the problems, that's how you can improve standards."

But Herring insisted, "The technology [for testing] is there, and this equipment has been around for decades. There are some very diligent owners and operators doing tests every day. We have advised for many years to do your homework. It's not as simple as burning low-sulphur fuel."

Given the unstable and inadequately tested nature of new low-sulphur fuels, it is likely that there will be contaminations, flocculation, losses-of-propulsion, and other problems before the post-2020 landscape fully shakes out, and this is likely to be used as a defence by owners who are caught using HFO without a scrubber.

"Unfortunately the burden is with the owner, and no matter what is said about the compatibility, there will be risks when loading bunkers in different ports," said ABS executive vice-president global marine Kirsi Tikka. "The general advice is not to mix. One of the things we really recommend owners to do is make ship implementation plans to identify where the potential problems are.

"When we had the change in ECA areas to 0.1% sulphur, there were a number of problems when vessels switched. Fortunately, there was a lot of training put in place, guidance, and we have not had those problems in California since then. The ECA vessels are a small percentage of the global fleet, however, it does give us a case study insofar as it's important to identify these hazards and put procedures in place." PH

![](_page_31_Picture_1.jpeg)

Wind turbines in Taichung Port of Taichung has been undergoing renovations and hydrographic surveys as it has been designated a base for the development of offshore wind energy. The works were set in motion early in mid-2016 when President Tsai Ing-wen announced plans to develop green energy and to phase out nuclear power by 2025.

Coal dominates Taiwan's energy mix, while the island's three nuclear power plants account for 14% of electricity generation and renewables, such as wind, solar, and hydropower, which account for 6% of electricity generation. The government wants to increase the ratio of renewables in the energy mix to 20% by 2025, with wind accounting for 40% of this proportion.

In May 2017, Taiwan's Ministry of Economic Affairs (MOEA) unveiled the nation's eight-year green energy development plan, one of the ambitious projects under the Forward-looking Infrastructure Development Programme. Under this plan, natural gas is expected to emerge as the dominant power source, at 50%, while the proportion of coal in the energy mix is expected to be reduced to 30%.

The Forward-looking Infrastructure Programme included a TWD2.5 billion (USD81.82 million) budget to upgrade Taichung's port infrastructure to turn the port city into a base for the development of offshore wind energy. The funding went towards renovating docks 5A and 5B in Taichung port and building a new wharf, No 106, with those areas to be used to assemble offshore wind power generator components.

Docks 5A and 5B, with combined berth length of 400 m, have the capacity to withstand 50 tonnes/m<sup>2</sup>, enabling the discharge of the heavy components. Wharf 106, with water depth of 16 m, has a 425-m long berth, of which 100 m is designated to be heavy-bearing, and the rest can take lighter cargoes. The heavy-bearing part can take up to 40 tonnes/m<sup>2</sup>.

The first phase of wind turbines was installed in November 2016. In April 2017 Formosa 1 Offshore Wind Farm, Taiwan's first offshore wind farm, began to produce 8 MW of power. Danish energy group Orsted has a 35% stake in Formosa 1 Offshore Wind Farm, whose other stakeholders are Macquarie Capital, which is part of the Australian investment banking group, Japanese power producer JERA, and Swancor Renewable, a unit of Taiwanese chemical manufacturer Swancor Holding.

On 13 March 2019, the Taichung branch of Taiwan International Port Corporation (TIPC) signed a memorandum of understanding (MOU) with the British Office to co-operate in developing wind farms, as Taichung would like to learn from the UK's long experience in harnessing wind energy.

The British Office's representative, Catherine Nettleton, said, "This MOU signing coincides with the recent announcement by the UK government of a new offshore wind sector deal in the UK, which commits more government resources to technology innovation, will provide long-term certainty for industry to deliver a low-cost and clean energy system for the UK, and will broaden our offshore wind skills base." She pointed out

that the UK has the biggest offshore wind capacity in the world, and with this, the country hopes to share its experience and expertise with TIPC and other offshore wind partners in Taiwan.

TIPC's Taichung branch president, Chung Ying-feng, said that his office has plans to provide diversified services, including port infrastructure (such as heavyloaded wharf and land), logistics services, wind turbine bases, and wind farm training.

Chung said, "We aim to borrow the UK's forwardlooking development experience in offshore wind farms in order to broaden our global horizon as a green energy port and enhance the performance of related port facilities and services. Hopefully in the future, we can have even more exchange of information on related offshore wind harbor and marine affairs."

Work on the second phase of Formosa 1 Offshore Wind Farm, involving the installation of 30 wind

# The availability of capable vessels is vital to deliver projects successfully

Ethan Wang, CWind Taiwan commercial director

turbines and 20 German-made monopile foundations, began in mid-2019. In June 2019, vessels transporting the wind turbines and monopile foundations began arriving in Taichung.

UK marine engineering group Seajacks UK, which specialises in offshore wind power installations, sent its self-propelled jackup vessel *Seajacks Zaratan* to install the Siemens wind turbines while Dutch heavylift shipping specialist Seaway Heavy Lifting's vessel *Seaway Yudin* installed the monopile foundations. The second phase of the wind farm, with generation capacity of 120 MW, will start commercial operations at the end of 2019.

Taiwan International Ports Corporation has provided 100 ha of land to Taichung port and will spend TWD350 million building roads and other infrastructure to attract investments from domestic suppliers that produce parts for wind power generators. A thousand wind turbines will be built on land and offshore in Taichung.

Most of the sites chosen by MOEA to install wind turbines are off the coast of Changhua, which has been identified as ideal for wind energy development. Apart from being an international port and the nearest seaport to the wind farm, Taichung was chosen as a base because it is a deepwater port that can accommodate large ships that are needed to transport parts for turbines.

Formosa 2 Offshore Wind Farm, to be built next to Formosa 1 Offshore Wind Farm off Miaoli county in Taichung, and with planned capacity of 376 MW, passed an environmental impact assessment and obtained an operating licence in 2017. This wind farm, which is being developed by the same consortium behind Formosa 1, will be built in 2020, with operations slated to begin in 2021. Forty-seven wind turbines will be installed for Formosa 2.

In June 2019, Belgian dredging specialist Jan De Nul, which handled the engineering, procurement, construction, and installation of subsea cables for Formosa 1, was also awarded the same contractual functions for Formosa 2.

Taichung port's Industrial Zone (II), occupying an 80-ha area behind wharves 100 and 106, has been set aside for turbine manufacturing. Firms that have already committed to investing in this industrial park include New Excell, Yeong Guan Group, and Yung Cheng Industries. Additionally, one section of the park has been designated for use by state-owned utility Taipower as ash ponds. Wharf 106 will be used for the delivery and shipment of wind turbine components.

While Taichung is the centre of the action in Taiwan's push for wind energy, Taipei port has been designated as the venue for relevant maintenance and repair work. The wind farm project will also need qualified manpower and, in this regard, Taiwan International Wind Power Training Corporation, a joint venture involving TIPC, Taipower, China Steel Corporation, CSBC Corporation, and Swancor, opened a training centre in Taichung in January 2019.

The training centre offers courses ratified by the Global Wind Organisation, to train technicians and to impart safety and rescue education. The courses are conducted by CWind Taiwan, a joint venture between CWind and Taiwanese survey and crew transfer vessel service provider International Ocean Vessel Technical Consultant (IOVTEC).

CWind Taiwan, which also carried out bathymetric surveys prior to the building of the wind farms, has also been engaged to provide crew transfer vessels, both for maintenance work and for construction relating to the wind farms.

Its Taiwan-flagged *Ocean Surveyor 3* has been chartered to assist in the maintenance work of Formosa 1 Offshore Wind Farm until October 2019. Jan De Nul has also chartered another crew transfer vessel, *CWind Phantom*, which was reflagged from the UK to Taiwan, to assist in the construction of the second phase of Formosa 1.

CWind Taiwan commercial director, Ethan Wang, said, "In this immature but rapidly growing market, the availability of capable vessels, manned by highly skilled crew with local knowledge, is vital to deliver projects successfully. CWind Taiwan has growing access to specialist vessels and experienced local crew and has been serving Formosa 1 Offshore Wind Farm since 2015. We look forward to working closely with our partners during the second phase of this milestone project." PH

![](_page_33_Picture_2.jpeg)

## Domino effect of cyber attacks

As ports integrate technology, the impact of cyber attacks is rising, write *Peter Cook and Joe Charlaff* 

he threat of cyber attacks on ports is something that the world is waking up to. Urging ports to step up their cyber planning, the United Nations Conference on Trade and Development (UNCTAD) Maritime Transport Review 2018 noted that cyber threats are "a factor that is evolving at an accelerated pace with potentially profound implications for port operations". As the industry moves towards digitisation and automation, that threat is only set to grow – and there has already been a string of cyber attacks on ports.

In 2011, narcotics traffickers recruited hackers to infiltrate the computerised tracking system at the port of Antwerp so they could identify the containers carrying their contraband and divert them without a trace. In 2013, to prove a point, a security company attacked shipping and maritime operators in Japan and the Republic of Korea to extract documents, emails, account credentials, and passwords to prove what can be done. The following year, it was discovered that malware had been embedded at the supplier factory into scanners used to check inventory items being loaded or unloaded from ships and in the logistics chain. This malware infiltrated servers and collected financial and other data.

Perhaps the most high-profile instances of cyber attacks in the maritime world are that of AP Moller Maersk, which was hit by the malware NotPetya in June 2017 and resulted in a declared loss of USD300 million; and shipbroker Clarksons which saw share prices fall 2.7% after criminals released confidential client information in an effort to extort a ransom.

Until quite recently the operational technology (OT) systems, which monitor or control physical devices and processes of port facilities and ship's systems, have been kept discrete ensuring that a cyber attack on information technology (IT) would not affect the physical operations of the port. However, the rising trend of smart ports, introducing increased digitisation and the convergence of IT and OT systems. This interoperability increases efficiency and productivity but also exposes a critical vulnerability of any port if not secure.

In June and July this year, the Israeli ports of Haifa and Ashdod experienced disruptions at the port's cranes that were assisting in unloading ships resulting in the workers having to shift to manual operation of the cranes. This caused severe, unexpected delays to the unloading process

The disruption affected systems installed at the ports guide the cranes that worked through a GPS system that is connected to the port's main transmitter. "The problem is that when the cranes don't know where they are, they can't find containers to pick up, and don't know where to put the ones they have. Reverting from automated to manual operation is so time consuming that a port is effectively shut down" said one official. The problem was eventually overcome by the use of sensors that override the GPS system in the cranes.

While experts have put forward theories as to what caused the GPS malfunction - including a suggestion that this was an effort by the Russian state to prevent drone atttacks and surveilance of its troops - the official cause of the incident was still unknown at time of press. However, it is increasingly possible that other ports may experience similar electronic interference.

Unfortunately, there is no port equivalent of IMO Resolution MSC.428(98) that makes the incorporation of maritime cyber risk management (including cyber security) into every ship's safety management system, mandatory by January 2021. Insurers assessing the risks to ports said they only look at compliance with the international ship and port facility (ISPS) code, part of Chapter XI-2 of SOLAS making it internationally mandatory. However, the ISPS Code, written in the immediate aftermath of 9/11, was designed to combat terrorism before cyber security was a threat.

While ports are waking up to the threat, they still have a long journey ahead of them. This is evidinced by a comment from the head of security for the largest port in a major European country, who told P&H:"[cyber security] is not my responsibility, it's an IT matter". **PH** 

![](_page_34_Picture_2.jpeg)

## A perfect fit

Leah Hill, who joined Belfast Harbour as a commercial analyst in June feels that she will build a long-term career in the ports sector, reports *Namrata Nadkarni* 

> G rowing up with a head for numbers Belfastbased, Leah Hill never imagined that she would find herself working at a port. "I didn't really know about the ports sector. When we were being given guidance about potential careers at university, this wasn't something that was presented to us as an option," the Belfast Harbour commercial analyst tells *P&H*, explaining that her career came about as the result of spotting a newspaper advertisement.

> "I graduated in July 2018 and was looking for graduate jobs and I met all the necessary criteria for the role of commercial intern, so decided to apply. I joined the organisation in September," she recalls

Hill, who completed the internship and was appointed to the full-time role of commercial analyst in June 2019,

It was a challenge to match the information from the data to the physical environment

Leah Hill Commercial analyst, Belfast Harbour says that despite the steep learning curve, she has really gotten to grips with the role. "Our port is quite large so there is a lot to learn about individual customers and what agreements they have and ensuring that they are billed correctly," she says, admitting that she initially struggled with all the acronyms and terminology that is specific to port operations.

As part of a five-person team with complete responsibility for the workings of 120 assets that include warehouses, quays, transit sheds, terminal buildings and more, she had to learn quickly. "I had to get my head around all the bits: cranes and pilotage charges and port entry fees etc. And it was really a challenge to match the information from the data that I was working with in the office to the physical environment: where are the warehouse located that matches up with this data or what commodities does this customer move?"

However, she had a lot of support from her fiveperson team, which made this a quick transition. "We are a small team and so we are really close-knit. We all sit next door to each other, so we are in constant collaboration and our HR department is always encouraging us to use our training budget to go on more courses." In fact, she feels that the ports sector is particularly supportive of newcomers. "Don't be afraid if you don't have a working knowledge of ports. There is a lot of support and training," she says to anyone looking to enter the sector.

Access to training is particularly exciting for Hill as, daily, she has to juggle various responsibilities ranging from creating marketing presentations about port data and sending out bills for warehouse use to helping create a tender for on-site electricity provision. Her natural skill with numbers means that Irish-national really enjoys delving for relevant data and can immerse herself in numbers. However, she confesses that she particularly enjoys working with cruise lines. "I do some cruise bookings for Belfast Harbour. I really like going on the ship and doing plaque exchanges with the cruise captain," she says, adding that she intends to vacation on a cruise herself later this year.

Hill hopes to build a career in the ports sector with the long-term goal of becoming a project manager. "I'd be keen to see if I could move into a project manager role in the long term to look at how we are doing things at Belfast Harbour and try and make them better," she tells *P&H*, adding that one of the opportunities may come in the form of the port's electricity offerings, where her team buys electricity from a provider in bulk and sells it on to the businesses on their premises.

That said, she is open to any additional prospects that present themselves. "The harbour is going through some development and we are doing our strategic plan for the future. Ships are getting bigger and with technology creating smart ports, there is a lot of change. We are also planning to build a second film studio at the port, so our business is expanding into different areas," she says, excitedly. **PH** 

![](_page_35_Picture_1.jpeg)

## Sustainability in its sights

Ports Australia has unveiled an online sustainability portal to showcase some of the best projects by its member ports, all of which align with the IAPH WPSP core themes

![](_page_35_Picture_5.jpeg)

ssociate IAPH member Ports Australia has launched an online tool to showcase advances made by Australia's ports in all five of WPSP's main themes, these are; climate and energy, resilient infrastructure, safety and security, community outreach, and governance and ethics.

Through the Australian Ports Sustainability Hub portal, Ports Australia has published a comprehensive report outlining member led projects. The report, titled *Ports and a Sustainable Australia*, can be downloaded from the Ports Australia website and provides detailed information regarding each of the projects currently being undertaken.

As an island nation, the report states, Australia is completely dependent on trade, and ports are critical to the daily lives and prosperity of Australians. For daily life to continue uninterrupted, ports must contribute to a healthy and sustainable operating environment. The report showcases the initiatives of Australian ports that showed an innovative response to local sustainability and community challenges.

Michael Gallacher, CEO of Ports Australia, said, "Through this report we hope to enlighten parts of the

community on the good work being undertaken in their backyard, share ideas on sustainable approaches so that other industries and the broader community can gain an insight on our approach, look to work collaboratively with them in meeting the challenges of the United Nations Sustainable Development Goals."

### **Climate and energy**

Following the WPSP main disciplines, the port of Newcastle in partnership with Newcastle Coal Infrastructure Group, initiated a shorebird habitat rehabilitation project, restoring 28 ha of saltmarsh and mudflats from mangrove invasion. These maintenance works have allowed for migratory shorebirds, including certain endangered species, to inhabit the previously unused area.

To combat erosion, Mid West Ports Authority (MWPA) and the City of Greater Geraldton have jointly mapped the impacts of coastal erosion and highlighted the need for planning controls to limit those impacts. MWPA annually completes beach nourishment works, including putting sand into the system and providing the beaches with a natural resistance to erosion.

![](_page_36_Picture_1.jpeg)

The Port of Brisbane's solar panel installation is one of the projects showcased on the new portal

# With the advancements in solar panel technology, the port of Brisbane has begun the first phase of panel installation across the port precinct. The port has also partnered with port tenants to assist them in installing their own solar panels. The precinct now has 182 kws of solar panels that produce, on average, 1,269 kWh of energy per day.

### **Resilient infrastructure**

For ports to remain robust while facing the challenges the environment and rough weather brings, infrastructure must continually be maintained and replaced especially as ports grow. With the growing demand for aggregates to produce concrete, particularly for global infrastructure projects, concrete production is depleting natural resources. The University of New South Wales and NSW Ports are exploring using steel furnace slag, a by-product of steel making, in Port Kembla as aggregates for concrete. The concrete blocks will be added to the port Kembla breakwater and routinely tested. This process will reduce energy consumption during the concrete making process, and utilise more environmentally friendly materials and waste products.

### Health, safety, and security

With all the different operations and manoeuvres being carried out daily, ports have the potential to be dangerous places. To ensure and improve safety within its port, Fremantle Ports implemented a Safety for Life programme committing management and staff to integrate safety across all operations and to provide a safe and healthy environment for employees, contractors, and visitors. In 2016, the port also hosted the inaugural Safety Games.

### **Governance and ethics**

The unique marine environment of the port of Darwin emphasises the need for transparency of operations, monitoring, and compliance. This can be exemplified in the maintenance dredging project carried out by the port In November 2018, in collaboration with government and corporate stakeholders. Removing 8500m<sup>3</sup> of dredge material from berth pockets with no environmental triggers or stakeholder complaints.

### **Corporate citizenship**

Ports find themselves in a unique position as promoters of collaborative work and employment, as well as hubs for marine and environmental research. One such project incorporates all these values – the Port Environment management internships – forms part of a long-term environmental monitoring and research programme. The students spend four weeks immersed in field activities spanning both industry and academia, offering a rare opportunity to gain real-world experience while tackling marine coastal management challenges. **PH** 

![](_page_36_Picture_12.jpeg)

## WPSP finds new partner in BPO

he Baltic Ports Organization (BPO), which has a membership of 44 ports in countries such as Germany, Denmark, Estonia, Latvia, Finland, and more, has joined IAPH's World Port Sustainability Program (WPSP).

The WPSP declaration was signed by BPO secretarygeneral, Bogdan Oldakowski in August. The programme is guided by the UN's 17 Sustainable Development Goals, aiming to enhance and co-ordinate future sustainability efforts of ports worldwide, fostering international co-operation with partners in the supply chain.

BPO was established on 10 October 1991 in Copenhagen, Denmark, with its main aim to facilitate co-operation among ports and to monitor and improve potential shipping opportunities in the Baltic Sea region. BPO's mission includes strengthening the global competitiveness of the Baltic Sea region, in addition to contributing to the economic, social, and environmentally sustainable development of maritime transport and port industry situated in the region.

Dr Patrick Verhoeven, managing director of the IAPH and co-ordinator of the WPSP, said, "We're delighted that BPO has decided to join our programme and we look forward to sharing its members' sustainability projects through the WPSP portfolio. Some of the world's most advanced port innovators are to be found in this region, so we look forward to BPO's active contribution towards achieving our goals."

Bogdan Ołdakowski, remarked on joining the programme, "One of the main goals of our policy 'Baltic as a model region for green ports and maritime transport' is to share our experience with the port industry. Therefore, we warmly welcome the co-operation with global players within the WPSP initiative. I sure that Baltic ports, especially the BPO Environmental Working Group, will be interested to learn how sustainable projects have been carried out in other regions." BPO is well-recognised within the Baltic Sea region and EU bodies. **PH** 

### Safety Culture Charter

A 'Safety Culture Charter' has been developed by the UK Chamber of Shipping to support its network of 80+ shipowner and operating members in making a commitment to promote and adopt a positive safety culture within their organisations.

The aim of the new charter is to reduce the number of accidents and incidents at sea. Making safety a top priority, driving a 'just culture' and facilitating continued collaboration with the UK Chamber of Shipping and other member companies are promoted through the charter.

The Safety Culture Charter is intended to supplement and complement the work done by organisations in terms of their safety objectives and safety management systems (SMS) without creating additional burden on current resources. Through 'Commitment Actions', companies using the Charter will be able to review their progress and share experiences with other adopters to improve their safety culture.

The recommendations of this charter are likely to benefit the port sector as they should influence crew behaviour during port calls. The official launch of the Safety Culture Charter will be taking place at the headquarters of the UK Chamber of Shipping in London in September.

![](_page_37_Picture_6.jpeg)

The 101st session of the IMO MSC met on 5-14 June

# IMO's MSC adopts fuel oil safety measures

At the 101st session of the International Maritime Organization's (IMO's) Maritime Safety Committee (MSC), member states adopted interim measures to enhance the safety of using new ship fuels to comply with the 2020 sulphur emissions cap. The resolution recognised the need for the shipping industry to consider safety issues associated with oil fuel, as well as reiterating the importance of the International Convention for the Safety of Life at Sea (SOLAS) regulations.

For SOLAS contracting governments, the recommendations included:

That these governments

inform the IMO, for transmission

to parties and member states of the organisation, of all confirmed cases where oil fuel suppliers delivered oil fuel failing to meet the requirements specified in SOLAS regulation II-2/4.2.1, taking into account regulation 18.9.6 of MARPOL Annex VI;

That the governments take action as appropriate against oil fuel suppliers in confirmed cases of deliveries of oil fuel that does not comply with the requirements;
The need to encourage the widest possible application of the latest edition of relevant industry standards and guidance to enhance the safety of ships related to supply and use of oil fuel; inform the organisation, of confirmed cases where oil fuel suppliers delivered fuel that jeopardised the safety of ships or personnel; or adversely affected the performance of the machinery.

A Correspondence Group on Oil Fuel Safety was also established at the committee meeting. The group aims to develop mandatory requirements regarding oil fuel supplier infringement reporting, as well as appropriate actions to be taken against these entities.

The group will also consider the development of requirements regarding the fuel batches and guidelines for crew when they encounter fuel oil that does not comply with the regulations.

### Notable numbers

![](_page_37_Picture_19.jpeg)

Percentage of Britain's consumers within the orbit of the London Gateway Port

![](_page_37_Picture_21.jpeg)

The number of years taken to build phase two of South Korea's Mokpo por t

## Stepping up against cyber attack

The threat of cyber attacks on the global maritime industry has been pushed to the top of the agenda across the world as authorities look to tackle this issue. In May 2019, the Maritime and Port Authority of Singapore (MPA) has opened its new 24/7 Maritime Cybersecurity Operations Centre (MSOC) to tackle the growing threat to vessels and port facilities. MSOC will conduct 24/7 monitoring and correlate data activities across all maritime critical information infrastructure. Subsequently, the US Coast Guard distributed a reminder to vessels and shipowners that they have a duty to report any attempted cyber attack to the coastguard National Response Center (NRC).

The notice comes after a series of incidents in US waters during the first six months of 2019, where hackers tried to disrupt shipping. The coastguard

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Cyber adversaries are always attempting to gain sensitive information

issued a guidance, whose main objective was to inform the maritime industry of the recent email phishing activities, and malware intrusion attempts that targeted commercial vessels.

Cyber adversaries attempting to gain sensitive information from vessels use a multitude of tricks, including mimicking an official Notice of Arrival (NOA) by using email addresses that pose as official Port State Control (PSC) authorities, such as port@pscqov.org.

The notice added that the coastguard has received reports of malicious software designed to disrupt shipboard computer systems. "Vessel masters have diligently reported suspicious activity to the NRC in accordance with Title 33 Code of Federal Regulations §101.305 – Reporting, enabling the coastguard and other federal agencies to counter cyber threats across the global maritime network."

A coastguard spokesperson urged maritime stakeholders to verify the validity of email senders prior to responding to unsolicited email messages. Should there be any uncertainty regarding the legitimacy of the email request, vessel representatives should try contacting the PSC authority directly by using verified contact information. Additionally, shipowners and operators (and ports) should continue to evaluate their cyber-defence measures to reduce the effect of a cyber attack. The coastguard said it appreciates the efforts of companies and their vessels in remaining vigilant in the identification and prompt reporting of suspicious cyber-related activities.

## South Africa may change scrubber decision

As *P&H* went to press, the South African Maritime Safety Authority (SAMSA) was poised to make a call on whether the country would allow the use of open and closed-loop scrubbers (exhaust gas cleaning systems) in its waters come 1 January 2020.

Although the authority issued a Marine Notice in March saying that it would allow scrubbers, the issue came up for discussion at a recent workshop with industry and government stakeholders on the implications of IMO MARPOL Annex VI low-sulphur fuel regulation for the country. The consensus was that allowing scrubbers advocates the continued use of heavy fuel oil (HFO), which is contrary to the IMO objectives.

In addition, the point was raised that there was no conclusive scientific study on the long-term impact of dumping sulphur at sea. Therefore, SAMSA felt that it should be cautious in its approach and eliminate any potential risk to the environment by simply banning scrubbers in South African waters.

Sobantu Tilayi, SAMSA acting CEO, said that it was not a straightforward decision and that the maritime authority would

need to collaborate with the Department of Environment, Forestry, and Fisheries (DEFF) to ensure that the final decision regarding scrubbers met the government's climate change commitments, as well as SAMSA's mandate of overseeing a sustainable maritime industry.

However, given that SAMSA had already issued a Marine Notice that scrubbers would be permitted until further notice, many delegates felt that an immediate ban might have a negative knock-on effect on the local bunker market.

# **16,000**

Number of cars written off by insurers due to Hurricane Sandy 3,800

The total population of the the Alaskan city of Nome

![](_page_39_Picture_0.jpeg)

### ► Women's forum

## Winners of IAPH Women's Forum Scholarship announced in Guangzhou

Every two years the IAPH Women's Forum selects two winners from those who applied to the forum's scholarship award scheme. Part of the prize is a paid-for trip to an IAPH event.

IAPH has named the two winners of the IAPH Women's Forum Scholarship: Anthonia Ohagwa, assistant general manager ICT, Network, and Communication at Nigerian Ports Authority, and Bibi Nazeema Jaulim-Seelarbokus, quality co-ordinator at Mauritius Ports Authority, have been awarded the funding for 2019–21.

Ohagwa won the Biennial Training Scholarship of USD15,000 to study advanced ICT management trends and strategies at Galilee International Institute of Management and to attend the 2021 IAPH World Ports Conference. She was chosen from seven applicants.

"A gender balanced workforce enhances motivation, increases performance, and unlocks inherent potentials of the work force of an organisation and nation," said Ohagwa.

"My sincere appreciation goes to the IAPH Women's Forum for honouring me with this award. My gratitude also extends to the managing director of Nigerian Ports Authority (NPA) and vice-president of IAPH (Africa region) Hadiza Bala Usman for her exemplary leadership and for creating an enabling platform upon which this award was realised."

When asked how she might support the IAPH Women's Forum in the future, Ohagwa explained that she would do so through advocacy, and by championing affirmative action for women in the port industry. She noted that she could also use ICT Management trends, as well as form a local collaboration effort that would advance the IAPH's ideals.

Jaulim-Seelarbokus beats 12 applicants to win the Annual Meeting Scholarship of up to USD5,000 to travel to the 2020 IAPH Conference in Antwerp, and make a presentation at the Women's Forum session.

# This scholarship award recognises the contribution I have brought

**Bibi Nazeema Jaulim-Seelarbokus** *Quality co-ordinator at Mauritius Ports Authority* 

She said, "This scholarship award recognises the contribution I have brought at an international level in my role as both the chairperson of the Women's Wing of the Ports Association of the Indian Ocean Islands (PAIOI) and WiLAT Global chairperson of the IOI, in the pursuit of uplifting women in the ports sector, and empowering them by creating opportunities to join this sector and to provide the necessary support and network for the advancement of their career growth and development."

As one of those who pioneered the launching of the group of women port

![](_page_39_Picture_14.jpeg)

professionals, representing PAIOI, Jaulim-Seelarbokus believes that incorporating women in the port sector is crucial.

She told *P&H*, "In most of the countries of the world, the female population constitutes more than 50 % of the world's population, therefore, if we want to increase productivity, efficiency, and overall competitiveness in the port industry, we need to harness the high potential that the female population represents in terms of human capabilities. The productive power of the brain needs to be given its true importance, now, irrespective of gender."

# My sincere appreciation goes to the IAPH Women's Forum for honouring me

Anthonia Ohagwa

Assistant general manager at Nigerian Ports Authority

![](_page_40_Picture_0.jpeg)

2019

2020

## Dates for your diary

A selection of forthcoming maritime courses and conferences

2021

### September

- **9–13:** London International Shipping Week London, United Kingdom Iondoninternationalshippingweek.com
- **10–12:** The First International Conference on Maritime Transport Rome, Italy www.wessex.ac.uk
- **10–12:** 17th ASEAN Ports & Shipping 2019 Phnom Penh, Cambodia www.transportevents.com
- 12–13: IAPH Board/Council Meeting London, United Kingdom

- **16–18:** Container Trade Europe Hamburg, Germany www.joc-container-trade-europe.com
- 17–20: NEVA 2019 St Petersburg, Russia transtec-neva.com
- 18–29: IMO: World Maritime Day 2019 London, United Kingdom www.imo.org
- 23–25: Ports & Maritime Evolution, Rail & Logistics Evolution, Road & Logistics Evolution Qatar Assembly & Expo https://www.transport-evolution-qatar.com/
- **23–27:** Strategic Port Pricing & Commercial Billings Management London, United Kingdom www.ttpminternational.co.uk

![](_page_40_Picture_15.jpeg)

![](_page_41_Picture_1.jpeg)

■ The port operations field undeniably favours men, therefore, I am fortunate to be one of the many women in this industry who challenges this perspective ■

# Opening the door to gender equality

Gender balance in the workforce not only creates opportunities for intellectual and professional growth but contributes to a better quality of life, writes *Siti Noraishah Azizan*, general manager at Sabah Ports

One of the 17 United Nations' Sustainable Development Goals (SDG) is to, "Achieve gender equality and empower all women and girls". This objective echoes the world's growing consensus to eliminate discrimination and provide equality and empowerment to all women and girls.

Establishments have long recognised women as assets of growth. Although gender inequality is diminishing in some areas, it still remains a challenge. Gender discrimination takes on many different forms and sadly has deprived many women across the world of basic rights and opportunities.

I have and always will be an avid supporter for more women to enter the port industry. As the current sitting chair for the International Association of Ports and Harbors' (IAPH's) Women's Forum and the Women in Logistics and Transport (Sabah Chapter) – a subset of the Chartered Institute of Logistics and Transport (CILT) Malaysia – I feel privileged to leverage these platforms to encourage women to join the maritime industry and call for more women's empowerment. The port operations field undeniably favours men, therefore, I am fortunate to be one of the many women in this industry who challenges this perspective. Coming from a medium-sized port on Borneo island, I am committed to seeing changes in Sabah Ports that ensure women are given the same rights, participation, and opportunities in all the sectors.

Sabah Ports has grand aspirations. Our strategic position in the intra-Asia region provides the strength for Sapangar Bay Container Port (SBCP) to be recognised as a global consolidation hub for Far East cargoes.

As we aspire to fulfil SBCP's potential, we aim to be a port driven by change and innovation and also to develop a skilled and integrated workforce that promotes intellectual and professional growth for men - but also for women, in particular.

I encourage your participation in building a gender-balanced work force and ultimately contributing to a better quality of life. Your involvement does make a difference.

![](_page_42_Picture_0.jpeg)

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![](_page_42_Picture_4.jpeg)

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![](_page_43_Picture_0.jpeg)

Solar Power System on Warehouse Roof in the Port of Kaohsiung

![](_page_43_Picture_2.jpeg)

![](_page_43_Picture_3.jpeg)

The reservoir in the Port of Hualien not only efficiently collect water from the ground surface, but also become the scenic highlight in Hualien.

![](_page_43_Picture_5.jpeg)

The protected Black Kite hovering freely in the Port of Keelung exhibiting a perfect harmony between human and nature.

Anyan Popts

![](_page_43_Picture_7.jpeg)

The Port of Taichung has become an important base for Wind Power development.

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