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PORTS HARBORS

Official Journal of the International Association of Ports and Harbors



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The COVID-19

pandemic has caused a shift in the maritime

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ensure trade continues. Photo: Costfoto/Barcroft Media via Getty Images

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PORTS & HARBORS

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Staying strong

It is hard to fathom how impacted our industry has been and will be by the coronavirus

Santiago Garcia-Milà **IAPH President**

wo months ago, we were still happily preparing for the IAPH World Ports Conference. Now the world seems to have come to a standstill, with more than 200 countries officially affected by the coronavirus, many of which have introduced quarantine measures. At the end of April, about 2.5 million people had been infected, while almost 175,000 people have lost their lives. And this is for sure an underestimation.

Together with our colleagues in the shipping industry, we have been vocal about keeping ports and maritime supply chains open, advocating that port workers and seafarers are recognised as essential workers. They make sure that vital supplies keep moving and deserve the same appreciation and support as health workers. The IMO has been very helpful in amplifying this message with governments, in partnership with other intergovernmental organisations such as the World Customs Organization.

Ports worldwide remain open for cargo business and the impact on operations seems to be fairly stable for now, although various constraints and bottlenecks do pop up. That is at

I am grateful to all ports that complete the weekly impact survey

least the picture for now, as it is emerging from our weekly WPSP Port Economic Impact Barometer reports (read more on page 38). I am grateful to the members and experts participating in our task force. I am equally grateful to all ports that diligently complete the economic impact survey every week and those that have provided detailed

input to the guidance documents that the task force is regularly updating. This is the true spirit of international collaboration that we were after when we started the WPSP. The same spirit will help us prepare for the post-COVID-19 era. What will the industrial landscape look like? Will demand for seaborne trade become more regional? How is tourism going to transform and how will it affect cruise travel? Will our sector finally embrace digitalisation and what sort of risk does that bring? The list goes on. I believe we have a role to play as world ports organisation, providing a forum for these discussions at an early stage.

That is why I am happy that, in the run-up to the 2021 World Ports Conference, which we have now confirmed to be held from 23 to 25 June 2021, again in Antwerp, we will be organising a series of thought-provoking webinars with our events and media partner IHS Markit that will address the questions that will shape the new normal. Make sure you stay tuned! PH

Port updates

MARCH US IMPORTS SLAMMED BY EFFECTS OF COVID-19

US imports from Asia in March 2020 fell to the lowest level in seven years as retailers and manufacturers pulled back on orders of nonessential merchandise and inputs amid plunging consumer demand and factory closures caused by the COVID-19 pandemic.

According to IHS Markit data, imports from Asia declined 17.5% year over year (y/y) to 926,853 laden teu in March, the lowest monthly volume since March 2013.

Global Port Tracker, which is published monthly by the National Retail Federation and Hackett Associates, projected that total US imports in the first half of 2020 will decline 15.1% from the same period last year. It projected y/y monthly declines will likely continue into the second half of 2020.

"The largest drop is forecast for the first half of this year, but with uncertainty about the length of the lockdown and extent of the pandemic, the second half may not be in better shape," said founder of Hackett Associates, Ben Hackett.

US PORTS OFFER TEMPORARY STORAGE AHEAD OF ANTICIPATED MAY SURGE

Terminal operators at US ports are offering on-terminal storage space for laden import containers carrying non-essential merchandise. The offer is unprecedented as terminal operators always encourage shorter container dwell times at their facilities. However, the move could prevent a backlog of non-essential shipments. Ports and terminal operators on the East, West, and Gulf coasts are implementing container storage programmes as they anticipate a short but intense spike in imports beginning May.



USNS Mercy in Los Angeles

Cruise ports hopeful for 2021 amid COVID-19 plight

Cruise ports in Alaska, the United States, expected a record summer season, but the coronavirus disease 2019 (COVID-19) outbreak has trashed that, with major cruise lines cancelling virtually all calls.

The Alaska Travel Industry Association called the cuts, "Devastating, not just to hundreds of businesses but also to communities that receive a large portion of their revenue from visitor taxes and fees."

Cruise ships annually bring nearly 1.5 million visitors to the state, of which the tourism industry supports about 52,000 jobs and generates over USD4.5 billion.

The Baltic Sea situation is similar according to Claus Bødker, director of Cruise Baltic, which was founded by ports and tourist boards to boost tourism.

"I'm afraid the Baltic Sea cruise season is over before it gets started," Bødker told *P&H*.

"Ports and regional destinations will miss the significant revenues cruise brings – EUR1.5 billion [USD1.6 billion] according to a G P Wild/BREA analysis in 2018, generating around 12,600 jobs," he said.

"I fear that, just as in Alaska, businesses will disappear, and people will lose their jobs. But on the upside, bookings for 2021 are strong. I'm optimistic the cruise industry will regain its position. But it may take a couple of years," Bødker predicted.

P&H also spoke with three major US cruise ports, Los Angeles, New Orleans, and Everglades.

"Last year, 124 ships came through our World Cruise Centre: every call adds an estimated USD1 million to the local economy," a representative stated. "While cruises are suspended, which has been economically crippling to the cruise industry, the port continues to provide essential cargo services and now serves as a temporary home port for the US Navy hospital ship *Mercy.*"

Port of New Orleans representative Jessica Ragusa noted, "Our cruise business has been severely impacted with sailings initially suspended on 14 March. On 9 April, the Centre for Disease Control extended its no-sail order for 100 more days, or until the emergency ends.

"This is typically one of our busiest times of the year and the financial impact of lost cruise calls will be significant. Our diverse business profile, however, has enabled the port to maintain continuity as a vital supply chain link."

It was a similar story at Port Everglades, as acting CEO Glenn Wiltshire told *P&H.* "We were about two-thirds into the heaviest part of our season when the lines stopped sailing. But our diversified business revenue base means that a big dip in one sector can be balanced by the others.

"As a result, we have a history of financial success and have budgeted for construction projects that include a new parking garage for cruise guests," he concluded.

DNV GL warns not to lose green focus

The road to full maritime decarbonisation should not be neglected during the coronavirus disease 2019 (COVID-19) pandemic, DNV GL analysts warned during a webinar the class society hosted on 22 April.

"The COVID-19 crisis has surpassed environmental regulations as a hot topic in the media," said Anne Moschner, director of communications at DNV GL Maritime. "Even though the IMO [International Maritime Organization] is currently at a standstill, there are unquestionably busy times ahead given the new and stricter greenhouse gas and energy efficiency regulations on the horizon." All IMO meetings have been postponed currently, owing to the pandemic.

"There has been a lot of talk about a 50% reduction by 2050. Note that this is just a pitstop on the way to fully decarbonise ships within this century – 2050 is just halfway to the end goal," said DNV GL Maritime environment director Erik Nyhus. He stressed that all short- to medium-term regulations awaiting discussion at the IMO need to be fully implemented.

Principal consultant at DNV GL Maritime Tore Longva said the measures due for discussion with IMO working groups and its Marine Environment Protection Committee were expected to be approved and adopted by the end of 2020. These included an energy efficiency design for existing ships; imposing mandatory design improvements for all ships; a proposal to expand the ship energy efficiency management plan; and setting mandatory emissionreduction targets on all operational emissions.

Port updates

► ASIA-EUROPE CONTAINER RATE LEVELS DEFY COLLAPSE IN DEMAND

Despite a sharply deteriorating demand for Asian imports from European countries that are in lockdown amid the COVID-19 pandemic, freight rates have remained consistently above year-ago levels in recent weeks.

One industry analyst pointed to recent consolidation in the carrier sector as a possible reason, with fewer carriers in three alliances better able to manage their capacity-cutting response to fast-weakening demand.

Spot rates assessed by the Shanghai Shipping Exchange's Shanghai Containerized Freight Index were at USD725 per teu on 17 April 2020, 10% higher than the same period in 2019. In fact, the spot rate has only fallen USD79 per teu in the past seven weeks, unusual for such a volatile trade.

Cruise ports in Europe look to 2021

Port of Tallinn representative Sirle Arro told *P&H* that the COVID-19 pandemic has affected the cruise industry overall. "The 2020 season was projected to be a record, but we'll be surprised to receive any cruise calls," he said.

However, Arro is optimistic for 2021, and Tallinn is continuing construction of a new cruise terminal.

And at Cruise Gate Hamburg, representative Kathrin Schweppe-May felt the same, "We're convinced the cruise industry will emerge stronger. We're working with cruise lines, health and port authorities to set up a strict hygiene protocol for guests, staff, and crew."

Koen Kennis, Antwerp's tourism vice-mayor, shared that confidence, telling *P&H*, "The city and port are investing in new cruise ship docking facilities and a visitor centre – tourism is a vital part of our economy."

Antwerp tests contact tracing

The Port of Antwerp in Belgium has teamed up with technology company Rombit to prevent the spread of COVID-19 among its employees. Rombit has developed a digital bracelet that ensures social distancing and permits contact tracing.

The port will be the first to use this innovative bracelet.

Rombit added new functions to its existing Romware ONE safety bracelet to produce the COVID-19 smart device. The additional new functions will help employees observe the strict precautions advised by the World Health Organisation, while respecting the privacy of the wearer.

The initiative is also a response to the call by the Flemish government to create digital solutions for helping society through the pandemic.

The new COVID-19 bracelet is aimed, in the first place, at encouraging people to practise social distancing. Whenever employees get too close to one another, they will receive a warning signal. However, privacy is guaranteed: the COVID-19



A Belgian deck hand wears a Rombit COVID-19 smart bracelet during a presentation of the device at the Port of Antwerp on 22 April 2020

wearable never passes on the location or other sensitive information to the employer.

The smart bracelet also permits contact tracing: if someone is proven to be infected, then a health adviser or a trusted confidant can check who the person has come in contact with at work the preceding weeks to prevent further infection. "Innovation and digital transformation are crucial in times of crisis such as these. It is essential to keep the port operational, and to ensure that our employees can work safely," said Port of Antwerp CEO Jacques Vandermeiren. "We therefore see great potential in this solution and will shortly start trials with a team of operatives."

Port updates China on its way to recovery

WUHAN'S CONTAINER PORTS GET BACK **TO BUSINESS**

Wuhan International Container Co, which manages the Wuhan Yangluo Port, said that on 31 March 2020, five vessels called at the port and 519 teu of containers have been processed, comprising 300 teu of imports and 219 teu of exports.

An industrial city along Yangtze River, Wuhan's manufacturing output grew as the Belt and Road initiative gained momentum. However, economic activity stopped when the city was locked down in mid-January, as the Chinese government raced to contain the COVID-19 outbreak.

Since then, COVID-19 has escalated into a global pandemic, while infections in China have slowed. On 29 March, the epidemic control and prevention authorities in Wuhan permitted the company to restart operations. The next day, 150 workers came and attended to 13 ships.

Wuhan International Container Co estimated that more than 63,000 teu have been processed from 24 January to 31 March. Shipments of medical supplies and food continued even as the city's lockdown affected regular transhipment by feeder vessels along Yangtze River. Given that its normal monthly volumes was 83,000 teu, this recent total handling volume is a significant contraction in cargos.

Yangluo is the largest wharf at Wuhan New Port, spanning 862 km along Yangtze River. In 2019, Yangluo and the neighbouring multipurpose port, both managed by Wuhan International Container, processed 1 million teu – making the company the second-largest operator of Chinese river container ports.

Wuhan port is mainly a transhipment conduit to ferry containers from surrounding areas such as Chongqing, Guizhou, Hunan, Shaanxi, and Sichuan to Shanghai.

China's ports are facing mixed fortunes with export volumes hit by lacklustre demand from global economies battling the coronavirus disease 2019 (COVID-19) outbreak and imports, particularly of bulk commodities, which are slowly recovering from the extended Lunar New Year holiday shutdown.

The shutdown had largely paralysed the Chinese industry, leading to a crash in output of commodities such as coal, iron ore, and steel.

Although container throughput rebounded immediately after 17 February 2020, the strong recovery pace have eased as the weeks wore on.

The China Port Association revealed that Ningbo Zhoushan, Shenzhen's Yantian terminal, and Shanghai were among the ports with the strongest recovery, with volumes climbing up by 95%, 79%, and 67% respectively by 25 February.

China Merchants Ports Holdings told *P&H* that container volumes through Chinese ports surged "70-90% in the first few weeks of the recovery". However, it also cautioned that with the virus "now spreading globally, the rebound, in terms of percentage growth will narrow in the coming weeks".

Overall, China's top 10 ports experienced mainly doubledigit falls in container volumes in the first quarter of this year, with total throughput falling to 41 million teu, according to the China Port Association.

China Merchants said in March the box volumes at its terminals in mainland China, Hong Kong, and Taiwan slipped 5.4% to 20 million teu in the first three months of 2020. Bulk volumes at its ports dipped by 14.4% to 96.6 million tonnes, with Shanghai voles crashing by 50% to 16.4 million tonnes.



A worker is carrying out transfer operations in Wuhan, China, in April 2020

Fortunately, volumes at its key iron ore import centres at Dalian and Qingdao rose, climbing by 5.4%.

For Qingdao Port Co, bulk volumes rose 2.5% to 131.7 million tonnes and box throughput increased 2.1% to 5 million teu.

Cosco Shipping Ports announced on 27 April that it suffered a decline in overall container throughput. However, it also said volumes at its facilities in northern China, especially Qingdao, surged 4.5% to 9.6 million teu. Nevertheless, Cosco chairman Feng Boming was not confident about a short-term rebound. Although factories in China have resumed production, Feng highlighted that "the manufacturing capabilities in overseas regions are still negatively impacted by the epidemic".

Alan Murphy, chief executive of container shipping consultancy Sea-Intelligence, estimated that blank sailings caused by the pandemic have led to "a demand decline of roughly 6.4 million teu globally". This could have a commensurate knock-on impact in container volumes, particularly at Chinese ports.

Carriers have continued to blank future sailings in May and June, with a drop of 20% on AsiaEurope services. This does not bode well for ports in China.

China's gradual resumption of factory production after mid-February has been felt in bulk cargo volumes at its ports. The China customs data released in mid-April stated iron ore imports climbed 1.3% to 262.7 million tonnes in the first quarter.

According to analyst Mysteel, utilisation levels among major steel mills rose 6% in March. Indeed, steel exports from Chinese ports rose 2.4%.

China customs also said that Chinese ports enjoyed healthy gains in crude oil imports, which rose 5% to 127.2 million tonnes in the first quarter of this year.

One analyst expects import volumes to continue to climb in May, as low oil prices could lead oil refiners to splurge on foreign crude purchases and for China to build up its strategic oil reserves.

Natural gas imports have also increased, boosting volumes through China's liquefied natural gas terminals, as the country continues to focus on switching to cleaner fuels.

China customs said natural gas imports were up 1.8% in the third guarter of 2019 to 24.7 million tonnes.

Hutchison Ports denies hiding virus info

Hutchison Ports Australia (HPA) has refuted claims made by the Maritime Union of Australia of allegedly withholding knowledge of a confirmed coronavirus disease 2019 (COVID-19) test result, exposing stevedores to the virus working in Port Botany, New South Wales (NSW), Australia.

HPA issued a statement in April, categorically stating that the COVID-19 positive cases were not workplace transmissions. The port operator said it was informed of the worker's positive test result. It then consulted with local health authorities and SafeWork NSW, the state's workplace health and safety regulator, and immediately implemented recommended measures. Following a contact-tracing exercise, 17 staff have been instructed to self-isolate for 14 days and remain on full pay during this period. HPA also said that another employee who tested

positive has not been at the site during that period. "We have worked with SafeWork NSW and

they have not imposed any operating restrictions. We would only allow our workers on site if it was meeting all health requirements," said John Willy, HPA chief executive officer. "At each step of the way, HPA has communicated to staff the latest information within hours of being presented information and establishing the facts."

South Africa reduces service

At midnight on 26 March 2020, South Africa's lockdown measures to flatten the COVID-19 curve kicked in. The strict regulations included restrictions on operations at the country's eight ports: Durban, Richards Bay, Cape Town, Mossel Bay, Saldanha Bay, Port Elizabeth, Ngqura, and East London.

The plan was to limit the flow of cargo through the ports to essential goods to keep human movement and interaction to a minimum to limit the spread of the COVID-19 virus.

Similar with other ports around the world, crew changes were prohibited and only returning South African citizens or permanent residents were allowed to disembark.

The National Port Authority (TNPA) also reduced its landside staff complement. The only operations fully manned on a 24/7 basis were port control, maritime services, safety, security, and health services.

Agri-bulk products, such as grains, soyabean meal, fertiliser, and woodchips, were serviced on single berths at the Port Elizabeth, East London, Richards



Dock workers in Cape Town harbor on 18 March 2020

Bay, and Durban agri terminals. Breakbulk commodities were restricted to the Cape Town, Richards Bay, and Durban multipurpose terminals. However, the East London, Saldanha, Port Elizabeth facilities, and Maydon Wharf in Durban were closed.

Meanwhile, all of the country's automotive terminals have closed. Container handling at the

ports was limited to essential goods. The Durban Container Terminals (DCT), which usually has a total throughput of 3.6 teu per year, reduced its operations from eight berths to just two. The Nqgura, Cape Town, and Port Elizabeth container terminals operate on a single berth. This also applies to the multipurpose terminal at Cape Town port.

Bulk terminals handling mining commodities operate on demand, subject to approval from two government departments: Public Enterprises and Mineral Resources.

When a two-week extension to the lockdown was announced on 9 April, the government said port operations would increase beyond essential services, thereby avoiding major bottlenecks once the lockdown ends.

The full economic impact of the lockdown on the ports and South Africa in general will only reveal itself in the future.

Port **updates**

STRANDED SOUTH AFRICAN SEAFARERS AWAIT REPATRIATION

Hundreds of South African seafarers caught up in the maelstrom of the global COVID-19 lockdown while serving on cruise liners have been successfully repatriated.

However, there are still a number stranded abroad.

The country went into a 21-day lockdown at midnight on 26 March 2020, which included closing all airports and seaports, except for cargo operations. The regulations also prohibited any crew changes or passenger disembarkation, unless they are returning South African citizens or permanent residents.

The lockdown has since been extended to 30 April.

"To date, there are about 130 crew members in São Paulo, London, Frankfurt, Italy, and Ghana. The seafarers are receiving assistance from their respective employers and the Department of International Relations and Co-operation," said South African Minister of Transport Fikile Mbalula.

RUBY PRINCESS ADDS TO AUSTRALIAN COVID-19 CASES

Ruby Princess has finally made its way to the Philippines, after five weeks in the Australian media spotlight.

Due to political and union pressures, all crew on board *Ruby Princess* were tested for COVID-19. At last count, 190 crew members were infected, and 33 were hospitalised.

Passengers who had disembarked from *Ruby Princess* now account for one in 10 COVID-19 cases in Australia and 21 deaths. A state investigation and a special commission of inquiry have been set up to look into why the ship was allowed to disembark passengers on 19 March in Sydney Harbor, before the test results of passengers with symptoms came in.

Added pressure

The COVID-19 pandemic might add to the pressure needed to modernise the shipping industry. IAPH policy and strategy managing director Patrick Verhoeven and the IMO experts Astrid Dispert and Martina Fontanet discuss the role of ports in facilitating this, *Ines Nastali* reports

ommenting on how the port community has been tackling the coronavirus disease (COVID-19) pandemic so far, Patrick Verhoeven, IAPH managing director, policy and strategy, says that he sees an "unprecedented collaboration within the industry and stakeholders coming together.

"However, it also shows how little we know of each other," he adds. In order to change this, the IAPH has set up the COVID-19 Information Portal, which includes an economic impact barometer (read more on page 39), and attends weekly calls with the International Chamber of Shipping and other shipping organisations to ensure ship and shore interaction.

"We also need to look at the longer term and start to plan for further impacts on crew changes, and storage and warehouse capacity issues, as well as the post-COVID-19 landscape,"Verhoeven warns, acknowledging that it is difficult to plan without knowing when the situation will change – for better or worse.

With the global spread of the virus ongoing and outcomes on trade unknown, the maritime industry is under pressure to work as efficiently as possible. One of the instruments designed to make the maritime industry more efficient is the IMO's Convention on Facilitation of International Maritime Traffic (FAL Convention).

Its main goal is to recommend practices and rules for simplifying formalities, documentary requirements, and procedures on ships' arrival, stay, and departure and ensure the harmonisation of such practices.

Since April 2019, the FAL Convention makes it

It's exciting to see shipping, ports, and terminals coming together to promote JIT

Patrick Verhoeven

CSA: 5048774

IAPH managing director, policy and strategy

mandatory for ships and ports to exchange FAL data electronically and encourages the use of the singlewindow concept, in which all agencies and authorities involved exchange data via a single point of contact.

"This has been successfully implemented in many ports worldwide; however, we do lack data on compliance globally," says Martina Fontanet, technical officer within the IMO's subdivision for Maritime Security and Facilitation (MSF). This is where the IMO would like to work with the IAPH to ensure that ports are compliant as currently, everyone looks for data on its own.

Within the IMO, webinars are currently being organised to make ports aware of the regulations, which are especially important as "it's not very well known what the IMO does to harmonise standards", explains Fontanet. She stresses that this is vital for electronic data exchange. With the existence of different standardisation agencies, differing standards have been established, also for the transmission of digital information.

"Within the IMO, a lot of work is being done to harmonise data standards that are essential to implement an efficient and reliable electronic information exchange. Member states, industry, and international standard organisations are collaborating through the IMO Expert Group on Data Harmonisation," Fontanet explains.

The IMO is playing a role in this, "as we're neutral and a not-for-profit party, which is a key element for a datasharing platform to be accepted," Astrid Dispert, head of the IMO's Global Industry Alliance (GIA) to support low-carbon shipping within the IMO's Department of Partnerships and Projects on sustainable shipping, adds.

In March, the IMO, the World Customs Organization, the UN Economic Commission for Europe, and the International Organization for Standardization signed an agreement to support increased maritime digitalisation.

The IMO also offers capacity building, for example in Georgia, Montenegro, and Mozambique, to encourage electronic data exchange and co-operation between authorities and the port community systems (PCS).

Means of efficiency

Verhoeven sees similarities between the creation of the first PCSs and the creation of a platform to ensure the transmission of cargo data to public authorities. "I don't think we can do this on our own," he says. Verhoeven therefore calls for bringing in the governments on the

Within the IMO, a lot of work is being done to harmonise data standards

Technical officer, subdivision for MSF

Martina Fontanet



journey to create a truly national single window.

One factor in creating an efficient ports business that the FAL Convention supports is just-in-time (JIT) arrival of ships and the environmental benefits streamlined port calls bring. However, as Dispert points out, "For some ship types, waiting time has traditionally been part of their business model: there are contractual issues related to some type of charter party agreements between shipowners and charterers that result in payment of the charterer to the owner if the ship has to wait more than an agreed number of hours. This type of charter party requires ships to sail into port "with due dispatch" – this is a feature that relates back to the age of sail. In essence, mainly for bulker and tankers, it means that the captain cannot adjust the speed on voyage, without being in breach of contract."

Today, the key performance indicator of a terminal is its throughput. Having ships wait in line therefore guarantees good business numbers, but does not aid the quest to reduce emissions.

The way the port schedule is determined dates again back to times when ships used sails as means of propulsion. "Ships used to sail – as quickly as possible – to the port area to drop anchor and, through flag signals, as there were no other means of communication, inform the port of their readiness to load or discharge. The ship was then put into a waiting queue," says Dispert, adding, "Still today, this first come, first served is common practice in most ports – and ships sail to ports at non-optimal speed to get their ticket in the queue."

While sectors such as ferries and cruise ships have been working off a fixed-time schedule for decades, "it's only in recent years that awareness has been raised on the real benefits just-in-time arrivals can have on the port itself, such as reduced accidents in the anchorage areas as JIT enables less crowded anchorage areas and traffic, as well as a reduction of emissions in the port vicinity", she says.

For Verhoeven, the number of parties involved in the nautical chain and the fragmented number of stakeholders make JIT arrivals a challenge, but not one that the IAPH finds too great to solve. "A major achievement in promoting JIT arrivals has been the work undertaken by the International Task Force on Port Call Optimisation in mapping out the port call business process, related scope of data, and existing standards. Followed by the IMO GIA's work in identifying challenges that stakeholders are facing in implementing JIT and developing solutions on how these could be addressed. It's exciting to see shipping, ports, and terminals coming together to promote JIT and make real progress in delivering tangible solutions," he says. With the port authorities being the player that is most involved with all sides of maritime, Verhoeven sees them as an active part of facilitating co-operation.

"This is also why we at IAPH jumped onto this concept of port call optimisation together with our colleagues from the International Harbour Masters Association as we recognise this is a key role for port authorities as connector between different stakeholders in the nautical chain," adds Verhoeven.

On the same page

It is therefore down to the whole maritime industry to work together on making the industry more efficient and sustainable, especially with the added financial pressure of a post-COVID-19 future, so the IMO is keen to work with ports and provide a forum for these discussions.

Dispert has ideas how this can be done, "The port sector can streamline procedures and remove barriers to trade, embrace new technologies, treat safety, security, and be a major driver towards stability and sustainable development – and support the achievement of the UN sustainable development goals." PH

For some ship types, waiting time has been part of their business model

Astrid Dispert IMO's Department of Partnerships and Projects

Astrid Dispert: 5147514



What to do when hacker attack your port's business?

A cautionary tale

Dustin Eno, COO and crisis response manager for Navigate Response; and *Devin Sirmenis*, managing director of Corporate Resilience for Witt O'Brien's, talk through a fictional cyber attack and steps ports need to take in a similar situation to ensure business continuity

B efore leaving on a holiday with his family, fictional Port of Nirvana executive director Scarn diligently completed some outstanding correspondence, tasked others internally on a few critical items, and finished looking at some links from colleagues. Scarn turned on his out-

of-office notification, closed his laptop and locked it in his office, and left for his holiday with peace of mind.

Captain Dimitrius was on board the vessel *Triumphant* at Nirvana port, offloading cargo. He was writing a reply to an article he had just read from Scarn, calling attention



Public and stakeholder perceptions form quickly. Protect your reputation immediately

Dustin Eno COO and crisis response manager for Navigate Response to the failure of most ports and shipping companies to complete implementation of business continuity, crisis management, and cyber security initiatives now being heavily enforced under the International Ship and Port Facility Security Code.

Dimitrius outlined his thoughts on how he would prioritise investments across purchases, maintenance, plans, training, security drills, and equipment such as x-ray scanning, biometrics, and computer security software. Proud of his writing, he expanded the distribution list and included a dozen other ports and global shipping companies.

Things were busy on board *Triumphant*. Vessel and port crew swapped data with each other, inserting and removing flash drives in ageing laptops as *Triumphant* departed after completing cargo operations.

Port of Nirvana was slammed; running at full capacity. Crane operator Johansen had been at it for hours; methodically lowering containers into hulls, stacking them deliberately and with the ease that comes with years of on the job. After grabbing a new container, Johansen started to move it into position, but the joystick stopped responding the way it should have. Crew on the vessel below looked skywards and wondered what was going on. Johansen felt the joystick go dead in his hand. The container was released midair, falling without warning with devastating effect. Two union members were killed instantly and another was severely injured. The controls and lights in Johansen's cabin went black as he peered down at the carnage and chaos below.

Within moments, two additional cranes malfunctioned, dropping containers, damaging cargo, and killing workers before all operations were suspended. The port came to a standstill.

Emergency service vehicles arrived quickly, followed closely by journalists, camera crews, and curious and concerned onlookers. Everyone was asking what happened. On arriving, the shift manager was stopped by a journalist and speculated that there might have been a cyber attack. Another worker suggested that operator fatigue could have been a factor – "everyone's been pulling extra shifts".

An hour later, Scarn, while on holidays, and a few other leaders at Port of Nirvana received an email from the known hacker group Red Skies. It was an extortion email. Red Skies claimed it has infiltrated the port's systems. It also claimed to have taken over manifests, payroll, and purchasing data, and threaten to cause more accidents and alter data irrevocably if they were not paid USD500,000 in bitcoin. Upping the pressure, it threatened to share "sensitive and damning" information with the international media should their demands not be met.

Red Skies ended the email with "Thank you for carrying our virus and pushing it out further across the globe than we ever could have on our own."

Port of Nirvana's crisis leader and team were about to decide whether or not to pay the ransom when Red Skies sent another email, showing screenshots of the types of data they had access to. Red Skies had upped the demand to USD1 million in bitcoin. It also shared a link to where the group has some of the manifests, contracts, bank accounts, and routing numbers for sale on the dark web. Data files were being sold in batches, and it looked like 20 batches have already been purchased. Red Skies had also posted emails allegedly from employees expressing longstanding concerns about the port not having

The communications lead is a key member of a crisis management team

Devin Sirmenis

Managing director of Corporate Resilience, Witt O'Brien's

controls and processes in place to manage such events. International news outlets were reporting on the breach, social media volume swelled, and stakeholders – from clients to regulatory bodies – started to voice concern. Union protestors were assembling in large numbers at the port.

Take action

What steps should Port of Nirvana's crisis management team take? What does success look like at the end of the crisis for Port of Nirvana? What workstreams have been defined? Who owns them?

Every port should have a senior-level, allhazards crisis management plan that lays out the answers to these questions. Primary roles should be defined for positions like crisis leader, deputy, corporate communications, and functional team members i.e., legal, human resources, information technology, etc.

Each role should have a defined alternate in case the primary is not available, and the crisis extends across days, weeks, or months. Critically, the plan should match Port of Nirvana's corporate culture and be based upon how the leadership would naturally assemble as a team.

Public and stakeholder perceptions will form and solidify quickly. The best time to protect reputations is immediately. Can you issue an initial holding statement within 90 minutes for both internal and external audiences? By doing so, the port will establish that it is gripping the situation, but to respond this quickly, the port must have templates and pre-approved messaging ready to deploy.

Port of Nirvana's crisis management team should have an analysis and decision-making model built into its crisis management process. This will help structure the team's initial, as well as subsequent meetings, as the team defines and revisits the scope, size, and complexity of the current event. Scenario planning should be used to help frame what the event could become in the short, medium, and long term and what the true impacts could be on the brand and reputation of the port – its very licence to operate is threatened. Once the analysis is conducted, the crisis leader should shape the strategy, what is commonly referred to as the commander's intent – simple, visionary statements of what success looks like after the crisis. Workstreams and actions are mapped out to accomplish the strategy.

Reputation and communications objectives must be a key consideration in the strategy's development. The communications lead is a key member of the crisis management team. Especially in the early stages of a crisis, words can speak louder than actions – without communication, the company may not be seen to be effectively managing the situation regardless of what they are actually doing.

Crisis management, following actions and communications as well as managing perceptions need to be lashed together to manage the consequences of an event. **PH**

Be prepared

Imagine you are in the same situation as Port of Nirvana. Consider the following things:

- Does your port have a corporate-level crisis management plan with structures that convene as the crisis management team?
- If so, are the roles and responsibilities defined across the team?
- Does a small triage team meet first to determine the possible impacts of the event and call it a crisis? Or does everyone assemble at once?



Strategising automation

Blockchain, big data, internet of things, automation, artificial intelligence, and digitalisation are all essentials in the new era of smart ports, but there is a human cost, *Tony Slinn* and *Ines Nastali* report

Supply chain transparency depends on digitalisation enabled through internet of things (IoT) and big data – the latter increasingly seen as the vital driving force.

The more data ports have, the better the system developments are, leading to efficient automation through artificial intelligence (AI).

To generate such data, the industry is collaborating with partners. Hutchison Ports, Qingdao port, PSA International, and Shanghai International Port Group, for example, have joined CMA CGM, China Ocean Shipping Company (COSCO), and Hapag-Lloyd in the Global Shipping Business Network to accelerate digital technology and develop solutions through trusted, secure data-exchange platforms.

Of course, there are companies looking at other avenues. Japanese shipping lines Nippon Yusen Kaisha, Mitsui OSK Lines, and K Line have formed Ocean Network Express (ONE), which, in November 2019, adopted XVELA.

This system, billed as "the world's first maritime business network for ocean carriers and terminal operators", from Cargotec subsidiary Navis. Terminal Pacifico Sur Valparaíso (TPS) in Chile was chosen as the Latin American launch point for what is planned as a global initiative.



With every new development, doubts of its effectiveness appear, too. The backlash about consolidating and automating processes is based on the fear of job losses throughout the industry.

Effect of automation

A study by Prism Economics and Analysis, commissioned by the International Longshore and Warehouse Union (ILWU) in Canada, examined what might result from full or partial automation of container terminals in the British Columbia ports of Prince Rupert, Delta, and Vancouver. The report concluded that automation and digitalisation of container terminals can lead to job losses and reduced tax revenue. Prism used two Australian box terminals, Patrick Terminals in Port Botany and Victoria International Container Terminal (VICT) in Melbourne, to model the effect of automation.

In 2014, Patrick Terminals had 436 onsite workers. In 2016, following automation, that was cut to 213 workers. Fully automated, VICT is capable of operating with as few as 150 people. In comparison, Prince Rupert's conventional terminal has 525 workers.

Prism concluded that semi-automated terminals

reduced labour needed in targeted occupations by 50%, while fully automated terminals could slash targeted occupations by 90%. Automation concerns in North America remain a major issue in ILWU contract negotiations with terminal operators. Several other automation impact studies – ordered by local and state authorities, including the US Maritime Administration – are under way, sparked by APM Terminals' (APMT's) decision to automate its Pier 400 terminal in Los Angeles. The ILWU failed to prevent APMT from installing automated equipment.

In neighbouring Long Beach, the city council, in August 2019, directed the harbour department to conduct a study on automation's economic impact. Long Beach Container Terminal is already one of the most automated in the US, but city mayor Robert Garcia summed up the long-term fears, "Port automation is really about a broader discussion of what the future of work in this country, and the world, actually looks like. As a nation, we're in grave danger of getting so far ahead with the way technology is automating all of our jobs that we could hit a major crisis when it comes to people's ability to find work to put food on the table for their families." Los Angeles mayor Eric Garcetti agreed and announced plans to study automation at ports. He said, "The future of work at the port of Los Angeles as part of an agreement between the ILWU and APM Terminals to establish a training programme for port workers."

Ports of Auckland in New Zealand is taking a people approach in automating its terminal that went live in February. Its CEO Tony Gibson explained, "For our people, automation will bring many changes and we are delivering a comprehensive training and support programme before and after automation goes live.

"Automation will bring significant productivity and sustainability benefits, but it also impacts some of the traditional roles in our industry. We believe that in adopting new technologies a business like ours has a responsibility to help staff adapt. We've initiated a future of work programme where our staff can learn and manage these new opportunities."

New and different jobs

There is no bigger example of the drive to automation than PSA's Tuas port in Singapore, which will be the world's largest fully automated terminal when completed in 2040. Technologies will include automated wharves and yard functions, along with electric automated guided vehicles (AGVs). It will not only "vastly ramp up Singapore's cargo capacity, but also create new and different jobs despite the automation", PSA said.

Those AGVs will be supplied by Cargotec subsidiary Kalmar under a five-year automation deal with PSA. The AGV fleet is expected to grow to over 400 units on completion of Tuas' first phase, and Kalmar's contract includes software development, remote and frontline maintenance support, and services aiming to sustain and improve the fleet's performance.

Immature technology

These upgraded terminals are currently the minority. According to a study by the IAPH Port Planning and Development Committee, together with the Hamburg Port Authority and the Fraunhofer Centre for Maritime Logistics and Services (CML), this is because of the immature technology for automated equipment. The Autonomous Vehicles' Impact on Port Infrastructure Requirements report concluded that "cities and ports want to go ahead, but face immaturity of the autonomous technologies. The immaturity of the technology for autonomous driving remains evident".

Ports in Hamburg, with help from MAN and Volkswagen, and Gothenburg, together with Volvo, both trialled autonomous vehicles over the past years.

In addition, "the recent challenge is that only few technologies that are required to realise autonomous driving already exist. Many technologies are prototypes or not fully developed yet", the report stated.

It is therefore inhibiting ports to make a decision about investing in automated equipment.



While it may path the way for the port to be futureproof, bridging technology might soon become obsolete, so waiting for matured technology might pay off earlier. This is especially true considering the time frame ports work with when upgrading infrastructure, which might be every 30 years.

Traditionally, the maritime industry tends to deploy technology once operational costs are easily quantifiable. With the avoidance of driver's hour restrictions and reduced noise pollution, automated and electrified equipment becomes attractive to the industry.

Therefore, while the report could not make a specific recommendation what technology to install, it said, "ports will increase their competitive advantage making autonomous driving possible at an early stage".

Big data, digitalisation, and AI

The good first step to allow automated technology is to have the digital infrastructure in place. "There's a significant trend in big data and Al solutions being considered more seriously by many container terminal operators," said Bob Post, director of terminal automation at Royal HaskoningDHV.

"It's apparent that after the first wave of terminal automation – mainly greenfield sites – the past few years have seen us move to retrofitting existing brownfield manual container-handling equipment to automated. The expectation is that retrofitting will be the trend for years to come, accompanied by phasing automation in a more controlled, low-risk manner," he added.

As the number of automated container terminals grows, more data will be available via the IoT, sensors, tracking, and maintenance data, along with planning, financial, commercial, workforce, and customer data. Terminal operators need to invest in analytic tools that help consolidate these multiple data sources.



One step closer to digitalisation – Aberdeen He continued, "For example, predictive asset analysis tools for terminal operators with a large fleet of various equipment types will help improve equipment availability and lower operational disturbances by taking assets into maintenance before they go into fault status. Prescriptive analysis for better planning and decking strategies in container yards will additionally provide balanced yard planning and utilisation. These are just some of the low-hanging fruit that can benefit from big data and Al.

"Developing complex algorithms for AI solutions; however, should not be a terminal operator's core business," Post said. "That should be outsourced to companies with AI expertise as well as experience in robotics, machine learning, deep learning, automation, and AI engineering. The future of AI/business analyst will focus on liaising between terminal operations and these expert AI companies. We must, however, wait and see if terminal operators are willing to join the big data era and seize the AI opportunities."

Hutchison Ports for one is convinced that digitalisation and an ecosystem of global port platforms will emerge.

"The technology is currently focused on faster connections to the internet, cloud development, and connections to sensors and smart devices," stated chief information officer Jan Waas. "Data format standardisation and protocols like authentication, identification, and authorisation are essential for the industry to provide integrated solutions." (Read more on Hutchisons digital plans on pages 24-25.)

However, Waas warned, "The goal of establishing new platforms must be to replace legacy working process. If the new platforms run in parallel with existing channels, then the legacy communications tools of paper, email, phone, and EDI exchange will remain, cancelling out real efficiencies in the logistics chain."

Digitalisation is a priority at the Scottish port of Aberdeen, which is a step closer to digital transformation, thanks to a USD210,443 grant funding a three-year knowledge transfer partnership with the Robert Gordon University. Aberdeen's IT manager Alexander Bissett told *P&H* sister magazine *DPC*, "The idea is to provide better integration of existing data so that marine and operations staff have all the information available to make better planning decisions. At present, information like weather, AIS, radar, tides, etc, is in separate systems and it takes time to factor in everything to the decisionmaking process. The goal is to increase operational efficiency of the harbor by being able to factor delays into an interactive planning system."

A joint venture between marine infrastructure company Trelleborg and Danish water environment specialist DHI also has operational efficiency and vessel movements at its core.

Trelleborg's rope-free automated mooring system AutoMoor will be integrated with DHI's MIKE 21 mooring analysis software (MIKE 21 MA) over a fiveyear period to provide ports the ability to analyse the mooring performance of AutoMoor to hold a vessel at berth in a given set of environmental and metocean conditions. Trelleborg president Richard Hepworth said, "MIKE 21 MA models multiple moveable bodies as well as fixed bodies to realistically simulate vessel movements in ports."

DHI development team lead Timothy Womersley added, "To date, there have been few, if any, standalone mooring analysis software packages available that can accurately simulate automated mooring systems for all mooring scenarios – vessel at berth, passing vessel, long-period wave, and ship to ship."

Climate change

Finally, climate change is also a technology driver. The World Association for Waterborne Transport Infrastructure (PIANC) recently concluded the Navigating a Changing Climate partnership survey organised by IAPH and covering ports in every major ocean as well as inland terminals. In the *Climate change adaptation planning for ports and inland waterways* guidance, PIANC used 16 case studies to show how to prepare operations for a changing climate.

The paper split the preparations into four stages: understanding which assets will be impacted and how; determining the information giving base line and possible change data; risk analysis for assets; and, lastly, introducing concepts to address climate change.

While the scenarios within the 16 case studies differ, all ports have in common that the interdependency of different assets might present a risk should one asset fail.

In addition, all ports face some kind of threat from a changing climate that has already hit home, such as rising water in the geographically exposed Netherlands and nations like the Cook Islands and Vanuatu, New York and New Jersey both having been hit by superstorms.

On the other hand, the Port of London Authority (PLA) and Harwich Haven Authority in the UK were driven by new legislation that required them to prepare an assessment of potential impacts. For the PLA, having set plans in motion came just in time. James Trimmer, director of planning and environment of the PLA, said during a UK Meteorological Office seminar looking into climate change at ports, "All the issues we thought affect us would be at the deep end, but our report showed it was more in the shallow end."

He added, "We didn't expect changes to be implemented so quickly. What we considered to be relevant for the long term happened a lot sooner. Climate change hit us sooner and harder than expected."

The port authority has been forced to expedite its climate change resilience plan from long-term implementation to a two- to three-year period that will enable it to deal with increasing rainfall at some of its locks, re-optimise its choices of trees for landscaping, monitor emissions more aggressively, and offer better power alternatives to traditional ship fuel. **PH**

Abu Dhabi calling

The CEO of Abu Dhabi Ports, *captain Mohamed Juma Al Shamisi*, talks about becoming a cruise destination, sustainable growth, and the impact of COVID-19.

Cruise ships calling at Abu Dhabi Cruise Terminal

How has Abu Dhabi established itself as a leading cruise and cargo port operator over the past five years?

Over the past five years, Abu Dhabi Ports has focussed on developing effective end-to-end infrastructure with the goal of facilitating the growth of trade and logistics in the United Arab Emirates and the region. We are continuing the development of our maritime assets across our portfolio to meet global demand, in particular at our flagship deepwater port, Khalifa Port, which among others is home to our container operations and a testament to our successful strategic partnerships.

Khalifa Port's integration with the region's largest free-trade zone, Khalifa Industrial Zone Abu Dhabi, is crucial to this strategy, as indeed is our partnership model whereby we are effectively securing agreements with the world's largest shipping companies to lease our facilities on a long-term basis, which includes COSCO SHIPPING Ports and Mediterranean Shipping Company (MSC).

Meanwhile, our cruise business continues to grow from strength to strength. In 2019, the Abu Dhabi Cruise Terminal at Zayed port posted a year-on-year increase of 47% in visitor numbers, while vessel calls jumped by 45%, easily surpassing the figures in the previous year. By 2021, we expect to double our handling capacity with the opening of our second terminal building; this will go live alongside the launch of our new USD30 million cruise jetty at Sir Bani Yas Cruise Beach, the only dedicated cruise beach stopover in the Arabian Gulf.

What kind of trends in terms of port calls from different countries and cargo being handled have you noticed over the past years?

One of the major industry trends is the need for increased capacity and faster turnaround time to meet the demand for paving new trade routes. Our growth and development strategy entails delivering strong connectivity and a robust supply chain in line with the UAE's future economic vision and China's Belt and Road initiative. To that end, we have invested heavily in deepening the main approach channel at Khalifa port to accommodate the world's largest vessels.

In fact, in the past year we successfully handled our first fully laden Capesize vessel after we deepened the approach channel and basin from 16.5 m to 18.5 m draught and widened the channel from 250 m to 280 m.

More than USD1 billion has also been invested into developing Khalifa port's South Quay and logistics facilities for general cargo, bulk, and ro-ro, as well as upgrading Abu Dhabi Terminals' container facilities.

We are confident these infrastructural commitments will pay dividends and enable our assets to deliver regional benefits, as a result of Abu Dhabi's elevation to an international trade and logistics hub. A lot of debate within the ports sphere is about decarbonisation of the industry. Which efforts does the port make to improve its environmental footprint? Sustainability and the environment continue to be crucial considerations in Abu Dhabi Ports' development strategy. This year, to protect marine life during the construction works of our new South Quay at Khalifa port, we are taking great care and investing heavily to ensure protected coral colonies along one of the region's most important coral reefs at Ras Ghanada are successfully replanted and inspected through our port's dedicated ecology monitoring department.

Through our marine services company, SAFEEN, Abu Dhabi Ports has set an ambitious target to reduce fuel emissions to zero.

A central plank of this strategy is introducing unmanned fuel-efficient autonomous tugboats to the existing fleet and upgrading other marine harbor craft in and around our ports to refuel using cold ironing or alternative maritime power. This technology will be fully enabled at Khalifa port's new South Quay development and will become the first port in the Middle East to offer this facility.

In line with the International Maritime Organization (IMO) sulphur standards, Abu Dhabi Ports is also fully committed to using cleaner marine fuels that replace bunkering at our terminal at Fujairah port, one of the world's largest bunkering hubs.

Given that Abu Dhabi Ports manages new ports, does this help to work sustainably by not having to deal with legacy equipment, also in terms of maintenance?

In line with global maritime trends, we have strategically implemented a wide range of initiatives aimed at ensuring the digital transformation of our port assets. For a maritime and trade organisation such as Abu Dhabi Ports, moving from the physical to the digital world enables us to refocus and invest in technological innovation that ultimately makes us more agile, energy-efficient, leaner, and greener.

• Our operations are continuing at pace and with minimal disruption

Captain Mohamed Juma Al Shamisi CEO of Abu Dhabi Ports





Khalifa port, UAE

In that context, we are about to conclude a Green Port Technical Review environmental performance analysis, which is reviewing all our energy-consuming equipment, buildings, health, safety, and environment systems, and will report on potential enhancements that can be undertaken at our most established ports in Abu Dhabi – Musaffah port and Zayed port.

Our container terminal at Khalifa port is at the vanguard of the movement towards automation as it was the first semi-automated and technologically advanced container terminal in the Middle East. At the same time, our digital trade subsidiary, Maqta Gateway, has pioneered a series of single-window platforms and innovations, including the UAE's first-ever port community system to deliver more than 130 services to the trade community across sea, land, and air.

How has Abu Dhabi Ports been impacted by the coronavirus disease (COVID-19)?

Thanks to our strategic planning, our operations are continuing at pace and with minimal disruption. Abu Dhabi Ports is not only open for business, but is also functioning with a business-as-usual approach. We are continuing to navigate the evolving environment and challenges presented by the COVID-19 pandemic to ensure customer interactions with us continue to be safe, smooth, efficient, and value-adding.

Our organisation benefits from some of the toughest and most stringently tested business continuity plans being deployed anywhere in the industry. As much as possible, we are committed to rapidly responding to this situation, particularly as it continues to unfold.

As part of this approach, we are leading an IMObacked solidarity campaign, called the "Horns of Hope", which calls on all ships in all harbors around the world to sound their horns in 15-second bursts each evening as a show of respect and support to all critical maritime sector personnel who keep our vital shipping supply lines open in the face of COVID-19. **PH**

Moving with the times

The increase of larger ships calling at ports and the rise in terrorism threats has seen Singapore constantly adapt its emergency response capabilities since 2009, writes *Martina Li*

he journey of Singapore's marine firefighters is intertwined with the city-state's development as a shipping hub. The Singapore Civil Defence Force (SCDF), which fights fires on land, took over marine firefighting operations from the Maritime and Port Authority (MPA) of Singapore in 2012. This transition began in 2009.

Assistant Commissioner Derek Tan, who is the division commander of the SCDF Marine Division force, told *Ports & Harbors'* sister publication *Safety at Sea (SAS)*, "Against the backdrop of the global terrorism situation, Singapore's position as one of the world's busiest maritime hubs continues to make us a vulnerable target. So back in 2009, a joint consultancy study was carried out for us, by class society DNV GL, to look into national capabilities to deal with security threats in the maritime domain." The study concluded that the SCDF should take over the marine firefighting function and develop capabilities to further enhance the management of maritime security-related incidents and their consequences in the Port of Singapore.

According to the division commander, "The SCDF Marine Division was formed in 2012 and we have since been steadily developing our capabilities over the last few years through the acquisition of more specialised, capable, and automated platforms – in order to better operate within our busy and congested waters with less manpower requirements."

The SCDF's first move after launching its marine division, equipped with two firefighting vessels, was to launch the West Coast Marine Fire Station to respond to fires in western Singapore. Afterwards, the division set-up its second marine fire station, Brani Marine Fire Station, in 2013.

A year after its transition, it met its first challenge. There was a huge fire at Tanoto Shipyard near Jurong Island. The fire engulfed four tugs, one of which sank. The firefighting operation took seven hours, and four people were rescued from the blaze.

Doing more

The SCDF's improvements to Singapore's marine firefighting capabilities were, therefore, far from over. In 2015, it began training its own officers to run and manage the firefighting ships, with support from Singapore's Police Coast Guard. Two years later, the SCDF commissioned its first rapid response fire vessels (RFVs). These vessels can respond to incidents at shallow depths and have a sailing speed of 40 kt. In comparison, the two legacy firefighting vessels that the SCDF took over from the MPA, aptly called *Firefighter I* and *Firefighter II*, had an average speed of 20 kt each. The commissioning of the RFVs coincided with the opening of Loyang Marine Fire Post, which is under the command of Brani Marine Fire Station, to

respond to fires in the eastern and northern waters, as well as the city's southern islands.

The first test for the new equipment came in July 2018. A fire broke out on the upper decks of *Salam Mesra*, a 606 teu container feeder vessel, off the eastern anchorage in Singapore. The marine division extinguished the flames after a five-hour-long operation and the crew of *Salam Mesra* was unharmed. Consequently, the owner of *Salam Mesra*, Singapore-based liner operator Pacific International Lines, scrapped the vessel.

Preparing for bigger things

While this vessel was comparatively small, Singapore has been gearing up to welcome more mega containers and large cruise ships. It is building a new container port in Tuas in the western part of the city-state, which is expected to start operations in 2021. Consequently, the marine division is expanding its capabilities to meet a growing need for firefighting those ships at sea.

All container operations are expected to be consolidated in the new mega terminal by the 2040s, thus potentially making Tuas port the world's largest container terminal when fully operational. Since 2012, operations at Marina Bay Cruise Centre have grown in tandem with the local cruise industry, as increasing numbers of cruise ships call at Singapore. The high volume of sea traffic has made it necessary for the marine division to become more efficient in handling various forms of emergencies at sea.

The firefighters passed a milestone on 20 August 2019 when *Red Sailfish*, a heavy fire vessel, was commissioned with local shipbuilder ST Engineering Marine. Reported to be the world's largest and most powerful firefighting vessel, *Red Sailfish* is equipped with an external firefighting (FiFi) Class 3 system, capable of discharging a total output of 240,000 litres of water per minute, equivalent to filling an Olympic-size swimming pool in roughly 10 minutes.

Red Sailfish was extensively researched and developed together with the SCDF Marine Division and ST Engineering Marine. The firefighting vessel has a chemical-biological-radiological (CBR) filtration system, positive-pressure rooms, and an additional command room. It is rumoured to be the first firefighting vessel in the world that is equipped with a unique dynamic positioning system. This allows it toautomatically maintain bearing on its own, while the crew operates the fire monitors, which significantly reduces their workload and increases precision and accuracy in operations. For its role in developing *Red Sailfish*, the marine division won the Innovation Excellence Award at Singapore's Business Excellence awards ceremony in 2019.



Red Manta, a firefighting vessel in Singapore port

Another local shipbuilder, Penguin International, was commissioned to build a marine rescue vessel and a heavy rescue vessel named *Red Dolphin* and *Red Manta* respectively. *Red Dolphin* also boasts a CBR filtration system, positive-pressure cabins, as well as decontamination cubicles. It will be the primary vessel for major incidents as it can respond to marine CBR incidents and conduct firefighting and rescue operations. Meanwhile, *Red Manta* can carry 300 passengers, has a medical treatment room, and decontamination chamber. It can respond to mass casualty incidents and will be used as tactical headquarters during those. *Red Manta* is the first catamaran vessel in the SCDF and offers very high stability in vessel-to-vessel operations.

• This means planning for mass evacuation of crew and passengers

Kasiviswanathan Shanmugan, Minister of Home Affairs and Law, Singapore

"Special CBR systems such as safe air-protected citadels and chemical warfare agent filtration systems also allow our vessels to operate effectively within chemically contaminated environments, while keeping our responders safe," Tan explained.

Speaking at the launch of the vessels, Home Affairs and Law Minister Kasiviswanathan Shanmugam said that the SCDF must be prepared for growing security threats. "Today, we have the possibility of CBR incidents. Terrorism, of course, the likelihood of mass casualties, and this means planning for mass evacuation of crew and passengers. And SCDF has been building up its capabilities to deal with all of this," he said. The minister also predicted a higher number of passengers travelling in and out of Singapore with cruise ship tourism set to skyrocket once Tuas Mega Port is complete. "The cruise ships have been coming in – huge capacities, thousands of passengers."

Shanmugam then announced that in 2020 and 2021, respectively, the Gul Marine Fire Post and Punggol Marine Outpost will start operations, enabling a faster response to incidents in the outlying islands.

The dedication shown by the SCDF officers towards the marine division was highlighted as well. "The SCDF Marine Division's excellent performance and development, in a very short seven years of its history, has really only been possible because of the tremendous commitment that has been put in by SCDF officers," he said.

Shanmugam concluded, "So, the cruise industry; the number of container ships that are coming through the port – there is huge throughput and investments and we are one of the busiest waterways in the world with the second-largest container port, and when Tuas is ready, it could become the world's largest."

However, he might have spoken too soon. Due to the ongoing coronavirus disease 2019 (COVID-19) pandemic, not only is merchant ship traffic in turmoil, but the tourism industry has been hit hard with travel plans and cruise callings cancelled globally. Singapore's Ministry of Trade and Industry (MTI) has already said that the city-state has suffered "a sharp fall in tourist arrivals".

Furthermore, the UN World Tourism Organisation (UNWTO) has stated on its website, updated on 6 March 2020, that it estimates travel in the Asia-Pacific region to drastically decline. "So far, the Asia and Pacific region is expected to be the most affected with a decrease of up to 12% in international tourist arrivals, down from growth of 5% to 6% forecast in early January 2020," UNWTO predicted.

Time will tell how Singapore – and other countries – will manage this crisis. **PH**



Looking beyond

The Taiwanese Port of Keelung looks to European standards when it comes to cutting carbon and installing equipment, reports *Martina Li*

Two black kites (Milvus migrans) flying near Keelung harbour. The black kite is a protected bird and is still a rare sight in Taiwan. Many tourists visit Keelung with hopes of spotting these birds flying over the harbour Taiwan, invests more than USD1.6 million annually in environmental protection-related initiatives – pushed by the Taiwanese government's efforts to reduce environmental pollution as it has been battling particularly air pollution since the 1980s. Initiatives include promoting the use of biomass power, preventing air and noise pollution, improving water quality, disposing solid waste, and carrying out ecological surveys. The port's efforts have not gone unnoticed, and in October 2019, it was certified as an EcoPort by the European Sea Port Organisation (ESPO) – for the third consecutive year. The organisation promotes eco-friendly ports that comply with EU standards.

Almost all the 114 EcoPorts, such as Rotterdam, Malmö, and Felixstowe, are in Europe. Keelung is currently one of the few EcoPort-certified ports in the Asia-Pacific region. Besides Keelung, another Taiwanese port, Taichung, won EcoPort certification in 2015. A representative of Taiwan International Ports Corporation (TIPC), the port authority, told *P&H*, "As a green port, Keelung complies with international environmental regulations and conventions, such as MARPOL 73/78, the London Convention, International Convention on the Control of Harmful Anti-fouling Systems on Ships, and the International Convention for the Control and Management of Ships' Ballast Water and Sediments. Besides international regulations and conventions, domestic environmental regulations are complied with."

What made Keelung unique from other ports was the demolition and reconstruction of the No. 7 warehouse in its West Terminal. The warehouse was redesigned to reduce carbon dioxide emissions by 19% and save electricity by 30%, while reconstruction involved significantly lower soil movements than other buildings. As such, the port could show that harbour activities did not present any environmental threats, on land or at sea.

REPUTATION MANAGEMENT



Keelung port

Identifying challenges

Around the time TIPC began applying for EcoPort certification, managers of the various departments of TIPC's Keelung branch considered the environmental situation surrounding the port area and the relevant infrastructure development plans in the past two years. Ten major environmental issues were initially selected, and the relevant stakeholders consulted.

These issues were: air quality, river pollution, sewage disposal of ships, handling of cargo spillage from ships, garbage disposal in the port, storage and handling of hazardous goods, exhaust gas emissions from ships, noise pollution, waste disposal of ships, and flying dust. Air pollution was mainly caused by smoke emitted from ships and the nearby Hsieh-Ho Power Plant, as well as exhaust gas and dust released from vehicles.

To improve air quality, TIPC's Keelung branch worked with the Environmental Protection Administration, a government body that functions in a similar way as an environment ministry, to stop old, diesel-powered truck models from running within port vicinity. Instead, only trucks running on fuel oil were allowed. Twenty-fourhour real-time monitoring to check particulate matters (PM) 2.5 and 10 and sulphur dioxide in the atmosphere was also installed.

Notably, Taiwan's Ministry of Transportation and Communications (MOTC) enforced the usage of low-

sulphur fuel oil for all vessels in local waters from 1 January 2019, a year before the International Maritime Organization's regulations kicked in.

The TIPC representative said, "Controlling air pollution goes in hand with efforts to reduce flying dust and in 2018, 14 shore-based power systems were installed to power docked ships. Ships entering and leaving Keelung port are also urged to decelerate to reduce emissions. We recommend that vessels reduce their speed to less than 12 kt if they are within 20 nautical miles [37 km] of the berth."

To clean up the filth in the rivers leading to Keelung, an interceptor was set-up in Xuchuan River, one of four rivers that flow into Keelung, to remove plastic waste. In 2017 and 2018, this interceptor removed 5.65 tonnes and 5.57 tonnes of garbage respectively from the river. However, this is not enough and there are plans to install interceptors in the other three rivers in the near term.

Onshore facilities were built to receive and recycle sewage water, while all other pollutants shall be kept on board ships or discharged into the sea in accordance with regulations. In 2017, around 1,358 tonnes of sewage water and other liquid waste were recovered from 122 ship calls and in 2018, 1,678 tonnes of sewage water and liquid waste were recovered from 167 ship calls.

The TIPC representative said, "In the future, we will continue to co-operate with relevant agencies to



regularly inspect the docking of ships in the port area, and maintain a 100% acceptance rate of waste oil and sewage from ships, so as to prevent ships from arbitrarily discharging waste oil and sewage."

He added that Keelung port officials regularly checked with other agencies to better respond to cargo spills, whether these involve hazardous goods or not, to ensure safety and minimise environmental damage.

The port has set-up a dangerous goods area at the container yard and conducts unannounced inspections to ensure that dangerous goods are managed properly. The TIPC representative said that there were 11 ad hoc inspections in 2017, and 13 such inspections in 2018.

The port has also made efforts to reduce noise levels, especially when its proximity to urban areas meant that noise pollution affected residents' quality of life.

The TIPC representative said, "The port is near the city, and noise resulting from movements in and out of the port is inevitable. In order to maintain a decent standard of living for people living near the port, we have requested all port users, be they goods manufacturers or ship operators, to comply with prescribed noise levels. To bring down noise from vehicles, we created a traffic system on the eastern and western sides of Keelung port to minimise an overlap of traffic movement between residents and the port, while maintaining road safety."

Coming clean

Besides infrastructural improvements, TIPC has been persistent in pushing for the production of clean energy.

TIPC has installed Taiwan's largest thin-film, solar power generation facility in Su'ao, a sub-port of Keelung, and is currently discussing with a potential investor to develop a 50,000 m² plot of land in Su'ao's warehouse district. The land is designated for use by companies in the biomass power generation sector. The investor reportedly plans to invest at least TWD1 billion in new infrastructure that will make the facility Taiwan's first large-scale, biomass-fuelled electricity generator, with zero carbon and zero PM2.5 emissions.

The planned 8 MW plant will be a 24/7 base-load, power generation facility with an annual output of 63 GWh, which roughly accounts 8% of current household electricity demand in Yilan county. Moreover, the company has plans to contract with local government authorities and farmers to plant fast-growing crop on fallow and underutilised lands to produce biomass and, if necessary, to make up the deficit with biomass imports from Southeast Asia. Such imports include fast-growing, processed grasses grown on low-yield farmland and public land.

In a July 2019 press statement, the MOTC said, "This strategy is expected to increase domestic farming income, add job opportunities in the agriculture sector, improve domestic energy self-sufficiency, and advance local economic prosperity."

"These clean power plants, in addition to generating zero carbon and no PM2.5 emissions, are set to play positive roles in stimulating Taiwan's agricultural economy and in helping realise sustainable circular economy goals," the MOTC concluded.

In another sign that Keelung is taking sustainability seriously, TIPC announced in March 2020 that US company TieBam Inc., which specialises in transforming bamboo into railway sleepers, will build a processing factory in Su'ao. TieBam will lease the No. 4 warehouse at Keelung port.

TIPC said that bamboo from Southeast Asian countries would be delivered to the warehouse, where the crop will be turned into railway sleepers before being shipped off to buyers worldwide. The port operator also said that the railway sleeper market has faced challenges because of restrictions on the supply of wood amid growing awareness on environmental issues.

Historically, railway tracks were either made from wood or concrete, and TieBam claims its method to process and transform raw bamboo into railway sleepers can help reduce the carbon footprint, hence it presents a sustainable, environmentally-friendly alternative.

"To address eco-sustainability and new market needs, TieBam developed and patented an innovative bamboo densification technique that allows the use of this fast-growing material in high-performance industrial applications,"TIPC explained.

As the highly fortified bamboo sleepers are reportedly stronger and more resilient than traditional wooden ones, TIPC added, they presented a better cost-effective choice and would not significantly harm the environment.

According to TIPC, its Keelung office began reviewing tenders from contractors interested in leasing the warehouse in October 2019, and TieBam was chosen as it was the most qualified applicant. The two parties signed a lease agreement at the end of February 2020.

TieBam is expected to spend TWD200 million building its bamboo processing facility and commercial production is projected to begin in late 2021.

TIPC said, "The facility should generate about TWD1.6 billion in annual revenue in the initial stage, with annual revenue expected to rise to TWD6 billion over time. The facility is also expected to create about 100 new jobs. We look forward to the increase in foreign investment at the Port of Su'ao, which would raise its shipping volumes and revenue, as well as spur the growth of industry clusters."

On 26 March 2020, former Tainan City Water Resources Bureau director-general Lee Hsien-yi took over as TIPC's new chairman and confirmed the port's course of action. Acknowledging smart sustainability as part of Minister of Transport and Communications Lin Chia-lung's "humanity-oriented transportation", Lee stated that he will keep TIPC's ports in line with technological trends through the continued integration of smart-tech solutions that facilitate continuous capability upgrades, improve safety and efficiency, and fulfill port environmental protection obligations. **PH**





Keeping track

Clemence Cheng, executive director of Hutchison Ports, talks about safe and low-carbon operations and how to make a business smarter

Port of Felixstowe, UK How do you establish an overarching safety culture that can be embedded across your entire network with its different nationalities? Although we have a large and diverse network of ports - we have 52 operations in 27 different countries - one of key objectives that is common to all is an unremitting focus on safety. We aim to create a working environment that all our employees, contractors, and visitors can all return home safely after finishing their business at our ports. The management and delivery of safety has to happen at a local level, but to provide leadership, consistency, and support we have a global group safety committee (SAFCOM) under the leadership of the group operations director who is directly responsible to our executive committee. The higher safety standards practised by the European ports in our portfolio are shared across the whole group. Our internal audit function will audit all business units periodically to ensure the minimum safety standards are complied with. Through the Global Ports Group, we also share safety practices across the industry.

We expect all levels of terminal management and all staff to own safety in their areas and managers to be strong safety leaders, setting a good example, identifying and correcting poor safety behaviours, and delivering high standards of safety every day so that safety becomes completely embedded into the culture of our business. This is reinforced by our Global Safety Policy, which sets our commitment to safety as well as signposting the safety requirements that all our business units must follow.

What does a smart port mean to you? What kind of new technology is on your radar and what should port operators be investing in to help them future-proof?

The term smart port means different things to different people. For us what is important is delivering the most efficient and cost-effective service for our customers in a way that delivers a safe workplace for our employees and minimises the impact of our operations on the environment. Digital technology is vital in achieving these goals. This allows us to develop intelligent solutions for traffic and trade flows to optimise the flow of information and efficiently manage the flow of goods for port users using our network of ports. At Hutchison Ports, we have deployed a four-pronged smart network strategy as follows:

• Standardisation of our systems and data: our proprietary terminal operating system, nGen, is constantly being improved and is now supporting operations in 22 ports with 4 more coming on streams this year. Our goal is to take us from the current level of 55% of throughput handled by nGen to 70% by 2022. Separately, we are starting to roll out 5G technology in a number of locations, including the port of Felixstowe. I suppose we have an advantage over other port operators as we have a sister company, Three – the mobile network operator – as one of our key technology partners.

• Automation of our operations: across our network, we are making greater use of remote-controlled and automated equipment and are trailing autonomous internal tractor units.

• Digitalisation of our business information: we keep an open eye on technological advances in this development and adopting digital tools, we are improving efficiencies of our ports around the world.



For instance, we are working with two industry consortia to develop blockchain to enable collaborative innovation in the supply chain.

• Implementation with the support of our global organisation: all these technologies and equipment would be useless without the people, our people, to turn these resources of information and technical improvements to not only create a more efficient and comfortable workplace, but one that is easily connected within our network and to the greater supply chain.

How important are real-time updates and transparency along the cargo chain?

Ports and their users are all part of a commercial and customer-focussed industry. To succeed in this highly competitive environment, we must remain focussed on delivering value for our customers. They need reliable and cost-effective supply chains. It would be great to think that everything could always arrive bang on time, but even the best supply chains can be subject to unexpected and unpredictable disruption and it is at those times particularly when transparency is critical.

One of the initiatives we are developing to provide that transparency is the implementation and roll-out across our network of the 'ubi' app. Ubi allows port users and shippers to see real-time data on vessel arrivals, departures, and closing times as well as tracking containers and whether they are on the vessel, have been discharged, are ready for collection, or have already been collected, so they know what is happening at every stage of the process. Separately, we also have an optimisation application software called PARIS to help shipping lines and logistic providers to optimise their routings to save costs and reduce emission.

What services should terminals and ports be offering ship owners looking to cut down on their emissions and operate more greenly? Ports and shipowners are part of a logistics industry that also involves road hauliers, rail freight companies, inland waterway operators, distribution centres, and

We must remain focussed on delivering value for our customers

Executive director of Hutchison Ports

final mile delivery mechanisms. For sustainable supply chains, it is important that each component part is optimised. Our objective is to become the preferred partner for a sustainable supply chain.

A group wide environmental programme was created in 2019 that is targeting a global reduction in the level of emissions from our operations. Hutchison Ports is re-focussing on a sustainable future for our operations through a programme of cultural change and redefined environmental expectations. Our employees understand that each of us has a significant role to play in reducing our business's footprint.

There is a myriad of initiatives we are following from producing some of our own sustainable power, such as solar energy to renewing and upgrading our equipment and replacing diesel plant and machinery with emission-free alternatives. Hutchison has long been committed to reducing the environmental impact of our operations and many previous initiatives have already reaped benefits. At the port of Felixstowe, for example, our carbon footprint has been on a declining trajectory for over 10 years and sulphur dioxide and nitrogen dioxide concentrations have reduced by 90% and 36%, respectively, since we began recording them in 2007.

Another way we can help reduce emissions across the supply chain is to invest in facilities for sustainable onward carriage options, such as rail, feeder, or barge to reduce reliance on haulage on the road. The carbon savings from using alternatives to road transport can comfortably exceed the total carbon produced by port operations.

We already offer many of our customers guaranteed berths on arrival to reduce waiting times and wasteful emissions. Of course, that works best when ships arrive on schedule and that is a particular challenge at the moment. Some of our ports also offer shoreside power facilities, but the infrastructure is expensive, so the economics can be challenging. We have facilitated 16 berths with connections for vessels with shore power capability at our terminal in Yantian, but in general, the investment case does not easily add up. This is not a problem that ports can solve on their own. Legislation and public funding will both be required before we see shoreside power as the norm and not the exception.

What can IAPH and HPH learn from each other?

I would not presume to teach IAPH anything, but we can certainly learn from each other. One thing we have in common is that we both operate in many diverse locations. By working and learning together more closely, we can certainly share best practices to make our industry stronger and more resilient, training the right people our industry requires, and providing better opportunities for the next generation to develop. Most importantly, we can make our ports more sustainable and smart for our port users. PH REGIONAL FOCU

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The round-up

The USD1.49 billion Middle Harbor Terminal Redevelopment project at the port of Long Beach, USA, is marshalling dredging, reclamation, and construction works to meet several crucial needs on a significant scale, writes **Scott Berman**

project currently under way at the port of Long Beach (POLB) is joining two outdated container terminals into a new one encompassing 126 ha. That space includes 22 ha of land reclaimed with 3.8 million m³ of maintenance materials dredged from a nearby entrance channel and several other locations in the region. As POLB characterises it, the Long Beach Container Terminal "will handle 3.3 million teu annually, twice as much cargo as the two terminals it replaces, with a modernised wharf that can handle the world's largest ships and strengthen the port's competitiveness and the local economy".

The long-term initiative, fully funded by POLB with revenues and bond issues, began construction in 2011, and is now in its third and final phase with completion expected in early in 2021. Middle Harbor is a flagship of what the port calls "the most extensive capital programme" in its history, totalling about

USD4 billion in investments from various sources during the past 10 years.

The prime contractors for the project are a Manson Construction and Connolly-Pacific joint venture (JV), which is constructing a 426 m long, final section of a 1,280 m wharf, as well as conducting some dredging and fill operations; Griffith Construction, which is completing the automated container yard and rail yard; and SJ Amoroso, the firm constructing a new administration building, explained Cesar Larios, deputy chief harbor engineer at POLB. The Manson-Connolly JV was also a prime contractor for the first and second phases of the project, along with Balfour Beatty Infrastructure in phase two; and a Herzog-Reyes JV, WE O'Neil Construction, and SJ Amoroso for phase one.

According to Larios, steps in recent months included driving piles and preparing to place forms for a new wharf deck and completing concrete pours

> Dredging for Middle Harbor



Construction of Middle Harbor for the deck and structural steel framing, while work continued on container and rail yard components.

The USD4 billion figure includes another massive project also unfolding at POLB: a separate, USD1.46 billion bridge project funded by the port, the state, and the federal government, among others. The initiative will replace the 45-year-old Gerald Desmond Bridge at the port's Back Channel. The new bridge features a 64 m-high deck, 15 m higher than the old bridge's deck, thus enabling passage of 21,000 teu vessels to and from the port's Inner Channel. Completion is envisioned for June 2020.

Modern facilities

Aspects of the Middle Harbor project exemplify several trends in port design and construction. For example, the work will create "one of the most technologically advanced and sustainable container shipping facilities", said POLB senior programme manager Monique Lebrun, explaining that the Middle Harbor project features a new wharf equipped with a set of "the world's largest and most advanced" container quay cranes – they are 36.5 m apart and are able to service 21,000 teu vessels, and expanded on-dock rail that moves about a third "of cargo shipments from trucks to train".

Among the green steps, according to POLB are: technologies that will dramatically cut air pollution. "In addition, battery equipment and facilities will replace diesel yard vehicles with automated-guided vehicles, cold ironing will be installed, several LEED Gold buildings put up, and construction works make use of reused or recycled asphalt and concrete, thus diverting materials from landfills," Lebrun explained. Dredging under the auspices of the US Army Corps of Engineers (USACE) Los Angeles District has played a major role in the changes underway in recent years, and it is a process that is likely to continue in the near future.

The initial Middle Harbor work in 2011 came on the heels of a USACE project that deepened POLB's Main Channel and turning basin, with some 1.1 million m³ of material generated in subsequent USACE maintenance campaigns between 2010 and 2018 deposited for the Middle Harbor reclamation project. Reclaiming the parcel also entailed considerable amounts of dredged materials from various other dredging campaigns in the region, including from the Los Angeles River, Marina Del Ray, and the Newport Harbor-Rhine Channel.

More in the works

POLB is also exploring additional and large initiatives at the port, such as an on-dock rail facility at the port's Pier B. The project, estimated to cost about USD 870 million, is in the engineering and design phase with construction expected to begin in 2022, says Lee Peterson, POLB's media relations manager. As the project's expected cost indicates, this "is the centrepiece of the port's USD1 billion on-dock rail improvement efforts", POLB said.

The Pier B facility will "enhance on-dock rail capacity at the port's shipping terminals, speeding the movement of cargo", and boosting the port's competitiveness.

Eric Paulsen, a senior programme manager at POLB, explained that a deep draught navigation proposal, which now has a tentatively selected plan in place, is targeting container vessels by building an approach channel and turning basin for the port's Pier J South and deepening the West Basin to 16.7 m. Under the plan, capital dredging to accommodate liquid bulk ships would take the port's Approach Channel to 24.3 m, as well as ease bends in the Main Channel and deepen portions of the channel, Paulsen said.

According to the USACE, a total of about 5.4 million m³ of dredging spoils would consist of materials to be hopper dredged and placed in a nearshore site, as well as materials generated with an electric clamshell dredge to be placed at two US Environmental Protection Agency-designated offshore disposal sites. The USACE stated that "to support dredging at the Pier J South berth, as well as the approach channel and turning basin, a new dredge electric substation is required to be constructed to mitigate for air quality impacts". This, like the other initiatives unfolding at POLB, will be a team effort, with planners expecting that conducted dredging at a basin and a berth will generate about 232,000 m³ of the total material to be dredged.

Given all the initiatives, it seems POLB is set for some time. However, the port is working on an updated master plan to guide planning and development for decades. Among the things being considered are additional container redevelopment works and a confined aquatic sediment disposal site. **PH**



Growing risk

At first glance, growing cracks in the pavements of sinking roads on an abandoned, tree-lined hillside in Cleveland, Ohio, may not seem to have anything to do with marine shipping, cargoes, or the port of Cleveland. That is far from the truth, *Scott Berman* has found

Artist impression of Irishtown Bend with shipping visible

illside Irishtown Bend, a steep area of land overlooking the Cuyahoga River in Cleveland is a tributary of Lake Erie. Named after a long gone cluster of homes of Irish immigrants, this cracked hill is the subject of concern for nearby residential buildings, utilities, and roads; the port of Cleveland; and other maritime shipping and industrial stakeholders.

Cracks and subsidence, caused by decades of poor drainage compromising loose materials, mean that the hillside is in danger of collapsing into the river's busy navigation channel. "If the hillside were to fail – and it is currently sliding into the river slowly, but surely – we could see a stoppage of traffic as long as a year or two, in terms of just getting everything cleared," warned Jade Davis, vice-president of external affairs for the Cleveland-Cuyahoga County Port Authority. "Economically, it would be devastating."

The port authority, which administers the steel and bulk cargoes port, is leading a charge to respond to the gathering risk. It aims to protect navigation while providing benefits to city residents. Once the hillside is stabilised, a recreational space to be called the Irishtown Bend Riverfront Park would be created, with the park possibly featuring an amphitheatre and community garden.

The waterway's federal navigation channel is 7.6 m deep and 9.5 km long, and runs from the mouth of Cuyahoga River at Lake Erie to an industrial area that includes the Arcelor/Mittal Cleveland steel mill. Davis said that navigating the channel requires "experienced pilots because of the bends and curves".

"Irishtown Bend is one of the trickiest areas," Davis explained, because the river narrows at that point and "because of the topography on both sides of the river".

Bulk in transit

Industrial entities and businesses are scattered along the channel. Davis said about 9 million metric tonnes of liquid and dry bulk cargoes move along the channel annually, including at least 2.7 million metric tonnes of iron ore headed to the ArcelorMittal Cleveland steel mill; petroleum products to oil companies; and road salt, cement, and aggregate operations to construction and other companies supplied solely or in large part by river shipments.

Shipping along the channel reportedly is worth about USD3 billion a year, Davis said. A collapse of the hillside would not only impact the local economy, but cause flooding and ruin fish habitat, as well as recreational boating and rowing activities along the river.

He argued that virtually none of the products delivered to those sites could be adequately moved by truck, as the business sites supplied by Cuyahoga River are close to downtown, resulting in truck traffic and emissions issues and road-wear problems. There is a rail option, but it is uncertain if it is viable. "Most of the rail in that corridor is spoken for as far as capacity and the ability to take on new cargoes, so that is problematic on various levels," he said.

The Irishtown Bend hillside project has received funding from several stakeholders: a USD9 million US Department of Transportation grant; USD5 million from the state of Ohio; nearly USD7 million from a local sewer district; USD1 million from the city of Cleveland; and about USD1 million from the port.

Construction is slated to start in the third or fourth quarter of 2020. Altogether, the project now has USD23 million in hand and is in design for the first phase of construction, including a system of bulkheads for the hillside. The design contract, worth USD3.4 million, has been awarded to Osborn Engineering.

Construction work at the site will see multiple piles installed, for which dredging is anticipated, co-ordinated with cargo vessel traffic, Davis explained. However, the work of the port and other stakeholders is not yet complete. Another USD5–7 million is needed and being sought to fully stabilise the hillside and then to create fish habitats.

According to David, this project is taking "a multipronged approach, and we are glad to get everyone into the room and help lead the charge". **RH**



Making the switch

The tide may not start turning for India, even after it has cut logistics costs and mirrored its supply chain with global economies, unless it tames its foreign transhipping costs, writes **Bency Mathew**

> xport-import costs in India are seen as excessively high – approximately 15% of the country's GDP by general estimates – thanks to the country's creaky infrastructure and primitive business methods. The costs curb India's ability to compete for international trade. Assocham, India's premier trade body, has highlighted this disadvantage in a report. Shipping a container anywhere from India can cost an exporter nearly double what it costs to ship the same container from China due to high terminal handling charges, it concluded.

> Almost 90% of India's cross-border trade is seaborne, where cargo transhipment remains a thorny issue. This relay mode typically involves additional costs and longer transits, often unpredictable for the cargo interest.

Indian cargo has been sizeable fodder for most transhipment-oriented ports in South Asia, particularly Sri Lanka's Port of Colombo. Colombo encompasses four terminals, providing for a combined capacity of 7.4 million teu annually. The port handled a combined 7.05 million teu in 2019, of which transhipment accounted for 5.56 million teu, or as much as nearly 80%. More glaringly, Indian cargo made up 65% of its mainstay transhipment business, or 3.62 million teu by number, IHS Markit data shows.

Hopes on Vallarpadam

Anecdotal industry estimates of costs associated with Colombo transhipping are USD300 million annually; avoiding or even reducing a fraction of the sum could give domestic goods a leg up in global markets.

Given the high-stakes context, Indian authorities have been working, and more intensely in the past few years, to wrest back cargo routed through Colombo, but any real success on that front still eludes them.

A concerted effort came in early 2011, when India opened a full-fledged transhipment terminal at Vallarpadam in Kochi, in the state of Kerala, with much fanfare, via a 30-year concession awarded to UAE company DP World. Vallarpadam, also known as International Container Transshipment Terminal (ICTT), in its first phase offers a designed capacity of 1 million teu annually, going up to 4 million teu at full-build out.

ICTT is 300 nautical miles (556 km) away from Colombo. This site was chosen as a hub facility because of its close proximity to the busy east-west international shipping route, where shorter transits and greater economies of scale for long-haul operators were available. ICTT has registered steady traction in overall cargo volumes, from 366,376 teu in fiscal year 2014–15 (FY 2014/15) to 594,592 teu in FY 2018/19, but remained bearish in its transhipment outlook, from 17,007 teu to 30,159 teu respectively.

Profitable port

High vessel-related charges at Kochi have been the subject of debate surrounding ICTT's dismal performance as a transhipment gateway. While a national cabotage reform, enacted in May 2018, has somewhat revitalised Indian coastal shipping activity, industry studies put the Indian terminal at a considerable competitive disadvantage vis-a-vis Colombo, or other regional hubs, for port call costs.

"To attract the next-generation deep-draught vessels, additional steps need to be taken, such as competitive marine charges as other hubs like Colombo port enjoy," a spokesman for DP World Subcontinent said. "Along with this, investment in state-of-the-art technology will boost the terminal to make it more attractive and support India's trade growth."

By general estimates, Kochi is roughly 30% costlier than Colombo, even after counting in ad hoc port incentives. Industry leaders claim the biggest stumbling block to an even, attractive pricing environment at Indian ports comes from dredging costs, which remain a port responsibility in India. Dredging costs at Kochi is estimated at INR1 billion (USD13.4 million) annually in the past years, and it is still rising.

By doling out deep discounts to stay competitive, as a result, Kochi port has put itself into a quandary because of blown budgets amid rising capital outlay towards dredging; plans are afoot to dredge the inner harbor to 16 m from its current 14.5 m to encourage bigger calls.

"DP World and the port trust is working closely with each other to further increase volumes at Vallarpadam and attracting more shipping lines to call our terminal," the company said. "We have taken various marketing initiatives to boost trade and attract cargo volumes. The terminal has also improved its hinterland connectivity, which has benefitted the local importers and exporters and further boosting export-import trade."

To bolster ICTT's position as a regional gateway, the Indian government is now reportedly considering synchronising Kochi port charges with Colombo or even lowering them further.

"We continue to thrive on initiatives providing smart trade solutions and adding value to the supply chain by engaging with customers and stakeholders. This year, we are expected to register an overall growth in volumes by 10%, which is higher than the average South India market growth of 7%,"DP World said.

The company also said Vallarpadam/ICTT has had a good year in 2019, having gained two mainline calls connecting to China and the Far East, Europe, and Mediterranean regions. "DP World is committed to India's growth story and enabling trade growth in the country," it asserted.

Planning ahead

In parallel with the Vallarpadam/ICCT push, the Indian government has been exploring other options to pare down foreign transhipment, including an upcoming deepwater harbour development at Vizhinjam, with first-phase operations expected to start next year; a plan to build a green-field hub port at Enayam, near Colachel in Tamil Nadu state; and feasibility studies under way to establish a ship-to-ship, mid-sea transhipment facility in the Andaman and Nicobar Islands in the Bay of Bengal.

Meanwhile, Sri Lanka's Colombo is carrying out a large-scale expansion programme to double containerhandling capacity under its three-phase South Harbor development scheme, commonly called Colombo International Container Terminals (CICT). Each phase has been designed with a capacity of 2.4 million teu annually. The first of the three terminals in the project, built by China Merchants Holdings International, became operational in 2013. CICT is now the busiest terminal at Colombo.

The long-stalled second phase of the East Container Terminal got a new lease of life in May 2019. Investors from India and Japan concluded a joint venture (JV) deal with the Sri Lanka Ports Authority (SLPA) to handle the remainder of the ECT development, with the project targeted for completion in 2020 or 2021. The JV also marked India's investment entry into a market that had attracted considerable Chinese investments, including USD1.12 billion for an 85% stake in Hambantota port in Sri Lanka with a 99-year lease arrangement.

Hambantota is being designed as a multipurpose harbor, with larger-sized container ships being a likely target. Current provisional plans call for a three-phase development at the site, with the first two phases comprising 10 berths on a total quay of about 3,500 m and an alongside depth of 17 m that can accommodate the latest generation of mega-ships.

These developments mean sizeable port capacity additions for Sri Lanka, whose economy majorly thrives on maritime trade activities, where Indian cargo remains a big piece of the pie.

No doubt India is paying a lot more attention to its supply chain hurdles, but foreign transhipment does not appear to be a quick-fix solution. Transhipment is a more competitive game than origin-destination cargo; it requires an orchestrated effort, where global carrier relationships play a vital role. It remains to be seen how Indian stakeholders do the maths to be able to challenge established global heavyweights. **PH**



World: 514008









US AND CANADA



Keeping the flow of critical goods moving

Containers stacking up on a cargo ship berthed at Lianyungang port, China

Trade by sea must continue to flow to maintain the continued provision of essential goods, including vital medical supplies, during the global situation arising from the coronavirus disease (COVID-19) pandemic.

This is the message of a joint statement from the heads of the International Maritime Organization (IMO) and the World Customs Organization (WCO), issued on 17 April.

IMO secretary-general Kitack Lim and WCO secretary-general Dr Kunio Mikuriya strongly urged customs administrations and port state authorities, together with all other concerned agencies, to establish a co-ordinated and proactive approach in maintaining the integrity of the global supply chain so that the flow of vital goods by sea is not unnecessarily disrupted.

The joint statement notes that ports are being closed and ships

and borders are closed. Such restrictions, it says, may interrupt much-needed aid and technical support, and have negative social and economic effects on the countries concerned.

denied entry, as travel is curtailed

IMO meetings postponed

The 31st extraordinary session of the IMO Council was held by correspondence, due to the circumstances as a result of the COVID-19 pandemic. This was the first IMO meeting not held live in the history of the organisation.

The council decided to convene the 32nd extraordinary session of the council, by correspondence, at an appropriate time, as and when it appears that the IMO will be able to resume normal operations. The 32nd session will be invited to approve the revised schedule of meetings postponed because of the pandemic.

So far, meetings originally planned to take place until mid-June have been postponed.

It is critical that customs administrations and port state authorities continue to facilitate the cross-border movement of vital medical supplies and equipment, critical agricultural products, and other goods to help minimise the harm that the COVID-19 pandemic is causing on economies and societies, the joint statement said.

The two organisations emphasised the utmost importance of communication, co-ordination, and co-operation at national and local levels, between ships, port facilities, customs administrations, and other relevant authorities. Customs and port administrations are urged to work together to resolve disruptions to the global supply chain, to support the health and wellbeing of all people.

The joint statement also referred to recommendations and guidance already issued by their respective organisations. The IMO has distributed a series of recommendations, which were also proposed by a broad cross-section of global industry associations representing the maritime transportation sector, to governments and relevant national authorities. In particular, one recommendation specifically called for governments to designate professional seafarers and marine personnel, regardless of their nationality, as key workers providing an essential service.

Notable numbers

For the first time in the history of the IMO, an extraordinary session of the IMO Council was held by correspondence and not live



IMO meetings to be held in May and June had to be postponed



Inspections in port need to adhere to new safety measures to prevent the spread of COVID-19

IMO supports smooth port inspections during COVID-19

The port state control (PSC) regimes, which carry out onboard ship inspections to monitor and enforce compliance with international regulations, have highlighted their commitment to ensuring shipping continues to trade safely, securely, and efficiently during the COVID-19 pandemic, while respecting the important role of seafarers as key workers and protecting the environment.

On the invitation by the IMO secretary-general Kitack Lim, the meeting on PSC inspections during the COVID-19 pandemic was attended by representatives of the 10 PSC regimes, namely the United States Coast Guard, the Viña del Mar Agreement, and the Abuja, Black Sea, Caribbean, Indian Ocean, Mediterranean, Paris, Riyadh, and Tokyo memorandum of understanding on PSC, as well as from the IMO secretariat.

The PSC regimes reported that while the number of physical onboard ship inspections has reduced considerably, in order to protect both control officers and seafarers, the regimes continue to work to target high-risk ships, which may be substandard.

The PSC representatives said they were taking a "pragmatic,

practical, and flexible" approach. They recognise that exemptions, waivers, and extensions to certificates have been granted by many flag states.

A general desire for such practices to be standardised and harmonised was voiced, on which the PSC parties agreed to work together also welcomed the co-ordinating role of the IMO.

Many IMO member states, as flag states, have communicated their guidance in relation to certificate extensions and related matters to the IMO. Some of the PSC regimes have already issued guidance and information on conducting ship inspections during the COVID-19 pandemic. These will be shared on the IMO website.

Lim reiterated his message that the maritime industry continues to be a vital artery for the global economy and highlighted the need for all involved to work collaboratively to address practical issues caused by the unprecedented global situation. He welcomed the prevailing spirit of co-operation, collaboration, and solidarity in these challenging times – when shipping is more important than ever in the global supply chain.

In a joint statement, the PSC regimes and the IMO highlighted the unprecedented impact of the COVID-19 crisis and recognised the need to maintain crucial sea trade supply chains, including the flow of vital medical supplies, critical agricultural products, and other goods and services.

"The respective roles of flag states and port states to solve this crisis, in terms of supporting maritime trade, are paramount, and can also be significantly assisted by the industry. At the same time, the safety of life at sea, the protection of the marine environment, and the respect of seafarers as keyworkers must remain shared priorities," the statement said.

Advice and information on the COVID-19 pandemic, including information from member states and recommendations issued by the IMO, can be found on this website:

http://www.imo.org/en/ MediaCentre/HotTopics/ Pages/Coronavirus.aspx

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Port state control regimes, the United States Coast Guard, the Viña del Mar Agreement, and the Abuja, Black Sea, Caribbean, Indian Ocean, Mediterranean, Paris, Riyadh, and Tokyo memorandum of understanding on port state control, as well as from the IMO Secretariat worked together on inspection advice during COVID-19



Join the IAPH COVID-19 webinar series

In the run-up to the 2021 Worlds Ports Conference, which will take place between 23 and 25 June 2021 in Antwerp, IAPH and IHS Markit have launched a series of three webinars, exploring the impact of the coronavirus disease 2019 (COVID-19) on ports and supply chains.

Developed by the team behind the IAPH World Ports Conference, this free webinar series will focus on the interconnected topics of adapting business models, improving ship-shore relations, and driving data sharing.

The first webinar on 13 May 2020 (4 pm CEST) will feature expert panelists, including Gene Seroka (executive director, Port of Los Angeles), Jan Hoffmann (chief, Logistics Branch UNCTAD), and Theo Notteboom (Shanghai Maritime University), talk about adapting port business models to survive and thrive in the post-COVID-19 era.

With the IMF forecasting a global depression, ports are rethinking their strategy to best serve their stakeholders.

During the second seminar on 10 June (12 pm CEST), Kitack Lim (IMO sec-gen), Ley Hoon Quah (CEO, Maritime and Port Authority Singapore), and Guy Platten (sec-gen International Chamber of Shipping) will discuss how to improve ship-shore relations post COVID-19 and how ports and shipping can work together on decarbonisation, trade facilitation and automation.

The webinar will also explore whether the crisis will have permanent positive effects on the reputation of the sector and yield lasting collaboration between ship and shore.

Lastly, on 1 July (12 pm CEST), Noura Al Dhaheri (CEO MAQTA Gateway/Abu Dhabi Ports) and Jens Meier (CEO, Hamburg Port Authority) will disect if COVID-19 can be a catalyst to overcome obstacles to true data sharing between port stakeholders. The COVID-19 pandemic has exposed the fragility of end-toend supply chains dependent on paper procedures. The speakers will discuss if the port industry can collectively embrace digital innovation to improve efficiencies and facilitate trade.

Attendees will be invited to ask questions about how global trade can stay resilient in the face of a global crisis unlike anything seen in recent decades.

INFO AND REGISTRATION:

https://www. worldportsconference.com/ coronaviruswebinars



Sulphur cap reshuffles ESI

Overall, the number of vessels on the Environmental Ship Index (ESI) has increased again, but the number of vessels with an ESI score above 20 decreased for the first time. In total, 8,238 ships have been registered with the ESI as of 1 April 2020.

The decrease is related to the introduction of the global sulphur cap on 1 January 2020.

Many vessels were bunkering the so-called mid-fuel, with a sulphur content between 0.5% and 0.1%, in the fourth quarter of 2019 to be compliant. Due to the mechanics of the ESI formula, this decreased the SO_x sub-points significantly.

The ESI evaluates a ship's nitrogen oxide, sulphur oxide, and carbon dioxide (NO_x , SO_x , and CO_2) emissions through a formulabased calculation. The evaluation is split into two categories: those vessels that achieved below 20 points because of their NO_x , SO_x , and CO_2 emissions and those that scored above 20.

Although the SO_x formula has been adapted for 2020, the mid-fuel bunkered by vessels is close to the legal limit. This also explains why, going forward, a lower SO_x sub-score is expected than in the past.

The left infographic shows the number of ships that have scored more than 20 points. Currently, the split within this group is as follows: the majority of vessels (2,239) have secured between 20 and 30 points; 2,204 vessels have secured up to 40 points; 1,067 vessels have secured between 40 and 50 points; and a select 494 have secured more than 50 points.

MORE INFO:

www.environmentalshipindex.org

IAPH INFO

IAPH speaks your language

Since 1 January 2020, IAPH members can access the association website in your own language. In order to do this, just click the 'Translate' tab on the screen where you will find a selection of languages to choose from.





IAPH secretariat at info@iaphworldports.org.

Membership notes

The IAPH Secretariat is pleased to announce that the following have joined the association, and particularly welcomes back Sea Ports Corporation as a member.

Regular members

Qingdao Port Group

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 Telephone: +86 532 8298 2099
 Fax: +86 532 8282 2878
 Email: taylor.xu@qdport.com
 Website: http://www.qdport.com
 Representative: Jia Funing, CEO

Port of Gdansk Authority

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C	Telephone:	+48-504 945 918
•	Email:	ewa.klos@portgdansk.pl
	Website:	http://www.portgdansk.pl/en?classic=1
	Representative:	Lukasz Greinke, CEO

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0	Email:	wwilson@portofhalifax.ca
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Ω	Representative:	Allan Gray, CEO

Sea Ports Corporation

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C	Telephone:	+249 13 408 2686
0	Email:	m.madani293@gmail.com
	Website:	www.sudanports.gov.sd
	Representative:	Onur Muhammad Adam Sultan, CEO

2022

Dates for your diary

A selection of forthcoming maritime courses and conferences

June

08–12:	(moved to 7–11 September 2020) IADC seminar on dredging and reclamation
	Delft, Netherlands
	https://www.iadc-dredging.com/seminars-course
	seminar-on-dredging-and-reclamation/
23–24:	(moved to 1–2 December 2020) CEDA and IADC dredging

23–24: (moved to 1–2 December 2020) CEDA and IADC dredging for sustainable infrastructure course Nootdorp, Netherlands https://dfsi-course-0620-nl.iadc-events.com/

This information is correct as of 15 April 2020. You are recommended to check the latest information by visiting the relevant websites, because changes may take place due to coronavirus disease 2019 (COVID-19).

Royal honours for Yvonne Mason



Yvonne Mason is made an Officer of the Order of the British Empire by the Prince of Wales at Buckingham Palace

IAPH long-standing associate member Yvonne Mason, CEO of UK company SafeSTS, was awarded the Order of the British Empire (OBE) as part of the Queen's New Year Honours List.

Mason received the OBE in recognition of her dedication in inspiring and empowering young people in the UK through the charitable organisation she set up, The Mason Trust. The trust works with the education sector and organises exchanges abroad. Sharing the knowledge gained from her many years of global business, Mason brings awareness of the maritime sector to young people to "demonstrate the pathways to the rewarding careers that we have all enjoyed".

Warmest congratulations from the IAPH, well-deserved!





Discuss, Learn, Network

IHS Markit's Maritime Group on Linkedin is a global group for ship owners, managers, operators, charterers, ship brokers, financiers, insurers, shipbuilders and other professionals or enthusiasts with an interest in global shipping and trade.

This group offers you the opportunity to:

- Network with peers
- Discuss issues impacting global shipping
- Learn more and comment on Maritime & Trade's products and services

Ports tackling COVID-19

The IAPH's World Ports Sustainability Program reports that the COVID-19 pandemic is affecting ports, especially cargo and passenger volumes and storage capacity

n the third of a series of weekly Port Economic Impact Barometer Reports by the World Port Sustainability Program's (WPSP) coronavirus disease 2019 (COVID-19) taskforce, the gradual impact of blank sailings by the world's major container shipping alliances is beginning to be felt by ports.

The situation for container vessel calls shows a clear deterioration compared to the previous two weeks. Only 41% of the respondents report a rather stable situation (vs. 52% and 54% in weeks 15 and 16 respectively). An elevated 42% of the ports experience moderate declines (5% to 25%) in container vessel calls. One out of every 10 ports face significant decreases in excess of a 25% drop, compared to less than 3% prior.

The survey is based on six key focus areas, including vessel call frequency, restrictions or delays, impact on hinterland cargo transits, storage capacity utilisation, and port worker availability.

"We have begun to see a reduction in vessel calls with blank sailings on the main East-West trades," report co-author Professor Theo Notteboom commented. "Nonetheless an interesting development we have observed from the responses is that some ocean carriers have replaced these cancellations by regional feeders with good frequency. As a result, the reduced number of long-haul calls has been counterbalanced."

Stable storage

For some ports, yard congestion is the result of laden imports of non-essential goods – including new cars – as they remain in port longer than usual, which was described as a major problem in the second survey. When rules exist to only handle essential goods, the utilisation of storage capacity within the ports has become critical.



Workers have resumed work at the Yangluo container port in Wuhan

Therefore, respective governments have now allowed the weekly release and acceptance of import/export of non-essential goods on average of three days a week; a move that has brought down storage utilisation at some container yards by 60%.

"While on one hand container and general cargo storage area utilisation has increased, the lockdown of major industries has led to serious under-utilisation of terminals and storage areas and warehousing for several other cargoes," co-author Professor Thanos Pallis said. "These include black and white breakbulk cargoes, steel, heavy-lift cargo, and machinery. Liquid bulk is still suffering from a non-favourable downward trend in market demand. Nonetheless in some cases, storage tanks for liquid bulk are already full or rented, so no more tank storage is available." **PH**

Get involved: IAPH resources for COVID-19

You can provide input on your port's response to the COVID-19 outbreak and contact the taskforce by emailing covid19@sustainableworldports.org.

The taskforce is headed up by Tessa Major, IAPH vicepresident for Central and South America and director of International Business and Innovation at the Port of Açu, Brazil. In addition to Professors Notteboom and Pallis, the task force includes multidisciplinary port experts and professionals from the Açu, Antwerp, Busan, Felixstowe, Guangzhou, London, Los Angeles, and Rotterdam ports, as well as Maritime Street, a consultancy specialised in digital trade logistics.

The taskforce has also published an updated COVID-19 port guidance document structured along a three-layered approach regarding immediate measures addressing port operations, governance and communication, measures to protect the business and financial returns, and those to support customers and supply chain stakeholders. Download the guidance paper here: https://sustainableworldports.org/wp-content/ uploads/2020-04-22-WPSP-COVID19-Guidance-2.0.pdf

In order to provide a visual guide to the data, the task force has published a dashboard summarising the main findings of the surveys so far:

() https://sustainableworldports.org/wp-content/uploads/ WPSP-Port-Economic-Impact-Barometer-24-April-2020.pdf

IAPH WPSP report 2020 launched

IAPH's World Ports Sustainability Program's annual report lays out which projects ports are working on to make their businesses more environmentally friendly

he number of port projects that were submitted to the World Ports Sustainability Program (WPSP) more than doubled in 2019, with 84 project submissions compared with the 36 projects submitted in 2018, it is stated in the programme's annual report. The WPSP Portfolio currently accounts for 120 projects developed by 71 ports from 38 countries.

Number of projects: 38/120

Almost one-third of the port projects in the WPSP portfolio relates to resilient infrastructure. Two-thirds of those apply digital solutions to optimise the sustainability of both port operations and processes, as well as logistics and supply chains.

Port community systems and data exchange systems between various stakeholders are dominant here, while other digital solutions focus on environmental monitoring and management of operations.

Fewer projects work on the adaptation of port infrastructure and the management of ecosystems for responding to the effects of climate change, such as extreme weather events, or sea level rise.

Finally, a relatively small number of projects in this category address port planning and development work to accommodate for market trends and demands, such as larger vessels, as well as stakeholder interests.

CLIMATE AND ENERGY

Number of projects: 43/120

More than one-third of the port projects in the WPSP portfolio address climate and energy areas. Greenhouse gas (GHG) emission reduction from ships is the highest priority in this category. Initiatives include providing onshore power supply, incentivising bestperforming vessels, investing low-carbon fuel infrastructure, and port call optimisation.

The second priority is improving energy efficiency of operations in the port area. This is being achieved through innovative processes and technologies addressing the production, demonstration, and implementation of clean and renewable energy in ports.

So far, few submitted projects address the issues around circular economy, and managing ecosystems for carbon capture and adapting to climate change.

COMMUNITY OUTREACH & PORT CITY DIALOGUE

Number of projects: 68/120

Community outreach and port city dialogue is the most popular WPSP area of interest, counting for more than half of the total port projects. This is a very broad category, grouping together all initiatives addressing the environmental impact of port operations as well as schemes targeting societal integration.

Ports are granted and maintain their licence to operate and to grow by their local communities. Sustainable ports effectively address the social and environmental impacts of port operations and strive towards continuously improving the way they work. Sustainable port development projects need port community stakeholder involvement right from the start and until completion.

Furthermore, port community actors can actively engage urban stakeholders by offering them innovative, mutually beneficial projects that help make their city more attractive and resilient.

SAFETY AND SECURITY

Number of projects: 11/120

One out of 10 projects in the WPSP portfolio addresses safety and security, making this the category with the fewest projects.



Nonetheless, the ports participating in this area include inspiring projects covering health and safety, emergency preparedness and response, overall port area security, and cyber security.

With the advance of global terrorism, cross-border crimes, and the rise of digitalisation, security problems have obtained an entirely new dimension.

Number of projects: 19/120

One-sixth of the total number of WPSP projects relate to governance and ethics. Half of them are corporate social responsibility initiatives where ports proactively address local community and broader social considerations. There are also projects focussing on transparently communicating and reporting on the port's vision and its sustainability approach.

Projects fostering innovation through green and blue economy incubators are also grouped under governance and ethics. There are also a couple of inspiring projects on improving gender balance and empowering women in the port industry.

Several port authorities are actively integrating principles of good corporate governance, regardless of their ownership or business model. Depicted in port strategic policies and visions, such principles often extend beyond traditional port responsibilities to address key community needs, including social and gender equality, education and health, and the port's contribution to global issues such as carbon neutrality and circular economy.

Furthermore, ports are aiming to raise the bar on ethics and transparency as well as committing to structured reporting on sustainability. **PH**

Go to www.sustainableworldports. org/ to read the full report.



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