



PORTS & HARBORS

Official Journal of the International Association of Ports and Harbors

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14

Collaboration with different industries can reveal interesting training opportunities

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November/December 2012
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REGULARS

- Comment:** IMO SG opens discussions with SG Naruse about a co-operation scheme to assist developing countries **3**
- News:** Amisom takes control of Port of Kismaayo; Vale progresses with offshore transshipment; PSA's long-term strategy **4**
- Open Forum:** Intercargo's Rob Lomas is fighting for better regulations surrounding bulk cargoes prone to liquefaction **12**
- Cover Story:** IAPH-sponsored awardees go to Antwerp; training programmes at UNESCO-IHE; cross-training opportunities with the maritime contracting industry **14**
- Maritime Update:** WPCI update on LNG; new garbage rule; IMO on ballast water; and liquefaction at DSC **40**
- IAPH Info:** Port of Los Angeles gets ready for May conference; IMO SG visits secretariat; new EXCO members **44**
- Last Word:** TIP's president on the importance of IAPH and his plans for Taiwan's ports **48**

FEATURES

- On the edge:** The options to consider when investing in perimeter security to protect your port boundaries **18**
- TEPSA's safety culture:** Bilbao's bulk liquid cargo terminal takes safety seriously, as its record shows **22**
- Munitions management:** An Australian port has undergone a clearance process to remove legacy EXO **25**
- Emergency response:** The USCG and salvage industry have realigned their response to a shipboard fire in port **28**
- Take a load off:** End-users of the Siwertell unloading system claim it reduces dust and has a small footprint **31**
- Breaking the beach:** Brazil's plans for a super port at Açú are becoming a reality as dredging progresses **34**
- Under new management:** Taiwan International Ports Corporation tells P&H about its future plans **36**
- Closer access:** Atlantic Gateway is aiming to attract more ships to England's northern ports **38**



12



22



25



28



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Working with IMO

IAPH is asserting its position on container
weighing and is optimistic about a new
scheme to assist developing countries



Susumu Naruse
Secretary General – The International
Association of Ports and Harbors



Koji Sekimizu, secretary general of IMO, visited me in the Tokyo office in August. We exchanged views on matters of interest to IAPH including ballast water treatment, revision of the ISPS Code and container weighing. He also revealed an idea that he has had in mind since he took office as secretary general. He wants to create a co-operation scheme for developing countries, in which IMO, along with other international organisations such as IAPH, extend technical assistance for the sustainable development of the entire maritime industry in those countries. He said that IMO would ascertain their needs over the next two years and then carry out co-operation work in collaboration with other organisations.

The scheme is attractive to IAPH, because it is our mission to disseminate good practice globally and developing countries are key to expanding membership. IAPH does not have many useful tools for these countries except the scholarship scheme (see page

15), so this is a good opportunity for the association to work with IMO in this field. I hope his idea will take concrete form soon.

IMO's Sub-committee on Dangerous Goods, Solid Cargoes and Containers (DSC) met in September to discuss a new scheme to verify container weights. IAPH, along with other organisations, presented DSC with a proposal

on amendments to the SOLAS Convention. Unfortunately DSC failed to reach a conclusion on these amendments at this session and is continuing to discuss the issue. In the interim, it has set up a correspondence group to prepare detailed guidelines on the subject. IAPH needs to join this group to make our position clear.

Looking back at 2012, the first half saw modest growth in global port throughput, but it weakened and became flat in the latter half because of a troubled global economy. Fears of recession remain high in Europe: EU unemployment rates are historically high, the Chinese economy is slowing down and box rates between Asia and Europe are collapsing. Nevertheless, emerging countries' economies are robust and trade among them is expected to grow rapidly. I do hope we can enjoy the rest of the year peacefully and have a brilliant new year as we welcome in 2013. **PH**

IMO wants a co-operation scheme for developing nations

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Port updates

KOLSKY NEEDS TIME

More time is needed for planning a Russian coal export terminal at Kolsky Bay on the Barents Sea. The Siberian Business Union (SDS) said it is ready to build the terminal, which is intended to have the capacity to ship up to 18M tonnes of steam coal a year. But SDS spokesman Daniil Zaitsev said that it needs more time to finalise the details. Moscow maritime analyst Alexei Bezborodov told *P&H* that the likelihood of implementing the scheme is not improving in today's uncertain coal market.

HPH AMSTERDAM CLOSES

Hutchison Port Holdings (HPH) will close its Amsterdam Container Terminal from 1 January. The group, which acquired the terminal from NYK Line in 2008, explained it was taking the decision because of very difficult conditions in the deepsea container market. About 30 employees will be made redundant and handling equipment will be sold, said Rob Bagchus, spokesman for sister company Europe Container Terminals.

SINGAPORE SECURITY

Singapore officially opened its \$8M upgraded Port Operations Control Centre at PSA Vista in September. The POCC will enhance navigation safety and protect the marine environment in Singapore's port waters and Singapore Strait, said the Maritime and Port Authority. Its vessel traffic information system has 30 high-resolution displays in 18 work stations.

US DREDGING NEEDS FUNDS

By 2020, ports and inland waterways in the USA will require \$30Bn in government investment for essential navigational dredging and maintenance, infrastructure experts have estimated. According to *Failure to act*, a report released in September by the American Society of Civil Engineers, that amount is roughly \$16Bn more than had been previously expected. It does not include private investment to improve facilities at the ports themselves or to improve connections to roads and railway networks in the ports' hinterlands.

Somali port changes hands

Photo: GeoEye



Al-Shabaab profited from port dues at Kismaayo, which became a centre for charcoal exports

Militant Islamist group al-Shabaab has been ousted as the operator of the Port of Kismaayo, in southern Somalia. The al-Qaeda-aligned group confirmed in late September that it had conducted a "strategic withdrawal" from the town.

Early on the morning of 28 September, Kenyan troops supporting the African Union (Amisom) and Somali government forces began a combined air/land/sea assault and gained control of the port relatively quickly. A defence expert at IHS Jane's told *P&H* that it appeared the port was not badly damaged in the attack.

Al-Shabaab took over as port

operator at Kismaayo, and also at the ports of Marka and Baraawe, in October 2009. A UN Security Council report of July 2011 (S/2011/433) estimated that the group was generating \$35–50M a year from port revenues and local taxes, mainly connected with the illegal charcoal export trade and sugar smuggling.

It is not believed that pirates used the port either to launch attacks or to anchor captured ships, but the lack of government control on this section of the coastline compromised maritime security at the northern end of the Mozambique Channel and left the

way open for arms-smuggling and other illegal activity.

Maritime security analyst Dave Sloggett said of the fall of Kismaayo: "It's quite significant, but not necessarily conclusive as far as piracy is concerned. The pirates will still be able to roam the lengthy coastline of Somalia to find launch locations."

Nevertheless, if Amisom and the Somali forces can consolidate their hold on the district, the change of control should allow Kismaayo to be used for food aid shipments and, in due course, importation of materials for the reconstruction of southern Somalia's infrastructure.

Tanzania implements surveillance system

The first phase of a Tanzanian project to upgrade maritime security and safety in the Mozambique Channel was marked by the implementation of an integrated radar and AIS coastal surveillance system. Completion of the installation was celebrated with a ceremony in Dar es Salaam on 17 September attended by the IMO special representative for maritime security, Hartmut Hesse, and representatives of the Tanzanian and US governments – the three partners in the scheme.

Initially intended as a bilateral military project by the two governments, the initiative was broadened to take in IMO's counter-piracy programme under the Djibouti Code of Conduct. The combined radar/AIS, for which US company Forward Slope was lead contractor, will provide a near-100% view of the coast to the Dar es Salaam Maritime Rescue Sub-Centre and the Tanzanian People's Defence Forces.

Quoted in *IHS Jane's Defence Weekly*, the IMO said

the organisation and the US government are "keen to use this as a model for further work in the region and we jointly anticipate completion of at least two more western Indian Ocean states' integrated surveillance systems by the end of 2014".

Safety in Tanzanian waters has come under close scrutiny after the loss of more than 340 lives in two ferry accidents, both off the semi-autonomous island of Zanzibar, in the past year.

There is reasonable doubt that the lessons of the recent maritime accidents have been learned, however. During a surprise visit to Tanzania's principal port, Dar es Salaam, on 27 September transport ministry permanent secretary Omar Chambo discovered irregularities, according to Tanzania's *Daily News*. He warned that the port's lax inspection and weighing procedures put vessels at risk of overloading and created opportunities for the smuggling of drugs and other contraband.

Quick for coal at Krishnapatnam

Krishnapatnam Port achieved a remarkable handling record in August, when 122,247 tonnes of coal were discharged in 24 hours. Five advanced mobile harbor cranes – each with a 35m³ grab – were employed for the job, with all of them working continuously for 17 hours and four for seven hours on 7 August.

A total cargo of 161,980 tonnes of coal had to be unloaded from bulker *Cohiba*; the remaining 39,733 tonnes were discharged to the dockside the next day. "This achievement is the first ever in the history of any port in India, and possibly in the world," port operator KPCL told *P&H*.

To date, the privately owned east coast port, 180km north of Chennai, has handled 35M tonnes of coal of varying types, and it can handle a variety of other cargoes. Its 13 cranes have a discharge capacity

of between 750 and 1,000 tonnes an hour each. The port's achievements have been given ISO certification from Det Norske Veritas.

The port has 10 operational berths and 18m draught alongside. KPCL said: "Its single window clearance system provides end-to-end services from stevedoring to custom documentation, enabling it to optimally use its massive back-up area of 6,500 acres [2,630ha], which houses dedicated coal storage plots that are well connected with dedicated coal sidings".

The port is in its second stage of development, which includes the construction of berths and integration of a cargo handling system. It has also brought in new mini bagging machines, installed hoppers and conveyor systems in warehouses and built additional railway sidings to handle bulk cargo.

Vale expands ore hub network

A strategy to lower the end cost of iron ore by building a network of offshore and onshore transshipment hubs is making progress, Brazilian mining giant Vale announced recently. The company believes it can cut logistics costs by shipping ore from Brazil to hubs in the Philippines, Malaysia and Oman aboard very large ore carriers (VLOCs) then transferring cargoes to Capesize and Panamax bulkers for the final leg of the journey. It expects to bring its ore on 85% of voyage distance aboard VLOCs and 15% aboard smaller vessels.

The transshipment concept is of particular importance to buyers in China, because Vale has not yet obtained widespread permissions for its VLOCs to dock at the country's ports.

Operation of Vale's first floating hub, in Subic Bay, Philippines, started early this year. The 'transfer station' has been converted from the 284,480dwt *Ore Fabrica*, which was built as a very large crude carrier and converted to a VLOC in 2009. Vale has invested \$52M in the Subic Bay transfer station.

For the first year the transfer station is in service, Subic Bay Port Authority expects to see its revenues boosted by P70M (\$1.7M). The *Ore Fabrica* hub "has been working very well", Vale



Subic Bay's *Ore Fabrica* transfer station (centre) tranships ore from the 402,347dwt VLOC *Vale Brasil* (bottom) to the 179,385dwt *Ore Pantanal* (top)

shipping GM Peitro Allevato asserted at the Marine Money Asia conference in September.

Vale announced in April that it would construct a second floating ore transfer station in Subic Bay, although since then there have been reports that suggest the company is considering other Asian sites. Allevato said: "We are talking to other people in Asia to establish another floating storage station, similar to Subic Bay."

An advantage of Vale's offshore-hub concept is that units can be moved if the market warrants. The company explained: "Both the existing station and the one to be built are mobile, making it possible to move them to operate in different offshore regions,

always close to our main consumer markets in southeast Asia and other parts of Asia."

The offshore transshipment model complements Vale's onshore hub strategy. In February, the company opened a \$1.36Bn distribution centre and pelletising plant at the Port of Sohar, Oman. The distribution centre can handle 40M tonnes a year.

In the first half of 2014, Vale will open a \$1.37Bn distribution centre in Teluk Rubiah, on the east coast of peninsular Malaysia, with a capacity of 30M tonnes a year. More than \$312M has been spent so far on the centre, and work is progressing on the construction of the main jetty and earthworks at the stockyard.

Port updates

LIVERPOOL2 CONTRACTOR

Peel Ports has appointed Lend Lease as principal contractor for Liverpool2 on the River Mersey in northwest England. The £300M deepwater container terminal at the Port of Liverpool is scheduled to start operation in 2015. Unlike the current container terminal, which is located within a closed dock system accessed by locks, Liverpool2 will be able to accommodate the largest container vessels currently in service.

LIEBHERR IN ARGENTINA

Exolgan Container Terminal in Buenos Aires, Argentina, has received its eighth ship-to-shore container crane from Liebherr. The crane was given a presidential welcome by the country's head of state, Cristina Fernandez de Kirchner. At the inauguration ceremony, President Kirchner noted that Exolgan Container Terminal handles one-third of all the containers entering and leaving Argentina.

SPARCS IN KHALIFA

Khalifa Port in Abu Dhabi, United Arab Emirates, has launched commercial operations with its Sparcs N4 terminal operating system, supplied by Navis. Khalifa Port will handle the container traffic that will be transferred from Mina Zayed port by early next year. "We are thrilled that Sparcs N4 was instrumental in helping to give Khalifa Port the highest state-of-the-art container terminal facilities in the Middle East and north Africa," declared Navis president and chief executive Bill Walsh.

COOL ROTTERDAM

Port of Rotterdam Authority, logistics provider Kloosterboer and Europe Container Terminals (ECT) plan to join forces to set up Rotterdam Cool Port in the Netherlands. Prins Willem Alexanderhaven, part of the current ECT City Terminal, has been earmarked as the location for this intermodal hub for the transshipment and storage of refrigerated and frozen products. Construction of the site could begin in September 2013, which will allow operations to start a little over a year later.

People

BRIDGES LEAVES VIRGINIA

Jerry Bridges ended his tenure as executive director at the Virginia Port Authority on 31 October, it was announced. The VPA said he "helped guide the Port of Virginia through a difficult period that came as the result of the worldwide economic slowdown". Bridges restructured the authority and helped oversee VPA's long-term lease of APMT's terminal. He is also currently chairman of the American Association of Port Authorities.

NEW CANAL DEPUTY

Manuel Benítez took up his post as deputy administrator for the Panama Canal on 4 September. "The board of directors considers that Benítez's experience and knowledge will contribute to the management of the Panama Canal, as the waterway faces new challenges while maintaining its competitiveness as an international commercial route," said Roberto Roy, canal affairs minister and chairman of the board of directors.

MARSEILLE DEVELOPMENT

Intermodal logistics specialist Arnaud Ranjard has joined the port of Marseille-Fos, in southern France, as director of development in succession to Dirk Becquart. He has spent most of his career in Antwerp, but his work has included major initiatives involving Marseille-Fos. From 2008 he was strategy and development director for the container division of stevedoring company Euroports. In this role he developed and marketed inland multimodal platforms including Trilogiport at Liège and Pagny in Bourgogne.

RETIREMENT IN KIEL

Port of Kiel's marketing and operations director, Heinz Bachmann, retired in August after a 34-year career with the port. During that time he was involved with the expansion of the Ostuferhafen into a hub for ferry traffic with Russia and the Baltic, the development of Kiel into the leading German turnaround port for cruise shipping and the concentration on Kiel of Stena Line's west Sweden traffic.

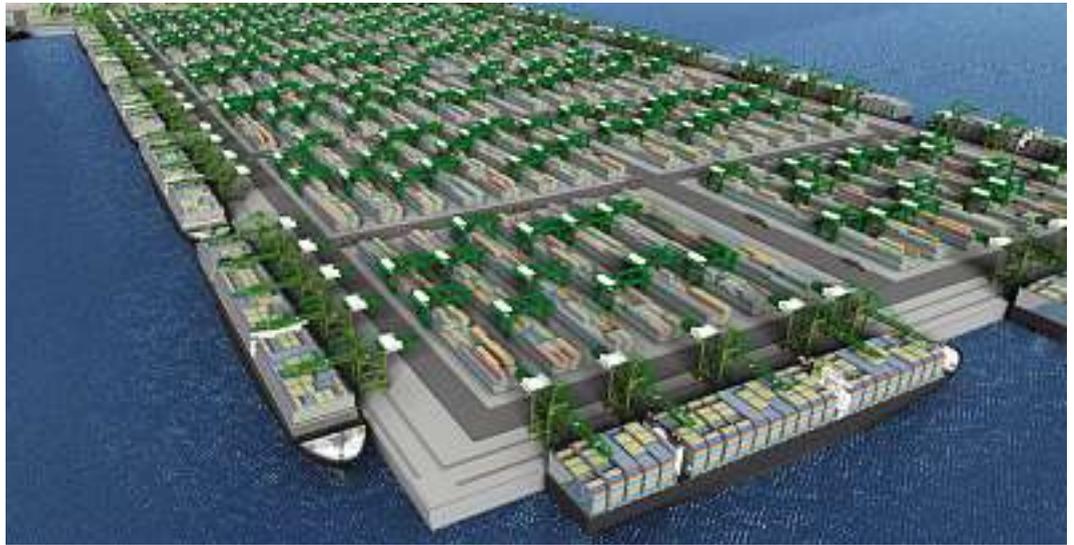


Photo: PSA

Pasir Panjang Terminal Phases 3 and 4 are still under construction. PSA intends to consolidate its ports in Tuas

Singapore to consolidate container terminals

Singapore will work towards bringing all its container terminal activities together at its industrial zone in Tuas in about 10 years' time. "Consolidating our port in one location will enable us to achieve greater efficiency and economies of scale," said Singapore's minister for transport, Lui Tuck Yew, on 1 October.

"The port leases for city terminals at Tanjong Pagar, Keppel and Pulau Brani will expire in 2027. With this in mind, we have studied the feasibility of building a consolidated port as recommended by the Economic Strategies Committee," Lui said.

Singapore has five container terminals – Brani, Keppel, Tanjong Pagar, Pasir Panjang Terminal 1 and Pasir Panjang Terminal 2. "To support transshipment operations, there is often a need to move containers between these terminals by trucks. This adds to the time taken and business costs for port operations, as well as congestion on our roads. Consolidation will eliminate this need for inter-terminal haulage," added Lui.

The minister said that the sheltered deep water and closeness to major industrial areas

and international shipping routes suggest that Tuas is the best location. The planned Tuas Port will be able to handle up to 65M teu a year to meet longer-term demand at the global hub port, and will provide opportunities to introduce even more advanced technology and processes to meet future challenges.

"Our new port must be able to handle future generations of container ships that are likely to be even larger and more complex than the ships today. We might need to cater to a growing fleet of ships that are powered by LNG and other alternative fuels," said Lui.

Land and manpower constraints mean that there is a need for even greater efficiency and productivity, the minister said. Lui highlighted the inauguration last year of the Port Technology Research and Development Programme, a joint venture between the Maritime and Port Authority of Singapore and PSA. "The programme is studying automated container port systems, optimisation techniques and technologies, and green port technologies, among others. We will be able to deploy some of the outcomes of these projects at Tuas Port," said Lui. He

added: "Consolidation at Tuas will also free up prime land, which our City Terminals and Pasir Panjang Terminal are currently occupying, for redevelopment."

The Tuas Port development will be a long-term project taking place in phases, with the first set of berths expected to be operational in about 10 years. Lui emphasised the need for Singapore to continue investing in port infrastructure ahead of demand.

"This is why, despite the current uncertainties in the shipping market, we have upgraded our port operations control centres, deepened the approaches to our port and are expanding our container terminals."

Separately, PSA is investing S\$3.5Bn (\$2.85Bn) in infrastructure and technology to develop phases 3 and 4 of its Pasir Panjang Terminal, which should be fully operational by 2014. It will feature an automated container yard equipped with intelligent planning and operation systems, as well as unmanned, rail-mounted gantry cranes. These cranes, along with those installed at the berths, will run on electricity and therefore be more environmentally sustainable.

A new cornerstone for Black Sea shipping?

The cornerstone for a new Black Sea port at Lazika was laid by President Mikheil Saakashvili of Georgia on 23 September.

Saakashvili claimed that, when completed in the first half of 2015, the port will be one of the largest in the region. He maintained that the facility has the potential to become a Black Sea hub for traffic between southeast Asia and Europe.

In May, he said the project "is based on the fact that the shortest trade route from northern China and central Asia towards Europe runs through Georgian ports... Existing ports need supplementary points and new logistics centres."

Edgar Martin, head of the

shipping consultancy Infospectrum Central & Eastern Europe, told *P&H*: "Georgian ports are generally well-regarded and the largest facilities are now under private concessions. The new port at Lazika would have the potential to attract more transit traffic to the country and many in the Georgian and wider Black Sea transport and logistics sector welcome it." He added, however, that existing port operators were unenthusiastic, as were environmentalists.

Construction of the port is estimated to cost 535M lari (\$323M) and will employ 2,000 people. Once operational, Lazika will employ 2,300 people, the president's press service stated.



Joint security command and control centre at Port of Long Beach

LB focuses on security

Port of Long Beach (PoLB) is investing in security initiatives that include a virtual port system. This is a geographic information system that gathers surveillance data collected from 130 high-resolution cameras to provide a comprehensive picture of the port domain in real time. Another new project is a non-intrusive inspection system, which will employ mobile scanners operated by the US Customs and Border Protection to inspect high-risk cargo to detect weapons and explosives and stop the flow of contraband.

The port is providing further training in first-responder preparedness to its personnel and other agencies that work within the port. Upgraded vessel traffic management equipment will be installed to improve the detection of small boats and navigational safety. Also anticipated are new fire stations and fireboats – the Department of Homeland Security has allocated \$18M towards the design and purchase of one of the fireboats. In August, the Long Beach Police Department acquired new 3D sonar technology for underwater inspection.

The port has budgeted nearly \$34M for its various security and safety infrastructure projects and is continuing to seek federal and state money to support its overall port security goals.

People

NEW IMCA CHIEF

Chris Charman takes over as chief executive of the International Marine Contractors Association (IMCA) on 3 December, replacing Hugh Williams, who is retiring. Charman said he is looking forward to his new role. "I have worked with a number of trade associations and not-for-profit organisations, and the vast majority of my working life has been devoted to risk management. Managing risk effectively is, of course, a key goal for members of IMCA, so I look forward to combining all these areas in a most interesting global role."

JAXPORT UPDATES BOARD

Robert Spohrer was appointed to the board of directors of the Jacksonville Port Authority (Jaxport) in August. Spohrer is president of Spohrer & Dodd PL, a Jacksonville-based law office specialising in complex civil litigation. He is board-certified by the Florida Bar in both aviation law and civil trial law. He is active in numerous professional, legal education and civic organisations and is a member of the Inner Circle of Advocates.

NEW GENERAL MANAGER AT AUCKLAND

Ports of Auckland (POAL) announced Raoul Borley as general manager container terminals in August. Borley joined Ports of Auckland in 1993 and worked in many areas of the company. He left in 2010 to take on a role as management consultant and CEO of a small port technology company and rejoined POAL earlier this year.



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STRONG IN AUCKLAND

The multi-cargo division of Ports of Auckland Limited (PoAL) delivered a strong full-year result, with EBIT up 21.4%. Break-bulk tonnage rose almost 10% and vehicle volumes by almost 17%. Marine services' revenue was boosted by the Rugby World Cup and provision of tugs for the *Rena* salvage operation; EBIT was up 45.7%. The loss of a major service and industrial action adversely affected the container terminal business, leading to a fall in volume of 12.6% and EBIT down 16.1%. Overall, PoAL recorded a 6.4% fall in total EBIT.

CHARLESTON TOPS USA

Port of Charleston was the fastest-growing top 10 US container port from January to June this year, said the port, growing box volume by 7.4%. Container business remained strong in July, rising 16% over the same month last year and nearly 7% up on June. "These figures reflect two things: economic recovery and a commitment to meeting aggressive goals," the port said.

DP WORLD'S RISE

DP World reported stable net profit on slightly higher revenues for the first half compared with 2011. Group net profit for 1H12 amounted to \$247M, up \$1M, while revenues rose 1.8% to \$1.53Bn. The company said its capital expenditure in the review period amounted to \$260M and both Jebel Ali and London Gateway terminals that are under construction are progressing well and remain on schedule.

GOTHENBURG UP/DOWN

Port of Gothenburg saw container export figures rise by 3% in the first six months – a new volume record for the port and "a reflection of strong Swedish export volumes to markets outside Europe", the port stated. "The bulk of container exports from Sweden pass through the Port of Gothenburg and these strong freight flows, mainly to Asia and the USA, are extremely encouraging," said CEO Magnus Kärestedt. Imports in the first six months dropped by 6%.

Charleston extends inland

Port of Charleston has found a way to make good use of a 40ha plot of land that it purchased in 1982. The idea is to benefit from moves by US rail giant Norfolk Southern (NS) to expand its share of intermodal business. NS wants to attract on to its line about 25,000 containers a year of BMW auto part imports that today are moved by truck. The company saw an opportunity to do that while bringing business to the port's property situated 354km inland in Greer, South Carolina, which is conveniently close to BMW's vehicle assembly plant.

The South Carolina Ports Authority, which oversees the Port of Charleston, has already started a \$25M construction project there, which is due for completion in September 2013.

"This one piece of business from BMW was designed around their needs, but this will serve as a neutral extension of the port," SCPA president Jim Newsome told *Ports & Harbors*. "We will offer this to any shipping line customer of ours to use for whatever purpose they choose. The facility has



multiple functions, one of which is to be an extension of our container depot into the interior, and it's also a rail ramp."

Norfolk Southern's ability to move containers quickly overnight gives it an advantage over road transport and was a decisive factor for BMW, which operates a just-in-time assembly plant. Newsome estimates that the number of import containers moved to the plant by rail will double to 50,000 within two or three years.

"BMW has significant growth aspirations, and if you look at this area there are about 20 suppliers that also have an import

component in servicing BMW vehicles. So I think it's fair to say that the auto industry will be a significant component to the operation," Newsome added.

The plant is located near an international airport, so the port authority does not intend to stop at vehicle parts. Newsome believes that the next phase in import distribution centres will be based on servicing online purchases. "I think the facility is going to be extremely attractive to an Amazon, or bricks-and-mortar retailers like Target and Wal-Mart that are ramping up their e-commerce presence."

ABB wins first for Europe

Maasvlakte 2 at Port of Rotterdam will be the first port in Europe to have remotely controlled ship-to-shore (STS) cranes. APM Terminals and Rotterdam World Gateway commissioned the automation systems from ABB in September.

ABB said the delivery will enable

the cranes to be operated remotely, without a driver on board, which should improve overall efficiency.

The two terminals are scheduled to open in 2014 and have been designed to receive the largest container ships, which

require lifting heights of over 50m. APM Terminals' site will be the first in the world where the STS cranes do not have a driver's cabin installed. The crane operators will work in a control room located in the terminal building and view operations by means of onboard cameras. These images will be combined with information from the terminal operating system. "This will improve working ergonomics and help reduce the stress on operator's back and neck," said ABB.

Port of Rotterdam's press officer, Minko van Heezen, told *Ports & Harbors*: "[It is] logical that every operator should try to make a state-of-the-art terminal. Port of Rotterdam would like every operator to go one step further."



A stacking crane control room equipped with ABB's system in Korea. Crane operators can sit elsewhere in the port and control the crane remotely

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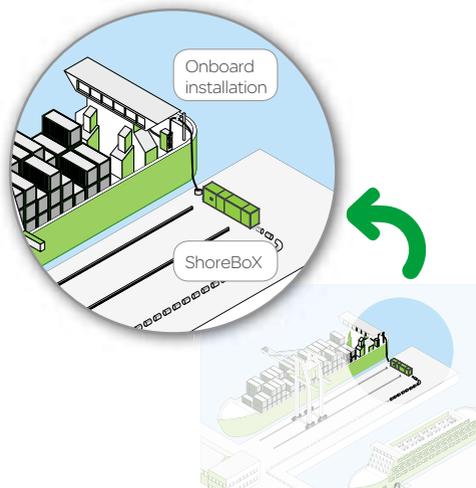
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Cash & Cargo

INCREASE IN HOUSTON

Port of Houston Authority's revenues were \$11M, or 5%, in excess of the original budget forecast, said executive director Len Waterworth at the end of August. "Expenses have been reduced by 3% to \$5.9M," he added. The port's restated retirement plan has made substantial growth and its assets now exceed \$100M, controller Maxine Buckles reported.

CASH FOR CANAL

The French government has urged the European Union to increase its funding of the €4.6Bn (\$5.76Bn) Seine Nord Canal. The scheme would link the River Seine to the wide-gauge canal network of the Benelux countries and Germany and is scheduled to open in 2017. The EU has agreed to provide €330M, which is just over 6% of the total cost. French transport minister Frédéric Cuvillier said in August: "This is not much for a major European infrastructure programme".

GROWTH AT PMV

Port Metro Vancouver recorded growth of 6% in its mid-year figures. PMV handled 62.3M tonnes of cargo to the end of June and total foreign tonnage amounted to 49M tonnes, also a rise of 6%. The port's "strong 2012 mid-year growth is clear proof that the federal government's strategic investments and partnerships in building the Asia-Pacific Gateway are making Canada the gateway of choice between Asia and North America," said Ed Fast, international trade and Asia-Pacific Gateway minister.

GPA TONNAGE UP

Georgia Ports Authority's total tonnage was up 13% and GPA reported increased business across all categories, both month-over-month and fiscal year to date. "The GPA's growth despite a relatively flat economy reflects the level of efficiency and service our customers receive, which helps Georgia's deepwater ports maintain existing business and expand our market share," said executive director Curtis Foltz.



Photo: APMT

Callao's fishing community will be relocated to new facilities as part of APMT's development project

APMT breaks old ground at Callao

The multipurpose cargo port in Callao moved a step closer on 17 September when APM Terminals started demolition of the abandoned railway station of Patio Guadalupe to make way for a pier extension. When completed by the end of 2014 the pier will have an overall length of 560m.

The company also placed orders for four super-post-Panamax cranes with a 23-container reach and 12 electric RTG cranes on 31 August; delivery is expected in October 2013. Work on dredging the port to -16m alongside depth will begin this month. Managing

director Henrik Kristensen described APMT's project as "a clear commitment to develop Callao as a strategic, regional hub to generate more business for the country through a world-class, eco-friendly port".

The group has been operating Callao's North Terminal since July 2011, which handled 436,117teu in its first year. The company has invested \$35M as part of an overall investment of \$749M to update and expand the existing facilities.

Patio Guadalupe, which is adjacent to the port, had been abandoned for several years. Its

historic structures will be removed and relocated to another part of Callao. The demolition work and port construction will create 600 new jobs in the community.

APM Terminals is also spending \$3M at the Port of Callao to develop a commercial fishing terminal able to accommodate 400 fishing vessels, in accordance with an agreement signed on 20 August, because the existing fishing port will be affected by the modernisation of Pier 5. The dock is to be modernised, including the installation of lifting equipment, weighing scales, freshwater tank, sewage pump and modern sanitary amenities and canteen, and the existing administrative building will be renovated. APMT said: "New anchoring buoys and pontoons will enable part of the fishing fleet to be located outside the breakwaters, reducing the number of vessels inside the port area, improving the overall safety of the port."

Kristensen said: "Our business model is based on the 'triple bottom line' approach, including performance measures for safety, environmental sustainability and positive socio-economic impact, aligned with the UN Global Compact principles – this requires a commitment to being a good corporate citizen and a good neighbour as well in any local communities in which we conduct our business."

Kenya seeks oil jetty investors

A project to build a major new oil jetty at the port of Mombasa, Kenya, moved a step closer in October. Sumayya Athman, CEO of the National Oil Corporation of Kenya (NOCK), was quoted by *The East African* newspaper as saying that most of the preliminary work had been completed, including a feasibility study conducted by Alatec Consulting of Spain, and an environmental impact assessment. Consultations with stakeholders are in progress.

Early in 2013, NOCK will be seeking an international investor for the jetty project, Sumayya said. Construction, at an estimated cost of \$80M–105M, is set to start next year and take two years to complete.

The new jetty will be able to handle ships three times larger than can currently call at the country's main crude oil terminal at Kipevu, Mombasa, which has 13.4m depth alongside and can take ships of

80,000dwt. Kipevu is a critical conduit for the whole region, as it handles imports for nine countries in addition to Kenya itself. The nearby Shimanzi terminal handles refined oil products, but can only accept ships up to 30,000dwt and 9.75m draught.

Demand for oil in Kenya and its landlocked neighbours has outpaced the facilities at Kipevu, which suffers from congestion, while Shimanzi's restricted capacity is reported to add between \$10 and \$25 per tonne to import costs.

NOCK estimates that by 2015, when the new offshore jetty is expected to open, demand for oil in east Africa will have tripled, with oil imports rising to 7.7M tonnes for Kenya and 37M tonnes for Kenya's neighbours. An increase on this scale cannot be met without substantial expansion of the country's pipeline infrastructure and oil storage capacity.



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Iron ore liquefaction in action... a process caused by the motion or vibration of a ship during the cargo's transit

Dry bulk should stay dry

Rob Lomas, secretary general of Intercargo, wants to see a collective understanding of the processes and regulations surrounding dry bulk liquefaction

The management of ports and terminals is, by implication, linked to customer requirements. But for the dry bulk sector – served by 9,000 bulk carriers and 1,600 bulk carrier companies – terminal management professionalism and a joint awareness of the regulatory regime can make a huge difference to the safety of ships and seafarers.

In an industry where supply chain participants are so diverse and the terminal facilities so varied, it is not surprising that some supply chain parties might lack full knowledge of all cargoes and their potential hazards.

In isolated cases, some shippers ignore their legal responsibility to declare the correct name of the cargo that they are offering. Some governments fail to provide proper oversight of testing, sampling and analysis regimes. Terminal and barge operators may not appreciate the importance of the need to keep

certain cargoes dry and shipowners and masters may underestimate risk in response to commercial or operational pressures.

When there has been a failure to follow proper procedures, the least-worst scenario can be the commercial and legal ramifications of a difficult cargo outturn. In the worst case scenario, it can lead to fatalities. Dozens of seafarers' lives have been lost in the past decade because of control failures – liquefaction of cargoes at sea causing loss of stability and a swift capsizing. Intercargo, the dry bulk shipowners' association, believes that the legal and insurance positions, while important, are secondary to the safety of life at sea.

It is of utmost importance to raise awareness of the potential pitfalls that can occur through inadvertent lack of understanding. We need to work within the primary regulatory body – in the dry bulk sector's case, the IMO – to ensure

that we reduce the risk of such hazards.

So what exactly are those critical cargoes and what regulatory changes could be made to improve safety?

Dry bulk cargo safety is primarily managed through the International Maritime Solid Bulk Cargoes (IMSBC) Code. The code became mandatory under the SOLAS Convention in January 2011, requiring equal efforts from shippers, shipowners and other parties for proper declaration and preparation of cargoes for shipment.

The IMSBC Code is subject to a rigorous two-yearly process of amendment, during which concerned parties – usually 'national administrations' (governments) acting on behalf of responsible shippers – can present draft 'schedules' for approval through the IMO process. A schedule is a description of the specific dangers related to a specific cargo and

There is a hardening opinion that ship- and shore-based safety for dry bulk cargo requires fit-for-purpose regulation

Rob Lomas *Secretary general, Intercargo*



Photo: Intercargo

Clarifying cargo categorisation

One of the potential hazards for some cargoes such as nickel ore is liquefaction – a process by which a solid cargo can act or flow like a liquid if its moisture content (MC) is in excess of its transportable moisture limit (TML).

External forces, primarily the motion or vibration of the ship in a seaway, can result in cargo liquefaction, causing potential stability problems, a cargo shift or slump, movement of excessive free or standing water or, in extreme cases, a free-surface effect that can lead to a potentially uncorrectable list and capsizing.

Cargoes known to represent a potential liquefaction risk are known in the IMSBC Code as 'Group A' cargoes. The formal categorisation of all cargoes is as follows:

Group A – cargoes that may liquefy if shipped at an MC in excess of its TML

Group B – cargoes that possess a chemical hazard on a ship

Group C – cargoes that are neither liable to liquefy nor possess a chemical hazard.

gives information on how to make sure the cargo is carried safely. After they have been discussed by governments, representatives of shipowners and insurers, the schedules are released to provide basic information to the supply chain participants about the nature of hazards and their required management.

Shortly before this issue of *P&H* went to press the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC) finished its 17th session. At this meeting it agreed a draft amendment to 02-13 to the IMSBC Code, including a nickel ore schedule. At time of writing it was being reviewed by the Editorial and Technical Group 18 (E&T 18) before its submission to the IMO's Maritime Safety Committee, hopefully for adoption in June 2013. The Round Table of International Shipping Associations, including Intercargo, expects these amendments to become a voluntary requirement on 1 January 2014 and a mandatory IMSBC requirement a year later.

DSC 17 agreed to complete its deliberations on a draft iron ore fines schedule at its next meeting, taking into account extensive research from Brazil, Australia and other countries. An MSC meeting will approve the

document and, subject to agreement, some countries appear to be willing to consider an early implementation of the finalised schedule. (See Maritime Update, page 43.)

There is certainly an expectation that, given the safety risks posed to seafarers and shoreside employees, these safety measures could benefit from earlier implementation. An IMO paper presented by the USA and the International Bulk Terminals Association at DSC 17 supporting non-mandatory terminal training and raising awareness is certainly to be welcomed and supported.

There is a hardening opinion that ship- and shore-based safety for dry bulk cargo requires fit-for-purpose regulation and a safety culture at least equivalent to the standards in the container and tanker sectors. To achieve this, all the stakeholder parties must pull together.

There have been instances when cargoes have been misdeclared so that safety regulations could be circumvented. For example, a cargo may be given a commercial rather than a technical name, making it difficult for the supply chain participant to appreciate the safety implications attributed to the cargo. Some cargoes are not yet listed in the IMSBC Code, which again makes it difficult for supply chain participants to make informed choices. If a situation such as this were to arise in the UK,

the Department for Transport could step in. However, in some countries a supply chain participant has nowhere to turn if they wish to dispute the authenticity of a cargo.

It can be even more difficult to re-engineer these kinds of attitudinal change than to introduce regulatory or technical solutions, such as the moves towards developing specialist ships capable of carrying liquefaction-prone cargoes. Port authorities can help bring about a change in safety culture.

Intercargo and our industry colleagues in the Round Table, together with our P&I and underwriter colleagues, offer our unconditional support towards improving the safety of everyone connected with the shipment of dry cargoes. **PH**

More info: www.intercargo.org



Liquefaction can lead to vessel instability. A draft schedule for nickel ore was agreed at IMO in September



Photo: MTD

The institute welcomes students from across the globe and arranges field trips as part of their studies



Photo: UNESCO-IHE

practical or theoretical problem and may be carried out with an external organisation, for example in the home country of the student. Listed below are some examples of recent MSc studies in the port field.

Quay wall design for future vessels. The increasing size and deadweight of container ships prompts questions about whether existing quay walls can accommodate them. The study investigated whether the newest quay walls at the port of Rotterdam could accommodate a future 22,000teu vessel as conceptualised by a Korean shipyard.

Passing ship effects. The effects of waves generated by ships sailing in a confined waterway on a ship berthed along the waterway or in an adjacent basin were studied with the use of the software program XBeach.

Berthing velocity and fender design. The international standards and guidelines on quay design and fender selection all make use of data on berthing velocity that is outdated. Within the framework of a PIANC working group, created to prepare new design guidelines, considerable data on berthing velocity, ship characteristics and wind conditions at several locations were collected at the Port of Rotterdam for

container ships, tankers and dry bulk vessels. For each ship type, relations were established for berthing velocity as a function of displacement, tug assistance, wind velocity and direction.

In addition to the MSc programme UNESCO-IHE organises short courses, between two and three weeks long, aimed at upgrading and refreshing the knowledge and skills of mid-career and senior professionals. These are tailor-made or regularly held courses, such as the annual International Port Seminar, which this year was held for the 48th time.

The three-week course alternates lectures and exercises, and includes field visits to the most important ports in the Netherlands and neighbouring countries. The seminar addresses technical, economic and environmental developments in the classroom and in the real world. An example of this is the port simulation game in which the participants work in teams on a new port development, applying technical and cost data within given environmental and contractual constraints to realise an economically justified and sustainable solution.

UNESCO-IHE has developed from a hands-on diploma course to a fully accredited academic institution. The success of the institute can be measured from the number of applications that have to be turned down each year. For that reason there are plans to expand capacity by establishing satellite institutes in several regions of the world, where lectures and research are carried out in close co-operation with the staff in Delft.

Candidates seeking financial assistance to cover all or part of their costs for a study programme can apply for a fellowship. **PH**

More info: www.unesco-ihe.org

IAPH-sponsored training success

Two IAPH members were awarded IAPH scholarships in 2011 as part of the organisation's annual training programme. Massata Fall, of Port Autonome de Dakar, and Benjamin Terngu Humbe, of Nigerian Ports Authority, attended courses at APEC Antwerp. Both enjoyed the training and found it to be hugely beneficial.

Humbe, assistant manager, traffic, participated in an 11-day Port Environmental Policy and Technology programme in 2011. He told IAPH that it was a very "informative and stimulating seminar" that highlighted, among other things, the "issue of economic growth from the point of view of the environmental impacts while noting that cohabitation between ports and nature and the environment is possible and necessary". Humbe added: "The role of thematic policies and strategies to ensure co-ordinated developments at the ports was also appreciated and imbibed."

Humbe has already started passing on all that he learned on the course to the management at Nigerian Ports Authority, "which shall certainly be of tremendous benefit both for now and the future, as my organisation – in its new role as a landlord port – oversees the activities of the numerous terminal operators granted concessions to operate at the seaports in Nigeria".

Fall, who is the marketing and communication service manager at Dakar, attended the Concession Management and Port Promotion Strategy course and reported that it was "fruitful training" and that the topics covered were as informative as expected. He said that the "large number of participants and the knowledge of the lecturers" meant that his learning was reinforced through exchanges and conversations with his port colleagues. He told IAPH that he returned to his port "full of knowledge", and said it was a good opportunity to "get new experiences and strategies for the development of our companies". He would like to see more African delegates make the most of the IAPH Training Scholarship.

Four centres are recognised as IAPH-affiliated training establishments: PSA Institute, Singapore; IPER, Le Havre, France; APEC, Antwerp, Belgium; and IBC Global Academy (distance learning).

If you are a young, full-time member of staff at an IAPH-member port in a developing country you could be eligible for a scholarship. Visit the IAPH website today to find out more.

More info: www.iaphworldports.org or email info@iaphworldports.org





Synergies across industries

Marine contractors and ports have much to learn from each other's training provision, believes IMCA's **Hugh Williams**

The projects with which the member companies of the International Marine Contractors Association are involved around the globe inevitably start in ports and harbors. The 850-plus members of IMCA are drawn from the offshore, marine and underwater engineering industries and the organisation's principal role is to promote offshore safety and address technical issues.

Because of the paramount importance of safety and efficiency, there is great synergy between ports, harbors, the people involved in running them and the marine contracting industry. In sharing those common interests, are there, or can there be, overlaps in training and competence to the benefit of both industries? I strongly believe that is the case.

IMCA does not run training courses. Its role is to provide guidance on course content, entry level requirements and related topics, with actual courses and training provision developed and offered by individual training establishments or overseen by other relevant bodies. We also publish a framework that defines competence related to many offshore construction roles that can be achieved in part by specific training courses. We run two major seminars

each year where training features on the agenda. Early in the year we hold a Safety, Environment and Legislation seminar, next scheduled for Dubai in February, and a larger annual seminar, which this year took place in Amsterdam in late November. IMCA also runs a variety of smaller competence workshops.

IMCA has a special membership category for training establishments to help improve dialogue so that the industry can make clear its needs and expectations with regard to training outcomes, identify appropriate syllabi and update training organisations on technical developments and IMCA guidance. There are currently 95 members in this category.

The marine contracting sector has a proud reputation for providing high-quality training at every stage of an individual's career. IMCA publishes guidance, much of which is free to download from the web, for the benefit of its contractor members, universities, specialist schools and other training establishments worldwide. It all has a single goal – the 'holy grail' of zero incidents. Our guidance covers topics such as basic safety and induction training for marine crew and non-marine personnel alike, assessor training, use of simulators and a variety of other topics.



Photo: Farstad Shipping

Offshore operations in action. Training requirements for ports and the offshore industry often overlap

IMCA's Security Task Force helps members address concerns relating to security, piracy and terrorism. As marine construction expands around the world, security of assets and personnel, both in transit and on site, is fundamental. The dedicated IMCA task force develops industry good practice guidance, provides a forum for sharing security-related information and undertakes other initiatives to benefit the industry. This work has particular relevance in the current environment of heightened security alerts in many parts of the world.

IMCA security guidance comes in four forms: written guidance, DVDs that can be used at company or project training sessions, safety pocket cards and eye-catching safety posters.

Key documents of use to those at either end of the gangplank are *Guidance on travel security* (available in English, Brazilian Portuguese and Latin American Spanish), *Introduction to the International Ship & Port Facility Security Code (the ISPS Code)*, *Threat risk assessment procedure* and – perhaps the most relevant of all as a training aid and day-to-day work tool for those involved with ports – *Verification of third-party security personnel*. These documents are available for free downloading from the IMCA website, with printed copies available at a modest cost.

Verification of third-party security personnel is particularly pertinent to the port industry. Experience has shown that while in port, ships regularly require extra protective security to counter threats that may stem from various local factors. Shipping companies tend to rely on local shipping agents to organise this, and on occasions local private security companies are deployed without sufficient consideration being given to those companies' structures, recruitment standards, training procedures or guards' abilities. These concerns are every bit as applicable to port facilities.

Those private security contractors that prove unsuitable for the role – for example, because they provide inappropriate standards of service – reduce the benefits sought by enhancing security provision. Potential weaknesses can be identified by carrying out a simple audit to evaluate the security contractor's suitability for this purpose before the company is contracted. This process of vetting aims to ensure that private security contractors will provide security



services of a high enough standard and security personnel who are fit for purpose. The document includes a list of the training requirements for port and ship staff and provides a comprehensive checklist to be completed by those involved with appointing the private security contractors.

Seeing is believing, which is why the Security Task Force has produced three DVDs for use in company training sessions: *Safe travel and security*, *Gangway security* (as valuable to those operating ports as those aboard the vessel) and *Anti-piracy and hostage situation awareness*. A pocket card on personal security provides a speedy reminder, and safety posters on vessel security (relevant to both seafarers and land-based personnel) and personal security reinforce the message with simple, easy-to-understand illustrations.

One of IMCA's latest DVDs is *Safe lifting*. Almost no work can be carried out in any marine environment without a lifting process being involved. It is an essential component of all offshore operations. The skills and knowledge required for lifting operations have to be gained through experience and training as well as from written guidance. It is significant that about 95% of the 15-minute video is filmed on a vessel in port, showing the relevance of keeping safe to those on the shore as well as on the vessel.

The DVD is based on IMCA's related lifting good practice, particularly the guidance document *Guidelines for lifting operations*, available in English, French, Latin American Spanish, Italian, Brazilian Portuguese, Tagalog, Malay, Indonesian, Arabic and Russian – once again a superb training aid. The guidelines cover all vessels, their support bases and other shore operations.

IMCA's *Safety in shipyards* guidance is due for publication in December 2012.

The gangway may be seen as a divide between our member companies and those operating ports, but IMCA firmly believes in the benefits to the whole sector in sharing experiences. Our guidance is based on shared knowledge, and in 'real time' we share incidents via safety flashes and incident reports to try to ensure learning and avoid repeats. **PH**

Hugh Williams is the chief executive of the International Marine Contractors Association (IMCA), which represents offshore, marine and underwater engineering companies
More info: www.imca-int.com

IMCA firmly believes in the benefits to the whole sector in sharing experiences

Hugh Williams
Chief executive, IMCA



Photo: IMCA



Photo: Port of Rotterdam

When only the best will do

Port perimeter security demands the highest level of technology because the outdoor environment typical of ports and harbors is uncontrolled and unpredictable, writes *Blake Kozak*

Heavy rain, high winds, electrical storms and temperature extremes go with the territory. Hardware and software need to work flawlessly in all conditions, with a minimal risk of false alarms, which can be costly to an end-user.

In the past, perimeter security meant little more than a fence or a wall, perhaps with manned patrols. Today, however, a range of high-tech detection options is available such as multiple sensor arrays, many of which are invisible to potential intruders. From these technologies has evolved a system approach that

embodies the whole security philosophy (*see page 20*):

- Maximum possible detection/warning
- Maximum possible deterrence/delay
- Maximum possible reaction.

Perimeter systems can be divided into three types: virtual fences, fence-mounted sensors and embedded smart fences. Each port needs to consider which of these options best meets its needs.

■ **Virtual fence.** Six types of sensor are available: microwave, buried cable, ground-based radar, photoelectric beam, infrared and dual technology.

Today a range of high-tech detection security is available

Blake Kozak

Perimeter security analyst,
IMS Research



Photo: IMS Research

They are often used in high-security locations at ports, and also airports, chemical factories, utilities and military facilities.

The great benefit of these devices is their versatility, because they can be mounted independently as well as fixed to a fence or wall. This means they have the potential to detect an intruder before the individual reaches a physical fence line. In some cases, they can track a potential intruder, which increases the probability of detection.

For specific locations within a port, certain technologies offer particular advantages. For example, microwave sensors are ideal for high-security sectors and sensitive port sites. Where aesthetics are particularly important, buried cable systems are preferable to fence-mounted cabled systems; they can also be used as an invisible, complementary array for physical fences. Ground-based radar originated from government and military applications, but is becoming more popular at ports and other facilities that require scanning over large areas. Photoelectric beams are widely used, because they require relatively little maintenance or calibration whereas sensors may need more periodic upgrades. Passive and active infrared sensors are, if designed specifically for perimeter security (rather than outdoor use), good for medium distances up to around 100m. Dual-technology sensors combine infrared with microwave and are usually configured for 'and gate' operation – ie both technology elements must activate simultaneously for the sensor to alarm, which reduces the risk of

false alarms. The microwave detects an intruder's motion, while the passive infrared detects infrared (heat) radiation emitted by an intruder. Typically, they have a 15m x 12m detection pattern and are used in conjunction with fences and buried cables.

■ **Fence-mounted sensors.** These are designed to help direct security personnel to the exact location along a fence line where an intrusion has occurred. This is an improvement on earlier versions that were limited to a fence zone that was typically 100m long (a benchmark set by the military).

Integration with closed-circuit television (CCTV) allows for more precision, especially with the introduction of range detection. Range capabilities along a fence line vary according to the type of cable used. For example, electrostatic copper cable sensors currently do not incorporate range technology, only zone features, whereas vibration copper sensors and microphonic copper sensors can have zone detection or range detection. Fibre-optic equipment can have both forms of detection.

The market for fence-mounted sensors is likely to be the fastest-growing in the medium term – forecast at 6.9% in terms of revenue to the end of this year. This growth is expected to be driven mainly by fibre-optic sensors, which are typically used on fences that cover long distances or are installed as buried cable alongside pipelines. These sensors are better protected from weather conditions, because they require only a limited amount of electronics in the field.

■ **Embedded smart fence.** Despite offering a high probability of detection, these sensors have the smallest uptake of all perimeter security technologies because of their relatively high installation costs and maintenance. For certain applications, however, ports should consider them. The smart bar, for example, is custom-made to complement a perimeter system and can be used as a grid in water applications to prevent water-based intrusion into harbors or ports.

Other systems include electric fencing, which can be considered for high-priority locations in ports, and taut wire. The latter requires more maintenance because the tension has to be maintained to prevent false alarms.

Overall, the major reason for these technologies having the slowest growth is closely related to their



High security – tank farm protected by dual fences with mounted sensors, probably with a beam sensor/buried cable between them, and overseen by CCTV



A fence overseen by CCTV; the reaction team includes dogs



CCTV has become ubiquitous



Note the 'ISPS location' legend on the warning sign

Photos: Port of Rotterdam



Photo: APM Terminals

Without security personnel, sensors are normally helpless



Photo: Port of Los Angeles

Los Angeles' threat detection centre

niche applications, rather than through any defect in their performance.

At ports and harbors – and their high-risk facilities such as petroleum tank farms – the terrain itself helps to determine the type of perimeter detection technology to be used. Many of the virtual fence sensors are line-of-sight or provide coverage over limited distances. Although microwave sensors can be bistatic (two sensors similar to photoelectric beams) and cover distances as long as 750m, these beam sensors require a flat terrain so that a trespasser cannot either climb over or under the sensor beam.

A monostatic microwave or dual-technology sensor may provide wider coverage, but is likely to be limited to about 80m. Similarly, ground-based radar cannot detect an intrusion via a gully or dip in the topography (a blind spot).

For petroleum tank farms and similar types of sensitive area the size of the complex and remoteness of the location may help determine the technologies that should be employed. If the area is extensive and remote, a combination of a fence-mounted fibre-optic system with ground-based radar and CCTV analytics may be appropriate. Other combinations might incorporate more specific detection around smaller blocks within the actual compound or perimeter.

Having perimeter security within perimeter security – especially for high-value targets – could prove cost-effective and add additional layers of security. For ports and harbors, the detection technologies used will be similar to those at other high-risk sites, although water-based detection through underwater fence sensors and gate sensors are an additional precaution to protect pipes, drains, open tunnels and canals.

The future of perimeter security technologies will see increased emphasis on integration, cameras and better detection reliability. In recent years there has been a climb in the demand for intelligent devices and thermal imaging cameras or, in some cases, a combination of the two technologies. Integrating cameras to allow verification of an alarm will become the norm over the coming years, especially as intelligent devices become more reliable.

Because no two perimeter locations are identical, especially in terms of end-users and regulations, widespread standards for high security locations may still be some way off. Perimeter security technologies will continue to evolve with increased adoption at sites that require early detection technologies. Skilled integrators and partnerships among different security suppliers will be necessary for the perimeter security industry to reach its full potential. **PH**

Detect, deter, delay, react

Commercial ports will always be vulnerable to water-based intrusion – you can't put a physical barrier along your quays. But the reason 'fences' are split into three categories is that although they are all barriers, in some cases they are not actually physical.

Virtual fences are not physical, but while projected beams or buried cables will not stop an intruder, they will pinpoint where he is and some are smart enough to 'follow' the intruder and tell security where he's going. For example, thermal imaging, often deployed from police helicopters, spots intruders by their heat signature even if they are hiding in undergrowth.

This sort of 'fence' is very useful along a quay, which by its nature is flat and level, and also over large areas

that are not especially high-risk, but where it is important to know that a potential problem is developing. In other words, they give the maximum possible detection and warning. If this approach is backed up with closed-circuit television (CCTV), port security is able to prepare for the maximum possible reaction. That reaction can be escalated from a single security guard to a remote-controlled explosive missile – although the latter is hardly likely to be used in a commercial port.

Most ports have existing landside fences, which can be fitted with sensors that are designed to alert security personnel to an intrusion and to pinpoint it. Given that port fences are often at the limit of the land owned,

they should be designed to give a high level of deterrence in addition to delay and detection.

Smart fences are designed to be not just barriers, but intruder detection devices too. They are particularly useful over long perimeters, especially for ports spread over a large areas of differing terrain.

The port can mix and match all of these detection/deterrent approaches and add CCTV. Much depends on the precise level of security risk faced by the facility in question. It makes little economic sense to provide the same level of security to a coal yard as to a petroleum tank farm or a high-risk chemical warehouse, but it is still important to know if an intruder has gained entry – hence the need for a virtual fence.



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Safety culture goes higher than dockside

TEPSA Bilbao's comprehensive approach to safety has resulted in an impressive 10-year record, as its health, safety, environment and quality manager, **Arturo Ricarte**, reveals

In June, TEPSA Bilbao celebrated 10 years without any accident that required a member of staff to take time off work. The terminal handles a variety of bulk liquid cargoes including petroleum products, chemicals and biofuels – all potentially hazardous cargoes that require careful handling. In 2011 it handled around 3M tonnes of outbound cargo.

That 10-year success record is the result of the systematic application of a policy for safety and accident prevention. The company puts great stress not only on its terminals' performance but also on the way that activities are undertaken in secure conditions that ensure the safety of employees and everyone working in TEPSA's facilities.

TEPSA has its own health, safety and environment (HSE) department. Its mission is to implement correct procedures, to detect and alleviate any potential HSE risk and, thereby, to ensure the safety of the people and the company's facilities. Every day, this team of dedicated people is working to improve safety conditions.

As a participant in the Regional Commission for Safety in the Chemical Industry (COASHIQ), TEPSA attends the commission's meetings and assemblies. It is also involved in discussions on the application of new legislative proposals, accidents that have occurred in the chemical industry and new technological applications.

Six safety advisers meet periodically to incorporate changes to operational regulations and to revise the training of our employees and the drivers who operate in TEPSA's facilities.

To achieve a high level of safety at its terminals the company implemented a broad-scoped programme in 2007. The first step was the creation of the HSE department, which was followed by the launch of 'Plan RA'. The latter came about as a result of an external audit into state-of-the-art safety. This four-year plan was designed to improve HSE standards by reviewing and redesigning operational processes and procedures, changing organisational structures, creating new HSE jobs, and investing in new technology and safety equipment for the terminals.

The HSE department recognised the importance of being close to TEPSA's sites to reduce reaction time and improve HSE surveillance. New jobs, such as HSE co-ordinators, were therefore created in each terminal.

As part of the Plan RA framework, TEPSA invested around €7M (\$9M) in safety and operational improvements. This included investments in new high-level tank alarms and chemical filling controls for trucks.

These investments and structural changes are supported by a continuous safety culture. Two or three times a year all the health, safety, environment and

TEPSA's safety credentials

TEPSA is an independent company operating bulk liquid storage terminals in the main elements of the Spanish port system: Barcelona, Bilbao, Tarragona and Valencia. Total storage capacity is around 890,000m³.

TEPSA Bilbao has a 320,000m³ storage capacity for bulk liquids, in 79 segregated tanks and is connected to the national pipeline network.

The company has taken the lead on safety, health, environment and operational quality in its sector, guaranteed by the main certifications and recognitions for its management system, such as ISO 9001, ISO 14001, OHSAS 18001 and EMAS III, CDI-T and RED.

The tank pit at the terminal has a firefighting system to hand

quality (HSEQ) co-ordinators meet to review processes and standards and to analyse risks. They put forward ideas and proposals to be developed.

A safety terminal committee with employee representative participation meets quarterly to review all aspects of HSEQ that affect the terminal. An external expert also attends these meetings as an adviser.

TEPSA's own accident investigation team analyses any incident that may occur at a terminal, then distributes the conclusions and a brief action plan to help avoid similar incidents in the future. It investigates various types of 'near-miss' and shares the lessons learned among employees. This is seen as a valuable learning tool.

More widely, the HSEQ department participates in several forums in the Spanish chemical industry to keep up to date with developments outside TEPSA.

The company's main commitment to safety is evident in its extensive training programme. This covers all aspects of operational and HSE issues related to a bulk liquid terminal and takes between three and four years to complete. The HSEQ department defines the themes and content for a yearly training plan, which is then incorporated into workers' schedules by the terminal managers. Training is integrated into the workers' labour time – there is a training session each

Wednesday – and has to be completed within a year.

In 2011 each employee underwent 20 hours of training in safety alone. Refresher training, in topics such as personal protective equipment, entry into a confined space and chemical risks, has to be completed every year.

Training extends beyond the port employees. In 2010 TEPSA launched a programme for truck drivers to ensure that they understand how to operate safely within the terminal. Every day hundreds of trucks from different countries arrive at TEPSA's terminals for loading and unloading.

The first time a driver enters a TEPSA terminal they are required to complete a brief training programme and comprehension test. If they fail the first time, they are allowed three more attempts. The test is held in a little building just inside the entrance to the terminal.

TEPSA staff check the condition of the truck and its security features. Both the operator and the driver must use the personal protective equipment specified in the cargo documentation. Security staff carry out random checks to ensure that these procedures are being followed. Finally the tank is checked before it leaves the facility. **PH**

More info: www.tepsa.es

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An **explosive** threat removed

Rhys Jones explains how BMT JFA Consultants cleared munitions from the Australian Port of Albany and made it safe for future development

Many ports and maritime installations around the world run the risk of explosive ordnance (EXO) contamination as a legacy of conflict, whether as a result of military action or loss of munitions during transshipment.

Port of Albany in Western Australia was used as an embarkation point for surplus munitions in both world wars and saw EXO (munitions containing explosives) loaded on to barges for offshore disposal during 1947 and 1948. Anecdotal evidence backed up by recovery of EXO during subsequent dredging operations indicated that some items were lost overboard during this process and were never recovered.

The Albany Port Authority (APA) recognised that the presence of EXO located within the Princess Royal Harbour posed an unsatisfactorily high risk to the woodchip vessels that use Berth 6 and to future development plans to deepen Berths 5 and 6. To carry out this clearance work safely and effectively, the APA commissioned BMT JFA Consultants, with the support of other specialist partners, to develop an appropriate methodology. The main objective was to reduce any risk associated with EXO in the port to a level that was as low as reasonably possible.

A substantial amount of time was spent developing a robust EXO clearance methodology



Illustration: Tim Willis

“The main objective was to reduce any risk to a level that was as low as reasonably possible”

Rhys Jones

Project engineer, BMT JFA Consultants



Photos: BMT JFA

that took into account a number of critical site-specific factors, including:

- A number of large items of extraneous debris on the seafloor, including remnant jetty piles, that would be a potential barrier to any later dredging operations
- The presence of metallic items such as railway bolts, cables and railway track that exhibit magnetic signals and would create substantial difficulties in identifying items of EXO because of the high level of background metallic contamination
- Soft mobile sediment, which overlies a firm clay seabed at both of the demolished jetty sites, that would create difficulties when locating and removing items of EXO. The items of EXO were likely to be present within the mobile sediments on the clay surface, making visual identification impossible. The fine nature of the material meant any disturbance at the surface would rapidly reduce divers' visibility and prevent efficient operations.

Before starting work, BMT developed a three-stage methodology to address these issues. Divers began by removing large debris from the seabed to improve the efficiency of subsequent dredging operations by reducing the number of obstructions present.

In the second stage, the focus shifted to dredging a layer of soft mobile sediment that had accumulated. A standard suction pipe design was used in the early stages of this work but was quickly found to be an ineffective tool as it regularly became blocked by large amounts of debris.

Various operational modifications, such as a raker

bar, were tested in an attempt to improve productivity, but this did not have the desired outcome.

A new rotating cutterhead was developed to overcome the problem of blockages. The cutterhead was attached to the suction pipe and this set-up had multiple advantages. It mechanically cleared obstructions from the dredging apparatus using the combined effects of the rotational force of the cutter and the frictional force of the seabed. The direction of rotation, which was opposite to the normal direction of operation of comparable cutter heads, swept debris away from the head rather than 'cutting' into the seabed and entraining the debris.

The surface area of the gaps in the rotating cutter head was substantially larger than that of the suction pipe arrangement. This meant that even when objects did become blocked in the cutter head, it took much longer for the number of blockages to build up to the point that dredging productivity was badly affected.

This suction dredging work was undertaken in parallel with diving operations. The divers were able to review and assist the dredging operations each day.

Once the sediment removal had been completed, divers carried out a comprehensive inspection of the site on a 200% coverage basis to locate and identify all metallic objects that remained within the search area. The diver team completed this inspection in pairs that included at least one qualified explosive ordnance disposal diver and used a handheld metal detector to locate any objects.

Only a relatively small number of EXO-related items were recovered from the two jetty areas but some 15,000m³ of soft mobile sediments was dredged. This indicates that the likely level of contamination at the site was, and remains, very low.

Moving forward, the APA now has confidence that the likelihood of encountering EXO at the site is as low as can be practically achieved. This in turn allows for the development of future projects.

The circumstances that made this approach successful were unusual, so although a broadly similar approach could be adopted in comparable situations, each job would need to be tailored to ensure that the site-specific constraints were properly managed and addressed. **PH**



Modified cutterhead in the fabrication workshop: note the 70mm maximum aperture between the raker bars



Seabed inspection with a metal detector



Dredged material discharging into settlement ponds

Photos: BMT JFA



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Photo: Smit Salvage

Refining response to fire

The USCG is working with salvors to improve emergency response to vessels on fire in port, reports **Raymond Lord**

US marine firefighting requirements have shed light on ways to improve emergency response to shipboard fires

The *Exxon Valdez* disaster of 1989 dramatically brought the issue of port and harbor safety to the forefront of public awareness. Overnight, the USA saw what an accident of such magnitude can mean to a port, the local community and the surrounding environment. With the enactment of the Oil Pollution Act (OPA 90), which was signed in to US law in 1990, attention became focused on developing an emergency response system that could respond to a huge release of oil from a stricken tanker vessel. The spill response industry as we know it today evolved remarkably fast.

The 9 September 2001 terrorist attacks caused

the country's focus to shift to port and harbor security. Again, an entire industry, complete with new rules, regulations and procedures, was developed and implemented at a pace possible only in the USA. The US Coast Guard (USCG) continues to work diligently in identifying potential ways to improve port and harbor safety throughout the country. Its commitment and co-operation with the salvage industry has led to the development of the new 33 CFR (Code of Federal Regulations) Part 155 rules governing salvage and marine firefighting requirements.

Previously, it was assumed that in the event of a vessel catching fire at a US port or within its waters, salvors would appear and respond appropriately to the emergency. Over the past year the introduction of the CFR regulations have seen these assumptions brought into focus and put to the test. The regulations have cast light on several issues for the USCG and salvage industry to consider.

Port security and pollution control remain vital components within overall port safety, but now the scope has expanded to include scenarios that require additional and possibly unique response capabilities, including events that may involve a shipboard fire.

The first step is to assess the present standards. Marine firefighting resources have recently been subjected to preliminary drills and vetting processes under USCG direction to verify planning standards and develop a degree of confidence that properly

trained personnel and equipment are able to arrive on scene quickly and efficiently. The salvage industry has responded positively and has been making great efforts to comply with all the standards established within the regulations.

This initial drill and vetting period has so far identified several areas of possible concern. During a response to a major shipboard fire a variety of resources are likely to arrive on the scene simultaneously. In these instances, co-ordination of, and co-operation with, all parties involved are paramount. Tugs equipped with firefighting equipment, local municipal fire departments with their resources, as well as the designated salvage team may all arrive at the site of the fire at the same time. The co-ordination and synchronisation of all these assets will be the key to an efficient and effective response. The USCG drill and exercise programme will help establish protocols and develop plans within each COTP (captain of the port) zone to ensure that if there is an incident all parties are fully acquainted with their respective responsibilities.

As with all firefighting or emergency situations, the safety of crew and response personnel remains the highest priority. Firefighting on board a ship is different from firefighting on land and requires a particular approach that non-mariners can overlook. For example, it may be possible to reposition the vessel on fire to an area where it is more sheltered from the wind, or perhaps it can be towed out to sea to remove the threat to the port and community in general. It may be possible to contain the fire by sealing various compartments within its steel structure. On the other hand, unlike a building, a vessel can sink. One major concern when firefighting aboard a vessel is the effect on its stability of pouring in large quantities of water.

Because of these considerations there is no substitute for the professional salvor, who is trained and experienced in confronting these types of emergency situation.

As the drill and exercise programme continues to be refined under guidance from the USCG, salvage companies' response standards are expected to continue to improve as well. There is no substitute for proper planning and effective practice.

The newly established USCG regulations requiring the identification of resources, the development of planning standards for mobilisation times to each of the US port zones and pre-establishing contracts with tug companies, vessel owners and other resource providers can be seen as a tremendous leap forward towards improving the safety of US ports and harbors. **R&I**

*Donjon-Smit, a joint venture between the two salvage companies, provides OPA 90 maritime vessel emergency response services
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Photo: Smit Salvage

“ The first step is to assess the present standards ”

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Photo: Cargotec

Cargotec's Siwertell ship unloaders offer a high throughput and low-dust bulk handling solution, but are they worth the investment? *P&H* investigates

The unloading system minimises the release of dust when the cargo is moved

The development of world industrial economy has vastly increased the amount of bulk cargo transported by ocean shipping, without which trade, industry and ultimately our current lifestyles could not be maintained. Bulk cargo ships are far larger than they were a decade ago and an estimated 8,141 dry bulk vessels of more than 10,000dwt were trading internationally at the start of January this year, according to figures from Intercargo.

These larger-capacity bulk ships create economies of scale, but they also require ever-faster, larger and more efficient loading and unloading equipment to maintain turnaround in ports. As a result, many bulk import terminals find themselves needing extra unloading machines and having to adapt existing export facilities to meet import demands.

Equipment manufacturers have responded to these needs by producing a range of machines to meet ports' needs. One such manufacturer is Cargotec, which, depending on requirements for size and capacity and the material to be handled, offers a range of mechanical-screw-type ship unloaders under its Siwertell brand. Unlike grab unloaders, screw-type machines are able to operate continuously in stationary or mobile installations on rails and can unload both free-flowing and compact materials. Handling rates vary according to the type of cargo.

The company produces three models, the Siwertell 5000 S, 10000 S and 15000 S, each designed to handle free-flowing dry bulk cargoes such as cement, alumina, sulphur, grain, feedstuff, biomass and fertilisers. Recent Cargotec deliveries have included a very fast 1,800 tonnes-per-hour (tph) grain unloader to the UK and 1,500tph cement unloader to Houston, USA. Mark Clemence, operations manager at Houston-based cement company Ash Grove, was impressed. He told *P&H*: "We have been pleased with the performance of our Siwertell ST640 ship unloader as it has met our needs as well as the performance guarantees set by the manufacturer."

Ports are often located in environmentally sensitive or pollution-sensitive locations, and Siwertell unloaders are designed to minimise both dust emissions and spillage. The unloader's arm is totally enclosed from the pick-up point below the cargo surface in the hold to the transfer point at the jetty conveyor, creating a cleaner, safer environment, even for very dusty materials such as fertilisers and minerals, limestone, phosphate rock and gypsum.

This was an important consideration when global engineering, consulting and construction company Black & Veatch last month placed an order for a rail-mounted 1,500tph unloader for installation at its greenfield coal power plant under construction near the city of Davao, Mindanao, in the Philippines.

"The client had an early preference for a continuous-screw-type unloader in particular," said Ola Jeppsson, sales manager at Cargotec, "mainly because of its efficiency, reliability and environmentally friendly operation. The system's slim footprint and low weight also meant savings in jetty construction costs."

The machine's inlet feeder enables it to draw in cargo



Photo: Cargotec

Port of Paradip's rail-mounted Siwertell ship unloader runs along 2,000m of jetty

Below, Siwertell at Paradip where the inlet arm is easy to move into position; right, when combined with a mobile rail all parts of the cargo hold can be reached

efficiently from below the surface, even in compacted materials or under hard surface crusts.

Sulphur cargoes pose a particular hazard to the environment, because the dust is toxic and the material is prone to explode or ignite. Many countries impose strict environmental controls on operators to ensure safety during loading and unloading.

This was one of the factors behind the Port of Paradip's decision to install a rail-mounted Siwertell ship unloader in 2005, which was designed to replace an older, less-efficient grab unloader that had been prone to breakdowns. The Siwertell unit is used to service ships of up to 60,000dwt loaded with phosphate rock, sulphur and muriate of potash.

Almost seven years on, the machine functions as effectively as it did upon installation, said R M Malik, chief executive of fertiliser manufacturer Paradeep Phosphates, India, who oversaw the order, installation and running of the system. He explained: "Before the Siwertell we had a chain-type bucket unloader, which

“The remote control makes moving the inlet arm very easy”

suffered from repeated breakdowns as the chain frequently broke, or the buckets became damaged and needed maintenance. The new system is still performing well and requires very little maintenance, apart from some preparation before each unloading. On average we are able to shift over 1,000 tonnes of material per hour. The machine's also useful for unloading sulphur because of the threat of fire."

The manoeuvrability of the Siwertell arm system allows it to slew +/-110°, which, when combined with a mobile rail operation, enables all parts of the cargo hold to be reached, said Cargotec. These unloaders are also fitted with a vertical screw conveyor, which is available in different sizes depending on the material and capacity required. In some configurations, the vertical screw is designed as a continuous screw flight over the complete conveyor length with integrated intermediate supports, but specially adapted intermediate bearings can also be used.

It is possible to fit the unloaders with one or multiple outlets to enable the direct loading of trucks or railway wagons or one or more jetty conveyors. Continuous discharge on to a jetty conveyor is also possible, but the jetty conveyor should be covered to ensure environment-friendly transfer and onward conveying.

Each unloader requires just one person to operate it, either standing at the hatch using a radio remote control, or controlling it from the (optional) operator's cabin, located on a separate arm on the slewing turret, which follows the movements of the unloader.

"The remote control makes moving the inlet arm into position very easy," added Malik. "With a slim rail mounted along the entire 2,000m-long jetty it's also quick to move the unloader alongside docked vessels."

The Port of Paradip's unloader is running close to maximum output and handles 90–95% of bulk cargoes. With increased raw materials production planned, Paradeep Phosphates is making plans to invest in a second unit. **PH**



Photo: Cargotec



Photo: Cargotec

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Açu poised to bulk up Brazil port system

Eike Batista's big plans are coming to fruition as dredging starts at Brazil's Superport, reports *RT Watson*

No project better symbolises Brazil's hopes of jumpstarting its cooling economy with superior infrastructure than the Açú Superport. Located in the southeast of the country and covering 90km², Açú comprises two major terminals: TX1 offshore and TX2 onshore. Construction is scheduled to be wrapped up next year, when the privately owned Açú will be the largest port complex in Latin America and the third-largest in the world.

LLX Logística – a subsidiary of billionaire Eike Batista's EBX Group and the driving force behind the enormous project – is optimistic that Açú will allow Brazil to open up to world trade on a scale that was never possible with previous infrastructure.

Strategically located in a region that accounts for 75% of Brazil's GDP, Açú will ultimately boast 17km of quayside capable of handling 40 large carriers. LLX predicts that Açú will handle up to 350M tonnes of cargo a year, including 2M barrels of oil per day and 100M tonnes of iron ore a year.

Iron ore will be transported as slurry through a 500km pipeline connecting mines in the state of Minas Gerais directly to the port, removing the necessity of

trucking. Two giant hydrocyclones will separate water from the ore when the slurry arrives in Açú.

Previous scepticism about the mega-project has faded. "A couple of years ago, the naysayers and the doubters were in the majority – that it would be late and [LLX] wouldn't get it done," recalled John Riggs, MD of InterMoor do Brasil.

Riggs said that he was all too familiar with "problems within the Brazilian business culture", yet his company was one of the first to solicit and sign an agreement with LLX and Açú. In addition to the usual apprehensions associated with project execution in Brazil, doubts were also raised by ambitious targets and difficulties associated with building a greenfield port.

An aggressive timetable for constructing TX2's channel was one of the largest hurdles faced by LLX. For this task, LLX contracted Dutch dredging specialist Royal Boskalis Westminster. Boskalis was hired to dredge the access, the inner channel and the harbor basin, and complete any necessary land reclamation work.

According to Boskalis's regional manager in Brazil, Jord Veldman, the contract was signed on 29 July 2011

and the company had until 1 October to complete the offshore aspect of the operation. After that date, said Veldman, Boskalis was not allowed to dredge offshore, because of strict regulations associated with the change in season and potential risks to the surrounding habitat.

Using only one cutter, the *Cyrus II*, and a special process called the Christmas Tree, Boskalis was able to "get the dredger beyond the high-water line" in just two months, Veldman said.

He explained the technique: "It's a special anchor configuration. You don't work on the spuds but you work on an anchor configuration. Basically, you put one anchor straight behind you, then one on each side, and then two ahead of the vessel."

Boskalis achieved its goal of breaking the beach on time and is now dredging TX2's channel with four dredgers: trailer suction hopper dredgers (TSHDs) *Seaway* and *Cornelis Zanen*, and two large cutter suction dredgers (CSDs), *Cyrus II* and *Taurus II*.

"We have the two cutters working inside and they dredge the sand layer until -8 to -10m," explained Veldman. "The hoppers are doing all the work outside and also anything that goes beyond 10m inside, because it's different material that is not usable for the construction of the port."

A spokesperson from LLX confirmed: "Currently, the channel is 4.7km long, 300m wide and 12.5m deep. About 26.5M m³ has been dredged, which represents 63% of the total 42M m³."

Boskalis is considered to be ahead of schedule and once dredging of the trenches is done, gravel beds will be laid for the construction of the breakwater with caissons. When finished, the TX2 channel will measure 6.5km by 300m, with 13km of wharfage at a draught of 10-18.5m.

According to Veldman, Boskalis should be finished by September 2013, but as new lands are leased by LLX and design and planning changes, so could the scope and duration of Boskalis's work.

LLX plans TX2 to be a leading support hub for the oil and gas industry. It will also handle a wide range of cargoes, including bulk solids, liquids, steel products, coal, pig-iron, slag from steel mills, granite, general cargo and cars.

TX2 will house both a liquid bulk facility, which

LLX will not operate itself, and a multicargo terminal (TMULT), which it has elected to manage. TMULT, with 1,155m of quayside, will handle and warehouse cargo. A depth of 14.5m will allow for the mooring of Panamax ships with the area outfitted with cranes capable of lifting up to 100 tonnes.

TX2 will also, in part, accommodate Brazil's soon-to-be largest shipyard, which will be owned and operated by OSX, also a subsidiary of Batista's EBX Group.

A significant part of Açú's operation includes its fixed offshore terminal TX1, completed in March 2010. TX1 has a 3km access pier and a channel dredged to 21m, although it may be dredged to 26m in the future. TX1 is designed to handle very large ship sizes (Capesizes and Chinamaxs for dry bulk, VLCCs for tanker operators) – five for oil and four for ore.

The entire Açú complex will be connected to the city of Campos dos Goytacazes in the north by a 43km logistics corridor, which includes railways, roads, transmission lines and pipelines, thereby connecting Açú to the national rail network and federal highways.

Over R\$2.6Bn (\$1.28Bn) was invested in Açú between 2007 and March 2012, with much of the capital acquired through developmental loans and offered bonds.

In August, LLX announced that it would sell bonds valued at R\$750M (\$370M) to pay for the construction of TX2. The bond offering followed a late July announcement by Batista that he planned to buy back all public shares of LLX and take the company private.

Batista then scrapped his buyback plans after receiving both a favourable appraisal of LLX's vitality and a Brazilian government announcement on aggressive plans to improve the country's roads and railways to facilitate trade. This will include rail lines connecting Açú to Rio de Janeiro, Minas Gerais, Espírito Santo and São Paulo.

As construction rapidly progresses, so too does leasing. Currently, Açú has R\$92M (\$46M) in confirmed annual land lease revenues. Much of the total 90km² is not yet leased, leaving ample space to accommodate other enterprises. **PH**

Dredging of the channel is under way at TX2 terminal

Dredging at TX2... Boskalis was contracted to carry out the work



Photo: LLX



Photo: TIPC

New era for Taiwan's ports

A new port entity was born on 1 March. Taiwan International Ports Corporation tells *P&H* about its current status and its future challenges as it plans to turn around the fortunes of the country's ports

Taiwan's port authorities have been through a reorganisation and the four harbor bureaus – Keelung (north), Kaohsiung (southwest), Taichung (central west), Hualien (central east) – have been corporatised and are now managed by the newly established parent company, Taiwan International Ports Corporation (TIPC).

The harbor bureaus had for a long time handled both the administration and business operations, and all were governed by Taiwan's Ministry of Transportation and Communications (MOTC). The ministry established the Maritime and Port Bureau (MPB) and TIPC simultaneously to separate into two managerial organisations the ports' administration and the business elements respectively.

The MPB, which maintains the governance and regulatory role, is a government agency with branch offices in the four ports. TIPC, a state-owned corporation funded solely by the MOTC, is the port business, consolidating the four ports into sub-companies.

As an island economy, Taiwan has a structure that is dependent on shipping and port businesses. In addition to the four major ports, TIPC encompasses

three auxiliary ports: Taipei, Su-ao and Anping. The Port of Taipei is located at the exit of the Tam-shui River, northwest of the greater Taipei metropolitan area. Su-ao is on the northeast coast and Anping is on the southwest coast. All of these ports are important to TIPC's mission to revitalise Taiwan's harbor businesses. TIPC has initiated a series of incentive projects and, in the meantime, improved the harbor facilities by carrying out construction and renovation projects.

Corporation president Tai-Hsin Lee – formerly director-general of Taichung Harbor Bureau – said that the growing number of ultra-large container vessels has prompted a trend among shipping lines to reduce their service routes, with the result that Taiwan's ports are facing much fiercer competition. TIPC has to be as flexible and efficient as possible if it is to perform successfully in today's difficult economic landscape.

TIPC is expected to integrate the country's international ports and co-ordinate its natural resources and manpower to generate high performance levels. It is not a government agency and does not have administrative shelter, but has been created for business purposes only and has to prove



Port of Kaohsiung today. The second phase of the container terminal should be finished by 2019

itself. "We are down to earth doing port business," Lee told his colleagues.

In the 1990s, Port of Kaohsiung was ranked third in the world for its container handling volumes and continued to do quite well in the early part of this century, but today Kaohsiung has dropped down to the 12th-largest port for container handling, its lowest position. Rapid development of neighbouring ports and markets is the major cause of the fall in rank of Taiwan's ports. It is the immediate mission of TIPC to lift the growth rate in container volumes and ship calls and to find a way to attract more shipping lines. It has to find a niche in the market for the future.

To achieve this, a number of projects will be delivered. Two massive compound buildings are to be built at the commercial wharfs of Kaohsiung and Keelung ports, costing \$138M and \$208M respectively. Both will accommodate offices, a waiting area for cruise passengers and gateways to the terminals. TIPC's headquarters will be located in Kaohsiung, and both buildings are expected to be finished in four years' time.

The second phase of the Kaohsiung Intercontinental Container Terminal, costing \$3.02Bn in total, will be another massive construction project. To be built on 422.5ha (4.2km²) of reclaimed land, it will comprise 19 deepwater wharfs and is expected to be finished by 2019. The project also includes a waterfront recreation space, which will transform the port area into a multi-functional port city.

TIPC was established during the most difficult times of the recession and it hopes to create a win-win situation by helping carriers keep their costs down. A free trade zone (FTZ) is one of the 'cost-down' projects that enable carriers to enjoy a tax holiday while in the zone. The idea is to ship materials into the ports' FTZs for assembly or manufacture and then ship out the finished or semi-finished products without paying tariffs and business taxes. TIPC hopes that it will encourage carriers to tranship cargoes via Taiwan.

The Blue Way project is another incentive scheme to give prizes to carriers that take the waterway to reduce highway congestion and carbon emissions.

The infrastructure improvement projects include the construction of new terminals and the establishment of cruise ship tourist centres in Keelung and Kaohsiung ports to attract cruise calls and thereby seize a bigger share of Asia's growing cruise market.

Improvement projects include the introduction of a gate automation system for wharf management, and onshore power systems to improve the ports' environmental credentials. More plans are being mapped out, such as harbor hotels and shopping malls and other peripheral infrastructure.

During the second half of the 20th century Taiwan was a proud 'economic miracle' and its ports' business was a major driver of that success. Regaining this glory will be a tough challenge for TIPC. The series of port renovations are just the beginning, and many more spending and investment plans are on the way.

On 6 August the Council for Economic Planning and Development of Taiwan approved a \$2.2Bn budget to TIPC for a five-year development plan. Most of this

Current facilities at four main ports

Port of Keelung

Port area of 196 ha (1.96km²)

56 berths, quay 10,000m in total length

Can accommodate post-Panamax vessels of up to 6,000teu

Core business

- Shortsea container shipping hub
- International cruise centre

Port of Taichung

Port area of 2,820 ha (28.2km²)

50 berths, quay over 12,329m in total length

Can accommodate cargo vessels up to 60,000dwt

Core business

- Cross-strait ferry terminal
- Regional logistics centre
- Distribution centre and industrial zones nearby

Port of Kaohsiung

Port area of 1,871 ha (18.71km²)

121 berths, quay 27,960m in total length

Six container terminals

Can accommodate container vessels up to 12,500teu

Core business

- Container transshipment centre
- Logistics centre
- International tourism and trade

Port of Hualien

Port area of 172ha (1.7km²)

25 berths, quay over 4,742m in total length

Can accommodate cargo vessels up to 60,000dwt

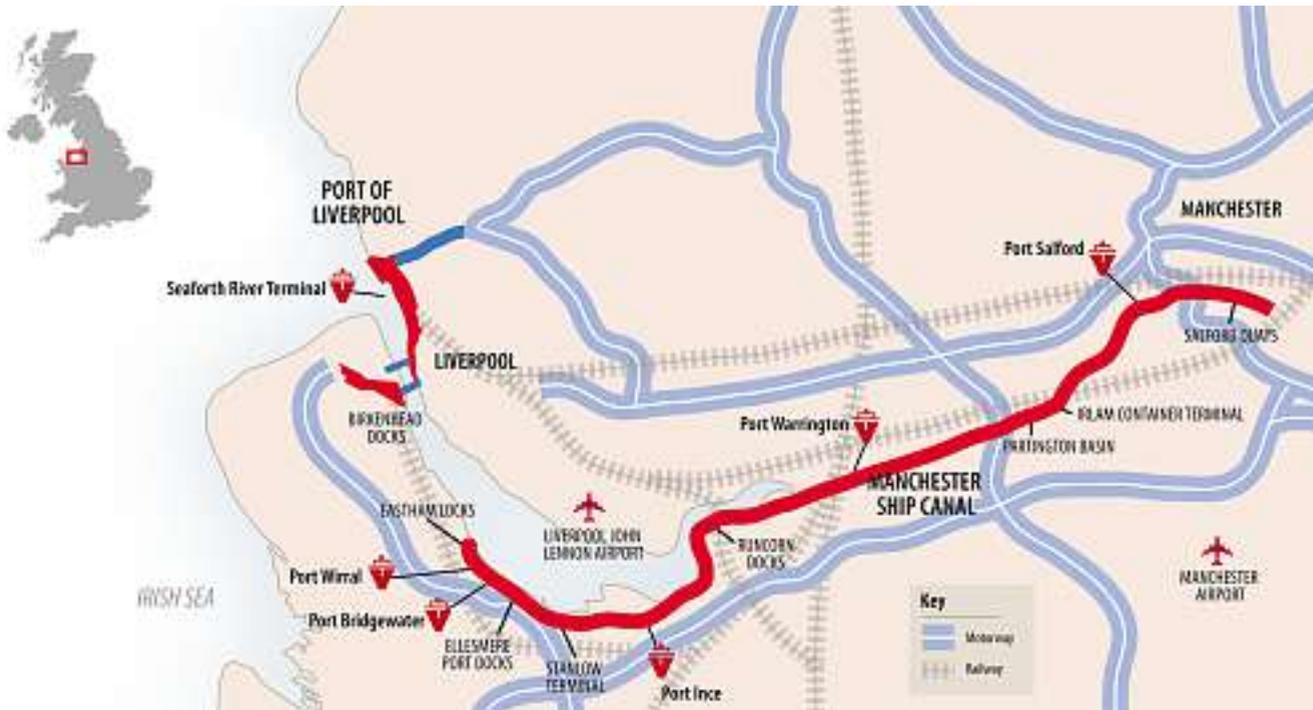
Core business

- Transshipment for cement, minerals and gravel
- Tourism and recreational industries

budget will be spent on new construction projects such as state-of-the-art warehouses and wharf facilities, additional access roads to and from ports, establishment of logistic parks and the purchase of larger tugs and dredgers.

Lee believes that the current gloomy market will be followed by bright sunshine that will usher in a new age of prosperity for Taiwan's ports. "The dark night shall reach its end in no time – we have to be ready before the waking of the dawn. Hopefully, by the time the world economy has recovered, we will have finished the major constructions and be well prepared for a new phase of flourishing," said Lee. **PH**

More info: www.twport.com.tw



Northern gateway

A \$48Bn infrastructure investment aims to attract cargo from southern to northern English ports, reports **Kari Reinikainen**

Ninety per cent of deepsea containers destined for the UK arrive in its south coast ports, yet half of them continue their journey to the north of the country, according to figures from Peel Group, which owns the Port of Liverpool and the nearby Manchester Ship Canal. The port company is a key participant in a project called Atlantic Gateway, which involves major investment in tri-modal infrastructure in the Liverpool-Manchester area over two decades.

Research has shown that new businesses would locate to the north of England, where rents and land are cheaper, but are held back by concerns over transport. The M6 motorway linking the north and south of the UK is plagued by congestion, said Dr Brian Sloan, economist at Greater Manchester Chamber of Commerce.

About 30M people – nearly half the UK population – live within a 200km radius of Liverpool, said Stephen Carr, head of business development at Peel Ports. It may currently cost more to ship cargo to Liverpool than to a south coast port, but thanks to lower landside costs, the overall cost of using Liverpool for a customer in that region may be lower.

“This project will be beneficial for the entire north of England; the economic benefits do not stop at a line on the map that marks administrative boundaries,” said Sloan, who added that, assuming projected growth in freight volumes materialises, the cost of shipping freight to Liverpool may fall to that of south coast ports.

The project also includes investment to improve the railway network, expand airports at Liverpool and Manchester, and add tri-modal – sea, rail and road – logistics facilities able to attract distribution business that is currently focused farther south. Together, proponents say, these facilities would create a ‘super port’. “A super port with distribution centres could attract a lot of business here,” Sloan told *P&H*.

Malcolm Bingham, policy manager for the Freight Transport Association, believes the Atlantic Gateway’s heavy focus on multi-modality is its strongest point. “It is a wonderful opportunity for the northwest of England as it boosts the entire transport system – rail, road and water,” he said, adding that investment in new facilities on the Manchester Ship Canal is likely to accelerate a modal shift to the use of waterways.

“Economic benefits do not stop at a line on the map that marks administrative boundaries”

Dr Brian Sloan
Economist, Greater Manchester Chamber of Commerce



Photo: Brian Sloan

"Reliability is a key point," he continued; "what really hurts industries is when something happens to the [transport] network that leads to disruption to systems, as this leads to a rise in cost."

Improvement to the entire transport network, as envisaged in the Atlantic Gateway project, is a major driver for accelerating economic activity and investment. Alan Robertson, director at the UK-based consultancy Webster Robertson, is optimistic, but cautious. Peel Ports' post-Panamax deepwater container terminal at Port of Liverpool, Liverpool 2, is scheduled start operation in 2015. Robertson believes that this new terminal is key to Peel Ports "being able to retain their current customer base in the light of those customers, and any future ones, requiring larger tonnage than the Seaforth system can allow". Retaining the business of Atlantic Container Line is a major element here.

"The difficulty for Seaforth terminal [Peel Ports' existing container terminal at Liverpool] lock is that for deepsea customers it really only works for North Atlantic services, as it would require discounting to induce in a Far East major operator, even though they will argue that a significant amount of the containers will be distributed or require distribution in the north. So landside savings can, to an extent, compensate for additional margin costs," Robertson said.

Lines have a number of factors to consider, and over-capacity could skew things in favour of the southeast. "Given that Felixstowe 2 is on service and London Gateway [is] about to be on stream in 18 months, then southeast capacity will increase ahead – in my view – of demand, so creating discounting [and] to a larger extent making Liverpool further challenged," he commented.

The 40km Manchester Ship Canal could provide options as part of an all-water distribution alternative to road provided it can be linked to a cost-effective transshipment hub. "So I could see container feeders calling [at], say, a northwest coast port and then Manchester direct. It may therefore be possible for Peel to use Liverpool 2 for North Atlantic deepsea and use Manchester for feeding," he concluded

Developments took a major step forward in early August. Peel received a £150M (\$243M) loan from the European Investment bank to cover half of the cost of Liverpool 2. The entire Atlantic Gateway project

calls for £30Bn to be invested in the region's infrastructure by 2030, with much of this sum being required for maritime assets. The project has five core areas: growth, connectivity, infrastructure, sustainability and talent, according to a draft business plan published in December 2011.

Peel Ports' master plan to develop facilities at Liverpool and Manchester is not limited to containers, but includes ro-ro, dry and wet bulk and windfarm projects. The company's target is to offer more value to its customers through port-centric warehousing, processing facilities for imported commodities and more customer-friendly processes.

New container ports will be built on the canal at Wirral, Bridgewater, Ince, Warrington, Irlam and Salford. A 160teu pusher tug-barge combination vessel is already in operation to carry boxes between Liverpool and Irlam Container Terminal near Manchester, where a 40-tonne Liebherr mobile crane has just arrived. This service is expected to carry 15,000teu in 2012, five times the figure of three years ago.

Liverpool 2 alone is forecast to almost double the port's current capacity (Port of Liverpool handled 672,000teu in 2011). Liverpool 2's river berths will be able to take two 13,500teu vessels at the same time and does not require the use of locks. In contrast, the Seaforth terminal, which will be known as Liverpool 1, does require the use of locks and is limited to Panamax vessels.

"The wider supply chain implications are significant and will increase the demand for port-centric logistics and other related services. It is anticipated that the new terminal will create some 6,000 jobs, cost £300M and will establish the Atlantic Gateway as a major destination for manufacturers and retailers," the Atlantic Gateway business plan says.

Port Salford, at which two 550teu ships will be able to berth at one time, will be the uppermost facility in the canal. At a cost of £140M, it will represent the second-largest individual port facility investment. "The port will also be a major logistics hub in its own right without the growth of the Port of Liverpool due to its tri-modal networks – road, rail and inland port – specialist warehousing facilities and loading cranes," the business plan reads. PH

More info: www.atlanticgateway.co.uk

Liverpool 2 will be able to accommodate two post-Panamax vessels at one time



LNG pedal to the metal



Photo: John Pagni

Viking Grace's LNG tanks can be seen on the poop deck

As shipowners race to comply with new emission control areas (ECAs) in Europe and North America, several new liquefied natural gas projects have been fired up recently. These developments fit in well with the work being carried out by IAPH's climate initiative scheme on LNG as a fuel.

The European Commission has given the go-ahead to a joint venture of Germany's Marquard & Bahls and Linde groups to supply LNG bunkering for ships in the north European ECAs. A marine fuel sulphur limit of 0.1% is due to come into force in the ECAs in 2015, and using LNG as fuel is one

way owners will be able to comply with the new regulations.

The planned 50-50 joint venture will start work later this year. Marquard & Bahls, which is taking part in the venture through a subsidiary, marine fuels provider Bomin, said the new company would set up operations in key ports within the ECAs, which cover the Baltic, the North Sea and the English Channel.

The partners predicted that 70 vessels would be using LNG as fuel in northern Europe by 2015.

A second initiative offers cruise ships the means to derive their power from LNG auxiliary engines

during their stay in European ports. In close co-operation with AIDA Cruises, a consortium of German companies has developed an LNG hybrid barge to generate the energy required.

Until now, cruise ships have generated the energy to maintain their operations in port by onboard diesel engines that produce a high level of harmful emissions. The new concept will instead generate energy by means of five generators coupled to combined heat and power engines mounted on a barge. The barge is then moored next to the cruise ship so that

power can be fed into the larger vessel's supply grid as needed. The LNG is delivered in modular form since this is less expensive than bunkering.

The prototype barge will be used at Hamburg's cruise terminal. The *AIDA Sol* is expected to be the first cruise ship in the world to be supplied with LNG-derived electricity when the barge becomes available towards the end of 2013.

During the cruise off-season, German energy provider E.ON Hanse Wärme is planning to feed the energy produced on the barge into the municipal grid, supplying electricity and heat to 11,000 households in Hamburg.

The world's largest passenger ship powered by LNG, *Viking Grace*, was launched in August. The ro-pax ferry, which will carry 2,800 passengers and 500 cars, is being outfitted at STX Europe's Turku Shipyard in Finland.

Viking Grace will be operated by Finland-based Viking Line, on the Turku-Åland Islands-Stockholm route from January 2013.

LNG needs to compete on price, reports Lloyd's Register

A 12-month study by Lloyd's Register reveals that LNG will be accepted as a marine fuel on a global scale only if the price is right. "The obstacles to the adoption of LNG as a marine fuel are practical factors, but they are not technical. They are commercial," said Hector Sewell, LR's head of marine business development. "Establishing safe, reliable global LNG bunkering capability is feasible. But it will require considerable investment and risk management, and it will have to cover significant operational costs to challenge existing fuel-oil delivery systems."

To conduct the study, Latifat Ajala, senior market analyst at LR, built a dynamic demand

model that was tested and validated by key stakeholders, including shipowners, ports and engine manufacturers. "We use a model based on LNG supply, trade routes, ship-type fuel consumption, port locations and bunkering demand, as well as shipowner and port surveys. We then applied three demand- and price-driven scenarios," said Ajala.

"What we found was that the likelihood of global LNG bunkering facilities being established will depend on high demand for LNG fuel on deepsea trades, which will be driven by the price of LNG relative to current and future alternatives."

Notable numbers

70

vessels could be using LNG as fuel in northern Europe by 2015

6

months until IAPH's World Ports Conference in Los Angeles

Get ready garbage upheaval

Ports and shipowners are under pressure to meet new regulations covering the disposal of sea-generated garbage that are scheduled to come into effect in January. The revised Annex V of Marpol 73/78, formally accepted by the IMO on 1 July 2012, represents a dramatic new approach to garbage disposal, which for the first time adopts the precautionary principle to any potentially hazardous material.

Previously, garbage of almost any type could be discharged into the ocean unless there was a specific provision that banned or limited a discharge. The revision effectively reverses the burden of proof by requiring those responsible for any discharge to prove that it will not cause harm to the marine environment.

New terms have been added to the definitions regulation of the revised Annex V, including cargo residues, domestic wastes, food wastes, incinerator wastes and operational wastes.

In combination with the precautionary principle approach, the new definitions significantly affect the types of material that can be disposed of legally at sea and under what conditions.

The revision is likely to have a big impact, particularly in the case of dunnage (materials used to protect cargo). Marpol used to classify dunnage as general garbage that will float, which had to be disposed of at least 25nm from land.

Under the revised version of Annex V, disposal of dunnage at sea will be prohibited, forcing the master either to incinerate it or to wait until the ship reaches a port where the waste can be taken



Photo: Danny Cornelissen

Some ports may struggle to handle ships' garbage under new Marpol rules

ashore for land-based processing.

Many break-bulk ships, among other vessel types, utilise large quantities of dunnage in the carriage of commercial cargoes. When it is no longer serviceable most of this material is disposed of at sea, because disposal ashore can be expensive and few ships have the capability to incinerate large quantities of dunnage.

The reclassification of cargo residues as garbage represents a major challenge both for ships and ports, said John Stawpert, senior adviser at the International Chamber of Shipping.

Stawpert told *P&H*: "The new instrument will prohibit the discharge of cargo residues and cargo residues entrained in washwater under certain circumstances, particularly where they are harmful to the marine environment, but the reception facilities for their disposal just don't exist yet." He warned: "You could have the scenario of ships being required to comply with the

new regulations, but having no practical mechanism for doing so."

The revision to Annex V is likely to result in far greater quantities of garbage being offloaded by ships, so many ports and terminals have already started gearing up to meet the expected demand at shoreside reception centres. Some will be better prepared than others, observed Ron van Gelder, harbormaster at the Port of Rotterdam: "Smaller, less well-equipped ports may struggle, but this won't have a severe impact at Rotterdam, as we are fully equipped for all types of solid and liquid waste. The problem will be enforcing the regulation on ships. It may be the case that ships that have been dumping at sea will simply continue to do so regardless of the new restrictions.

"As of 1 January, our inspectors will carry out more frequent checks in port and if any vessels show signs that something might be amiss they will take a closer look," van Gelder said.

Reviewing ports and terminals

The recently published book *Ports and terminals*, written by Han Ligteringen and Hugo Velsink, draws on the combined knowledge that the authors gained as successive chairs of Ports and Waterways in the Faculty of Civil Engineering and Geosciences at Delft University of Technology in the Netherlands. The book covers their experience of developments in practical engineering and results of academic research that Ligteringen and Velsink accumulated during their combined 33-year tenure.

The work draws on contributions from colleagues and researchers and also valuable information from the PIANC working groups and IAPH committees.

Ports and terminals considers the planning and design of maritime infrastructure from an engineering perspective and addresses the economic, environmental and organisational aspects that are essential when developing a modern port. The book also looks at recent trends in container shipping that put ever-greater demands on the flexibility of port infrastructure.

The authors do not restrict their attention to the planning and design of very large ports and sophisticated terminals, for they also discuss smaller ports and ports in developing countries. The overall intention is to provide guidance to planners and designers of any type of port facility, wherever it may be in the world.

Ports and terminals, ISBN 978-90-6562-288-4 (hbk), 978-90-6562-304-1 (pbk), 978-90-6562-303-4 (eBook), is published by VSSD at €27.50 (hbk). The book can be ordered from www.vssd.nl/hlf/f031.htm.

\$3.02Bn

cost of the second phase of development at the Kaohsiung Intercontinental Container Terminal, Taiwan

10

years that TEPSA Bilbao has not had a serious accident

Seafarers' 'bill of rights' ratified

In August, Russia and the Philippines became the 29th and 30th countries to ratify the Maritime Labour Convention (MLC) 2006, with the result that the convention will enter into force on 13 August 2013. Another 26 states – including China, Greece, India, Japan and the UK – are expected to sign up before entry into force.

Dubbed 'the Seafarers' Bill of Rights', the convention is really a consolidation of much existing regulation, as it brings together 67 International Labour Organization legal instruments covering seafarers' employment contracts and statutory certification, accommodation, hours of rest, health protection and medical care. It is intended to give to seafarers the same sorts of workplace protection that shore-based workers have enjoyed for decades. Together with SOLAS, STCW and Marpol, the convention is counted as one of the four 'pillars' of international maritime regulation.

A ship's safety management system is at the core of MLC compliance. When compliance



Photo: Capt Peter Newton

Seafarers will have the right to expect decent working conditions under MLC

has been confirmed, the flag state will issue the ship with a maritime labour certificate and a declaration of maritime labour compliance, both of which have to be renewed every five years. Compliance will be enforced primarily by port state control inspections, focusing particularly on the validity of the certificates, the condition of living quarters and seafarers' complaints.

As in other areas of PSC inspection, discovery of non-compliances is likely to result in more detailed, and lengthy,

inspection and possible detention. Workers found to be under the age of 18, invalid or missing medical certificates, maximum hours of work being exceeded, inadequate food and water supplies, delays in provision of medical care while in port and poor hygiene conditions are all grounds for detention.

Ships registered to a state that has not signed the convention may be particularly prone to PSC inspection, warned Natalie Shaw, the International Shipping

Federation's director of employment. Speaking at the International Chamber of Shipping conference in London in September, Shaw said: "Any shipowner who has a ship registered to a non-ratifying state is putting their ship at risk."

She told shipowners: "If you really believe that your flag state is not likely to be ratifying in the near future and that could impact upon your ships, you might want to consider moving flag."

The convention contains guidelines recommending that a "financial security system" be put in place to enable seafarers to be repatriated should the company run into financial or other difficulties. This is in response to numerous cases of seafarers being abandoned in ports far from home, often for months at a time without wages or supplies, leaving them dependent on charity for their survival.

An amendment on seafarer abandonment will be discussed early in 2014. In the meantime, Shaw said, owners and operators should have insurance in place to ensure that seafarers can be repatriated without delay. It would reflect badly on the industry if it was not seen to be acting responsibly, she added.

DFDS invests in onshore power

Danish operator DFDS Seaways will introduce onshore power (OSP) facilities in the ports of Immingham, Gothenburg and Ghent by 2014. Six of the operator's largest ro-ro vessels using these ports will be retrofitted to receive power from the shore-based facilities. OSP is another topic being closely monitored by WPCI. The six vessels are *Primula Seaways*, *Petunia Seaways*, *Magnolia Seaways*, *Freesia Seaways*, *Ficaria Seaways* and *Begonia Seaways*. Use of OSP will reduce emissions and noise from the ships in the terminal area.

Total investment in the OSP project is €7M (\$9M). The

European Commission has supported it with €1M as part of its Trans-European Transport Network funding. Support has come too from Volvo Group Belgium and the ports of Ghent and Gothenburg. The capacity of the berths equipped with onshore power supply will be available to other operators so as to maximise the environmental benefits.

The Hong Kong government is offering incentives to vessels that switch to cleaner fuels while at berth. From 26 September, they are being charged 50% lower port fees.

The scheme, aimed at encouraging vessels to reduce

harmful emissions while docked, will run for three years.

Vessel owners and operators that intend to take part in the scheme need to register with the Environmental Protection Department. "The government has been implementing a package of 22 measures, targeting various major polluting sources, with a view to improving the air quality in Hong Kong," said Hong Kong's secretary for the environment, Wong Kam-sing. "Reducing marine emissions is one of our priorities and the launch of the incentive scheme is a step forward to achieving this goal."

Notable numbers

1.2M

approximate number of seafarers worldwide

40

large carriers will be able to be handled by Açu Superport once completed

IMO presses for ballast water ratification

The shipping industry should encourage flag states to ratify the Ballast Water Management Convention, IMO secretary general Koji Sekimizu told the International Chamber of Shipping's (ICS's) London conference on 12 September. Shipowners should not delay fitting their vessels, especially newbuilds, with a ballast water management system, Sekimizu urged. He noted that 28 systems have obtained type approval, so there is already plenty of choice in the market.

The timeline is already in place, he said. "[Newbuilds] will need a ballast water treatment system sooner or later. It is surely better to start now, as retrofitting will be more expensive," Sekimizu added.

Prompt ratification would also overcome the risk of national authorities imposing their own national rules. "This is creating

concern and uncertainty around the application of ballast water management requirements," the secretary general suggested.

The ICS advised IMO in July that it may be better to stagger the introduction of the rules to avoid the risk of chaos when the 2004 Convention is finally ratified.

The convention – which had been intended to take effect several years ago – has been delayed until it is able to gain signatures representing 35% of the world's fleet, ICS noted in its written submission to the IMO. Thirty-six countries have ratified the convention – six more than the minimum needed for entry into force – but they represent only 28% of the world's merchant shipping tonnage, 7% below the total needed.

The IMO has allowed one moratorium pushing the date



Photo: Diemar Hasenpfecht

The IMO SG wants to see the ballast water management rules ratified

back by a year, but it has not agreed to any further changes to the rolling programme required under the convention. Most existing ships will therefore be

obliged to fit the systems in a very short timespan, whereas it was originally intended that this would have been a staggered regime, the ICS added.

Liquefaction on agenda at IMO

Problems related to liquefaction of cargoes formed a major part of discussion at the IMO Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC) at its 17th session from 17 to 21 September. Liquefaction of cargoes, particularly nickel ore and iron-ore fines (granular iron), are believed to have contributed to some serious casualties.

The subcommittee agreed to draft amendment 02-13 to the International Maritime Solid Bulk Cargoes (IMSBC) Code. This includes a nickel ore schedule (a description of the dangers of the cargo and how to make sure it is carried safely) and draft guidelines. The draft texts will be considered by Editorial and Technical (E&T) Group 18 for finalisation and submission to the Maritime Safety Committee (MSC) for adoption at its 92nd session in June 2013.

The subcommittee discussed a report

submitted by a correspondence group that provided a new individual schedule for iron ore fines. The subcommittee decided to wait for the outcome of important research being carried out in Australia and Brazil before the schedule is finalised.

The draft schedules will therefore be completed by the correspondence group for discussion at the next DSC session in September next year in the hope that these schedules will be incorporated into the next set of amendments to the IMSBC Code (03-15).

The subcommittee will also update DSC.1/Circ.66 on the carriage of iron ore fines, so that it will continue to be applied until the schedule is agreed. DSC.1/Circ.66 explains the dangers of liquefaction of iron ore fines. It also called for member states and other organisations to make available more information on incidents known to have resulted from liquefaction.

The subcommittee also agreed:

- To finalise the draft SOLAS amendments relating to enclosed-space entry and rescue drills (Regulation III/19). These amendments will be submitted to MSC 91 in November this year.
- To draft amendments to the International Convention for Safe Containers (CSC), 1972, for submission to MSC 91 for approval.
- To draft *Guidelines for development of an approved continuous examination programme (ACEP)*. These guidelines relate to the development and approval of examination programmes in accordance with CSC 1972, as amended.
- That further work was required to develop draft amendments relating to SOLAS chapter VI 'Mandatory verification of gross weight of containers'. A correspondence group was established and will report at the next session.

\$48Bn

the sum needed for infrastructure investment for the UK's Atlantic Gateway project

\$9M

amount to be invested in DFDS Seaways' OSP project



Working on today, focusing on tomorrow

Port of Los Angeles steps up its preparations as it looks forward to welcoming its IAPH colleagues in May

Global economic realities, environmental challenges and sustainable practices, and maritime safety are among the headline topics that will bring delegates from 85 countries to Los Angeles for the 28th International Association of Ports and Harbors World Ports Conference in May.

As many as 1,000 participants – members and guests – are expected to attend the biennial meeting from 6 to 10 May in downtown Los Angeles.

The 2013 conference will be held under the banner theme 'Working on Today. Focusing on Tomorrow'.

"We are thrilled to welcome IAPH members and guests to our city, where this organisation was founded nearly 60 years ago," said Dr Geraldine Knatz, executive director of the Port of Los Angeles and president of this association. "As we continue to carry out our mission of developing and sharing best practices for ports around the globe, participants can expect Los Angeles to more than live up to its reputation as a world-class trade and entertainment centre."

Building upon the work done in 2011 at the 27th IAPH World Ports Conference in Busan, Korea, the 28th conference will focus on the

major issues surrounding seaborne trade such as the changing global economic landscape, logistics and infrastructure development, and financing port modernisation and innovation in the 21st century.

Delegates will attend working sessions on environmental policies and practices, with a particular focus on sustainable programmes developed and promoted by IAPH's World Ports Climate Initiative (WPCI). Through WPCI, IAPH is working to reduce greenhouse gas emissions and improve air quality while strengthening ports as vital economic engines (see page 40). Projects include the Carbon Calculator – software that ports can use to estimate emissions and design pollution reduction strategies – and the Environmental Ship Index programme, a web-based tool for tracking clean vessel calls and rewarding carriers that route environment-friendly ships to participating ports.

New breakout sessions will focus on the cruise business and women in the maritime industry. The latter is born out of the IAPH's Women's Forum, established in May at the organisation's Mid-term Ports Conference and Board Meeting in Jerusalem. The session will focus on how the entire maritime industry



IAPH president and Port of LA's executive director, Geraldine Knatz: "We are thrilled to welcome IAPH members to our city"

Photo: Port of Los Angeles

benefits from the advancement and empowerment of women.

Keynote speakers include Capt Richard Phillips of the *Maersk Alabama*, who was held hostage in a 5.5m lifeboat by Somali pirates in 2009. Phillips offered himself as a hostage in exchange for the safety of his crew and his ship after pirates attacked the 17,000dwt cargo ship. The five-day standoff ended after US naval forces intervened.

The safety of passengers, seafarers and cargo has been a longstanding concern of IAPH. In 2011, the organisation adopted a formal resolution urging countries and the international community to take a more active role in eradicating piracy.

The 2013 conference will take place at the JW Marriott at LA LIVE, the vibrant new cultural centre in the heart of Los Angeles. Evening programmes include a pre-conference reception at the Grammy Museum, a welcome dinner at the Griffith Park Observatory, an evening of fine dining and entertainment hosted by the



IAPH returns to LA – the city where it was founded – in May next year

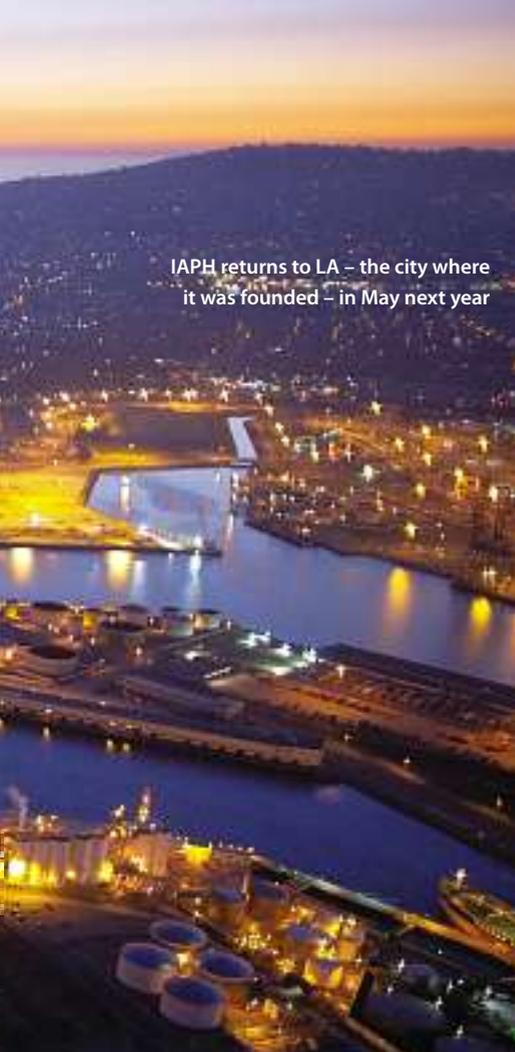


Photo: Port of Los Angeles

Sometimes history sneaks up on us

Geraldine Knatz, executive director, Port of Los Angeles stumbled across some old IAPH archives

It happened to me this summer in the middle of the California desert, more than 200km away from the Port of Los Angeles – with no ocean in sight.

At the holiday home of a close friend, I came across a coffee table scrapbook of the career highlights of his grandfather, Burton Chace, whose lifetime of public service included nearly 20 years as a Los Angeles county supervisor.

To my surprise, I discovered a black-and-white photograph from 1967 of the 5th IAPH World Ports Conference in Tokyo, which Mr Chace attended. Suddenly, I was transported back in time to a crowded conference table where more than two dozen men wearing dark suits and sombre expressions were deliberating the maritime issues of the day.

Attendance at IAPH conferences has grown since then, and the digital era now captures the full diversity of our representation and style. Yet the same seriousness of purpose still drives our meetings, as it did 45 years ago and since the day IAPH was founded in 1955.

The memorabilia included a letter dated 28 June 1967 from Toshio Kanchi, IAPH's former senior under-secretary. The letter speaks warmly of both professional and personal matters, including Mr Kanchi's journalism career as an arts writer for the Japanese daily *Asahi Shimbun* and his personal commitment to promoting international understanding through cultural exchange programmes. His

words embody the spirit of co-operation and friendship that unites us today as we strive for strong ports built on sustainable practices, just as it did when containerisation was transforming our industry.

How serendipitous to stumble upon these treasures as the Port of Los Angeles prepares to welcome as many as 1,000 guests to next year's 28th World Ports Conference under the banner theme, 'Working on Today. Focusing on Tomorrow'. The photograph and the letter are reminders of the value of ports and how the work of IAPH continues to be a force for global prosperity and peace.

Sometimes history sneaks up on us in the most delightful way. And when it does, it invigorates us, renews our sense of purpose and propels us forward.

Hamburg Port Authority, host of the 29th IAPH World Ports Conference in 2015, and IAPH's traditional gala dinner on the last night.

Programmes for accompanying guests include tours of downtown Los Angeles and Hollywood. The itinerary also features a day-long trip to the J Paul Getty Museum and a visit to Exposition Park, home to science and natural history museums, and the Los Angeles Coliseum. All participants are invited to tour the Port of Los Angeles on the final day.

The conference marks the first time the organisation will meet under its new vision and mission statements. Updated in May, the guiding principles reinforce IAPH's focus on "strong member relationships, collaboration and information-sharing" to address common concerns, advocate for international solutions and promote sustainable practices that benefit the industry and the global community.

IAPH was founded in 1955 by about 100 delegates representing 38 ports and maritime organisations from 14 countries. It has since grown into a global alliance representing 190 ports and 140 maritime organisations from about 85 countries, and its member ports handle approximately 80% of world container traffic and more than 60% of all international maritime trade. It also has consultative NGO status from the United Nations and is active in developing international trade and maritime policy.

More info: www.iaph2013.org



Tokyo, 1967... could this be the ExCo meeting at the conference?

Photo: IAPH



Delegates queue to register for the 5th IAPH World Ports Conference in Tokyo 1967

Photo: IAPH

At the secretariat

IMO secretary general Koji Sekimizu (below) visited the IAPH office in Tokyo on 20 August. He was met by IAPH secretary general Susumu Naruse and his staff. Sekimizu's visit to IAPH HQ was part of a business trip to countries in Asia and Oceania.



Photo: IAPH

Tai-Hsin Lee (below, left with SG Naruse), president of Taiwan International Ports Corporation (TIPC), visited the IAPH office on 13 September, where he met SG Naruse and exchanged views on IAPH matters. TIPC joined the IAPH in July 2012 and Lee was elected as a new member of the IAPH Executive Committee, representing the Asia/Oceania region, on 22 August. *More info: www.twport.com.tw*



Photo: IAPH

Competition deadline draws near, but there is still time...

The deadline for entries for the IAPH awards is 30 November. So if you have a good idea that could benefit your port that you want to share with the world ports community don't delay in sending your entry (in Microsoft Word form) by email to the IAPH Secretariat at info@iaphworldports.org. All entries should be submitted in English.

Categories include the two new awards – the Port Communications Award and the Port Environment Award – plus the familiar categories of recent years, listed below.

The five competitions in total give members the chance to promote their ports at next year's Los Angeles IAPH World Ports Conference.

IAPH rewards innovation

Do you have a good idea to improve your port or the port industry? IAPH members are invited to submit entries for the 2013 Essay Contest, organised by the Communication and Community Relations Committee. It is your chance to showcase your ideas such as strategies to increase port efficiency and productivity and improving the port-community relationship. Two awards are available – the Akiyama Award and the Los Angeles Open Award.

Prizes for the overall winners include \$1,000 and an invitation to the awards ceremony at the



Photo: Shutterstock

28th IAPH World Ports Conference in Los Angeles in May 2013. The Akiyama Award winner will receive a round-trip air ticket, accommodation in Los Angeles and free entry to the conference, while the winner of the Los Angeles Open Award will have free entry to the conference.

A merit prize of \$500 for either category may be given if the judging panel believes there is a second outstanding entry that just falls short of the top prize.

Promoting port communications, port environment and IT excellence

Don't miss the chance to showcase your port's excellence in port communications, port

environment and IT capabilities.

The Port Communications Award is given to IAPH member ports that are able

to demonstrate a case study or project that has been both planned and implemented successfully over the past two years. It may be your innovative marketing concept or community relations strategy, for example.

The Port Environment Award is presented to IAPH member ports that can demonstrate an excellent case study in environmental management, environmental protection or sustainability that has been successfully planned and implemented over the past two years.

The IT Award is given to IAPH member ports that recognise the benefits of innovative IT in relation to the port itself, its customers and the logistics chain.

Gold, silver and bronze plaques will be presented to the top three award winners.

Schedule for submissions:

- 30 November 2012 – deadline for receipt of entries
- December 2012–January 2013 – initial screening and shortlisting
- February 2013 – final decision and announcement
- Awards presentation – plenary session at the 28th IAPH World Ports Conference, 6–10 May 2013, in Los Angeles, USA.

More info: www.iaphworldports.org/awards2013.aspx



We value your opinions

Do you have strong views about any of the articles in *Ports & Harbors*? Are there other industry issues that you would like to tell us about?

We would be pleased to hear from you so email your views to ph@iaphworldports.org



New recruits to ExCo

Three members were elected to the IAPH Executive Committee (ExCo) on 22 August as a result of the elections held by each region's board members. The Executive Committee is made up of 18 elected members and is the chief executive body of the association, responsible for directing the association and supervising the secretary general.

To see a complete list of all your ExCo members visit: www.iaphworldports.org.

Javier Gesé Aperte

deputy director of presidency,
Puertos del Estado, Spain

Representing members from the
Africa/Europe region



Photo: Puertos del Estado

David Padman,

general manager, Port Klang
Authority, Malaysia

Representing members from the
Asia/Oceania region



Photo: Port Klang Authority

Tai-Hsin Lee

president, Taiwan
International Ports
Corporation

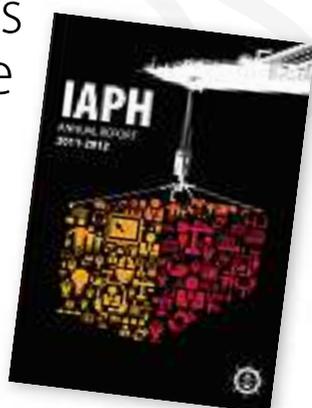
Representing members from
the Asia/Oceania region



Photo: TIPC

Annual report is available online

IAPH's *Annual Report 2011–2012* has been published in digital format and is available to all members on the IAPH website. It highlights the major outcomes and activities of the association over the past year, such as the Mid-term Ports Conference, technical committees and WPCI. *More info:* www.iaphworldports.org



Dates for your diary

A selection of forthcoming maritime courses and conferences



November

- 19–30:** Port Management and Operations Course – Singapore
www.psa-institute.com
- 19–21:** ICOPMAS 2012 – Tehran, Iran
<http://icopmas.pmo.ir/en/pages/>
- 20–21:** 8th Trans Middle East – Bahrain
www.transportevents.com
- 26–28:** African Ports & Maritime Conference – Cape Town, South Africa
www.pmaesa.org/apmc2012/home.php

December

- 4–5:** Dry Bulk Terminals – Singapore
www.drybulkterminalsconference.com
- 4–5:** Breakbulk South America Congress – Sao Paulo, Brazil
www.joc.com
- 4–6:** TOC Container Supply Chain: Americas 2012 – Panama (20% discount for IAPH members)
www.tocevents-americas.com
- 10–11:** Course on Environmental Aspects of Dredging – Abu Dhabi, UAE
www.iadc-dredging.com
- 10–12:** 9th PAPC Conference (including a one-day IAPH Africa/Europe Regional Meeting) – Brazzaville, Congo
www.iaphworldports.org
- 12–14:** International Seaports Festival – Vung Tau, Vietnam
<http://seaportfestival.net/en/home.html>

January

- 24–25:** Shifting International Trade Routes – Tampa, USA
www.aapa-ports.org
- 30–31:** 7th Philippine Ports & Shipping – Manila, Philippines
www.transportevents.com

March

- 18–20:** IAPH Asia/Oceania Regional Meeting – Abu Dhabi, UAE
www.iaphworldports.org

May

- 6–10:** 28th IAPH World Ports Conference – Los Angeles, USA
www.iaph2013.org



Photo: TIPC

Proud to be IAPH

Taiwan's TIPC president, **Tai-Hsin Lee**, has plans to refocus the island nation's ports and hopes members will visit in the future

The ports of Taiwan have been members of IAPH since its initiation, have supported it for 57 consecutive years and will keep on doing so. In addition to the country's four major ports, TIPC (Taiwan International Ports Corporation) became the fifth Taiwanese member of IAPH right after its establishment on 1 March of this year (see pages 36–37).

Taiwan is a small island of 36,188km² with 23M people. Ports are at the core of the nation's economy, culture and even its people's nature. The island people are open-minded and welcoming. Located in the semi-tropical area of east Asia, the weather of Taiwan is warm, as is the hospitality of its people.

Taiwan's four major ports are each located on different sides of the country. Although geographically not far apart, each port and region is unique. Taichung is in the middle of the west coast and is famous for its delicate pineapple cake – a popular local snack that has become globally renowned in recent years. This port is only 36 years old, has a large hinterland and is still developing. An industrial cluster has developed in this vicinity so the port is expected to develop into a value-adding logistics centre.

Keelung is a historical port city at the northern tip of the country, famous for its

historical sites, shrines, unforgettable fresh seafood, local cuisine and beautiful sea view. It is to become a home port for cruise lines.

Hualien is a place of natural wonder and little modernity, located on the eastern rim among scenic mountains and coastlines. It is an excellent place to escape from the hustle and bustle of city crowds, so there are plans to develop a recreational tourism industry in the area.

Kaohsiung, the biggest harbor city, where TIPC has its headquarters, is famous for its beautiful weather and friendly residents, whose hospitality is warmer than its hot summers. As the second-largest metropolis of Taiwan, Kaohsiung is a mixture of local and international, modern and historical. The port is a transshipment hub serving the Asian market.

Ports of Taiwan likes to welcome all visitors, but especially its friends from IAPH. If you visit us it will be an unforgettable experience as you try our country's gourmet delicacies, various delicious tropical fruits, unique local culture and the warmest hospitality you can find. In the future TIPC hopes to host an IAPH meeting or conference so you can witness the attraction of Taiwan's ports, food, views and lovely people. **RH**

“ The island people are open-minded and welcoming ”

李泰興



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