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PORTS & HARBORS

Official Journal of the International Association of Ports and Harbors

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The Global Ports' Forum for Industry Collaboration and Excellence

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Construction of the new locks at the Pacific side of the Panama Canal – an expansion, that will impact US ports in particular

Photo: ACP

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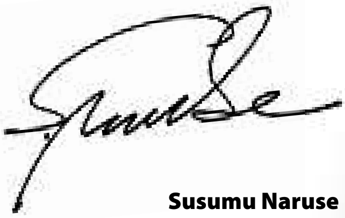
The road ahead

Secretary General Naruse looks at container forecasts and climate change initiatives



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

The International Monetary Fund revised its economic forecast downwards in July, positing that global economic growth would be 3.5% in 2012 and 3.9% in 2013, mainly as a result of financial turmoil in the Eurozone and slower growth in emerging markets. It added that expansion could still occur if policy action is taken to allow financial conditions in the Eurozone to ease.

More relevant to IAPH was Drewry's forecast that this year's global container growth rate would be 4.3% – much lower than in 2011. Most ports still had strong container figures during the first half of this year, but some ports may see reduced cargo throughput.

At the 'Green Port Workshop' at the East Asian Seas Congress in July, I found that IAPH's efforts to encourage ports to combat climate change are bearing fruit. Many delegates from governments and port authorities in Asia – and the ASEAN Port Association itself – showed great interest in IAPH's initiatives.

Many ports in Europe and the USA have taken action to combat climate change, but those in Asia have not been so forward. I hope the objectives in IAPH's World Ports Climate Initiative (http://iaphtoolbox.wpci.nl) will be taken up in Asia and other regions too, so that all ports contribute to the battle against global warming.

> I urge all IAPH members to participate in events

IAPH has also been active on the issue of misdeclared container weights. It submitted a proposal to IMO's Dangerous Goods, Solid Cargoes and Containers (DSC) Subcommittee and to governments and international organisations, recommending that the SOLAS regulations include this phrase: "A freight container containing cargo shall not be loaded aboard a ship unless the master and the terminal representative have the verified gross weight of the container obtained by a weighing of the container."

At DSC's September meeting we need to ensure that ports are not faced with an unreasonable burden. Weighing containers at terminal gates should not be carried out at ports' expense – declarations of correct weights are the shippers' responsibility.

The agenda includes regional meetings in the Americas and Africa/Europe, plus work to ensure a full programme for the LA conference is completed by the year's end. A regional election will be held to select the new third vice-president from the Asia/Oceania region. Important outside meetings will take place too.

Finally, I urge all IAPH members to support these events – we cannot complete them without members' participation. PH

Port updates

LAEM CHABANG EXPANDS

Thailand's Laem Chabang port has begun a $3.8Bn third phase of logistics development to aid cargo transport and to cope with a planned rise in capacity to 18.8M teu over the next 20 years. Transport minister Jarupong Ruangsuwan said it includes port upgrades, construction of a major road and a double-track railway from Laem Chabang to Chachoengsao province.

WALVIS HIGH SECURITY

Namibian Ports Authority (Namport) has beefed up security at Walvis Bay with a state-of-the-art police station housing 50 police officers and also sniffer dogs. "Cargo and vessel owners choose their business partners after considering many aspects, including a safe and secure environment," Namport CEO and Exco member Bisey Uirab commented.

AN AUTOMATION FIRST

The Finnish port of Raahe said it has commissioned the first automated box terminal in the Gulf of Bothnia. "With an access channel and quay dredged to 10m, the 6,000m² terminal has automated doors for flexible cargo handling, Actiw LoadPlate container equipment and a MultiContainer system with four container spaces," said a port spokesman.

CRANES TO NGQURA

Liebherr Container Cranes has delivered and commissioned two super-post-Panamax cranes at the South African port of Ngqura's box terminal, part of a major contract from Transnet National Ports Authority. "The cranes have an outreach of 52m and a lift height of 37m under the spreader," said a Liebherr spokesman.

SINGAPORE AUTOMATES

PSA Terminals will use automated guided vehicles able to operate round the clock at its future box terminals, said Southeast Asia regional CEO Tan Puay Hin. "With considerations on land optimisation, manpower productivity and the environment, investments in automation will enable us to overcome these challenges and enhance the skill sets of port employees," said Tan.

Dredgers to the rescue

General Company for Ports of Iraq (GCPI) celebrated a major milestone in the rehabilitation of the ports of Umm Qasr and Khor Al Zubair in late July when two much-needed dredgers were launched in the Netherlands. They are the first modern dredgers in the GCPI fleet.

Built at IHC Merwede's yard in Krimpen aan den IJssel for around $100M, the 500m³ grab hopper dredger *Dohuk* and 3,500m³ trailing suction hopper dredger *Karbala* were named by GCPI's project director, Captain Hussain Mohammed Abdullah. The pair are a vital part of a $300M phase one project to improve port and hinterland infrastructure that initially will focus on Umm Qasr.

Made possible through an official development aassistance loan by the Japan International Co-operation Agency (JICA), the project will focus on repairing war damage. As Capt Hussain told *P&H* after the launch, the two ports' total annual cargo volumes are only about 30% of their pre-war 9M tonnes and, despite some recent recovery attributable to freight increases brought about by the country's reconstruction demands, an estimated 60% of imports are routed through ports in neighbouring countries.

"Both Umm Qasr and Khor Al Zubair need new infrastructure,

Photo: Tony Slinn

Karbala **and** ***Dohuk*** **are now being fitted out for use in Iraq**

dredging and new cargo handling equipment – and they have shipwrecks that need removing as well as navigation aids that need renewing," Capt Hussain explained. He added that JICA is being asked to consider loaning another $500M to complete phase two, concentrating on Khor Al Zubair.

Capt Hussain was also enthusiastic about the prospect of building the Al Faw mega-port, a project estimated to cost about $6Bn that Iraq announced in 2005. The foundation stone was laid in April 2010 – a year before Kuwait announced plans to build a rival port of Mubarak. That has not deterred about 85 companies from showing interest this year in the first construction phase, which includes building a $340M breakwater. "What we need to do now is find investors to help us build the port," the captain said.

When handed over to GCPI in January next year, the two dredgers will initially carry out maintenance work, although *Karbala* can also be used for land reclamation work.

"We're aiming for a depth of 12.5m, which is enough for our needs at present," Hussain commented, "but in the future we'll be aiming at 18m."

Photo: Tony Slinn

"What we need to do now is find investors"

Capt Hussain Mohammed Abdullah

Project director, GCPI

Cash boost for Liverpool 2

Nearly half the finance needed for the UK's £300M ($471M) Liverpool 2 deepwater container terminal project has been put up by the European Investment Bank.

"The announcement of €180M [$222M] from the EIB represents a significant first step in the financing programme," said Gary Hodgson, MD of Liverpool's owner, Peel Ports Mersey. "We're working closely with other parties and will make further announcements in due course," he told *P&H*.

The EIB backing is conditional on the bank continuing to review certain aspects of the project, but is nevertheless a major boost for development of the box terminal on the River Mersey. The 22ha terminal will be built adjacent to the Port of Liverpool's Royal Seaforth Dock and be able to handle 13,500teu container ships compared with the port's current maximum of 3,500teu vessels.

Liverpool 2 is currently going through the tendering process, construction is set to start next year and completion is expected in 2015. To build it, the winning contractor will have to construct a quay wall 850m long by 30m high, enclosing 2.5M m³ of reclaimed land. The infill material needed will probably come from the access channel and berth pocket dredging campaign that forms a major part of the project, the port told *P&H*.

The terminal is part of a 20-year plan to transform the Port of Liverpool and its hinterland in conjunction with redevelopment of the Peel Ports-owned Manchester Ship Canal – the November issue of *Ports & Harbors* will look more closely at the project.

Photo: APMT

Dredging is good news for APMT's Gateway Terminal in JNPT

Sigh of relief at JNPT

After four years of delays, India's largest container port, Jawaharlal Nehru Port Trust (JNPT), has finally awarded a $214M dredging contract to Dutch contractor Royal Boskalis Westminster.

The delay in awarding the contract was exacerbated by disagreements about cost sharing. The project includes deepening, widening and lengthening the 29km access channel that JNPT shares with Mumbai Port Trust (MbPT). JNPT argued that because only 7km of the work would be in the communal access channel, with the remainder within MbPT's harbor area, the latter stood to benefit more and should therefore pay 50% of the costs.

Local media reports suggest that the government was forced to intervene to get JNPT and Mumbai Port Trust to agree a cost-sharing deal, under which the latter will pay 12.5% and also nearly halve port charges to JNPT – to 18%.

The project will see the channel lengthened to 33.5km (to meet a natural depth at sea of 14m), widened to 370m and deepened from 11.5m to 14m. In addition, JNPT's berths and turning basins will also be dredged, enabling the port to handle vessels of 6,000–8,000teu and more than double its annual handling capacity from 4.3M teu to about 10M teu.

Boskalis will deploy the 35,500m^3 mega trailing suction hopper dredger (TSHD) *Queen of the Netherlands* along with a combination of jumbo and mid-sized TSHDs, a jumbo cutter and a large backhoe to remove around 67M m^3 of sand, silt, clay and rock. The project has already started and is scheduled for completion in October 2014.

"The dredging is a long-awaited project and, with phase one expected to be over by 2014, tidal restrictions will be a thing of the past," APM Terminals Mumbai's chief commercial officer, Amit Malik, told *P&H*. "This will result in better utilisation of ship capacity and enhance the growth of the port overall," he concluded.

'Sport in a box' shortlisted

A Safmarine shipping container converted into a colourful, multi-purpose sports centre in the Western Cape town of Piketberg has been chosen as one of 12 finalists in this year's AfriSam/SAIA Award for Sustainable Architecture.

The container-based sports centre – a collaboration of Safmarine, Tsai Design Studio and Star South Fruits – provides a safe after-school environment for more than 100 children taking part in youth development and mentoring programmes run by the Stars in their Eyes Foundation

The award is a joint initiative of South African cement and aggregates producer AfriSam and the South African Institute for Architects.

"The Stars in their Eyes Foundation is an innovative football project which combines the joy of football with the alleviation of social problems," said Star South's marketing director, Johan van Niekerk.

The Piketberg sports centre forms part of Safmarine's acclaimed 'Containers in the Community' programme. In the past 20 years, Safmarine has donated more than 8,000 decommissioned containers to more than 3,000 projects, most of which support education in South Africa.

Photo: Safmarine

Port updates

SOHAR DRY BULK

A consortium of Tata Steel subsidiary TM International and Khimji Ramdas Shipping has signed a contract with Oman's Sohar Industrial Port Company to establish a dry bulk terminal and equip it with high-capacity loaders/unloaders to handle about 10M tonnes annually. "The 18m draught at Sohar will permit shipowners to load large vessels to their full capacity," said Khimji Ramdas CEO M C Jose.

LAMU EXPANSION

The Kenyan government has invited expressions of interest (EoIs)for the first-phase design and construction of three berths at its second Lamu port. These are among the 32 berths to be built under the ambitious $23Bn Lamu Port–South Sudan–Ethiopia Transport Corridor Project, which also includes 1,600km of railways, 1,700km of new highways, three international airports and resort cities. Kenya Ports Authority MD Gichiri Ndua said both local and international firms could submit EoIs.

NEWCASTLE GRAIN

Australian grain-handler Newcastle Agri Terminal has signed a contract with Cargotec for a flexibly designed SBL 1600 TTL Siwertell ship loading system planned for delivery in March 2013, which will load ships up to Panamax size. "Initially, it's been designed to handle grain, but its inherent flexibility will also allow the operator to load flour in the future," explained Cargotec's Bertil Andersson.

RICHARDS BAY PONTOON

The bulk commodity port of Richards Bay, South Africa, is leading the implementation of Transnet National Ports Authority's environmental strategy. In its harbor, the country's largest floating breakwater system is designed to achieve 70–80% wave reduction. An environmental impact assessment for the 2009 construction of Richards Bay's bulk liquid berth "revealed an endangered area had developed on the south side of the harbor. Erosion of beach sand and soil had affected mangrove swamps that provide a unique habitat for many species of birds, mammals and fish."

Port updates

ANTWERP'S NEW HQ
Construction of the port authority's new €49.9M headquarters, designed by Zaha Hadid, will start in mid-September. The authority selected Interbuild for the general contracting, Victor Buyck Steel Construction for the building's structure, and Groven+ for the outer walls. Employees will move in towards the end of 2015.

JURONG IN YANGPU
Singapore's Jurong Port has initiated a joint venture called SDIC Jurong Yangpu Port Co to manage and operate Yangpu Port on Hainan Island, southern China. Considered the best deepwater port in Hainan, Yangpu is also one of the busiest, handling 310,000teu of boxes and 8.7M tonnes of general and bulk cargo last year.

NEW AFRICAN HUB
Lekki Port LFTZ Enterprise and terminal operator ICTSI have signed a sub-concession deal to develop and operate the box terminal at Tolaram Port, Nigeria, for 21 years. Tolaram Port@Lekki is being promoted by Tolaram Group in partnership with the Nigerian Port Authority and Lagos state government as a future major regional hub. State-of-the-art facilities include 14 post-Panamax cranes.

TAMPA EXPANSION
The US port of Tampa's planned expansion of nearby Port Redwing has moved ahead after the $8.9M purchase of 44ha from South Bay Corp and Industrial Park. "The port authority intends to develop the land for cargo terminals and distribution, as well as cargo generating industrial manufacturing activities," said port CEO Richard Wainio.

CANAVERAL GETS $24.4M
Port Canaveral will receive $24.4M in state funding to complete its harbor widening and deepening project to accommodate larger cruise and cargo ships. The money from the Florida Department of Transportation will allow the project to be completed four years earlier than would have been possible through the federal process.

Photo: Dietmar Hasenpusch

Europe's waterways can play a key role in boosting economic growth

Inland ports 'need better infrastructure'

Inland ports and waterways are a key element in the future development of trans-European trade, according to the European Federation of Inland Ports. EFIP stressed that, to release the true potential of inland navigation, more attention needs to be given to infrastructure.

"Developing the missing links and taking away the remaining bottlenecks [to achieve] a seamless European inland waterway network must be a first action point. Safeguarding the navigability through a good maintenance and regular dredging operations is a second priority," EFIP said in a statement.

The federation was responding to a European Commission working document: *Promoting, greening and integrating inland waterway transport in the single EU transport area*. The EC is discussing a common strategy to promote the benefits of inland water transport and thereby help shippers carry more cargo on the continent's waterways.

The EC document identifies inland ports as key components of the multimodal corridor infrastructure, but they need to be well distributed across the continent if inland waterway transport is to increase its market share. The commission is keen to safeguard the sustainable character of inland water transport and integrate it into what it calls a "co-modal transport system".

EFIP welcomed the EC's proposals for better spatial planning to encourage manufacturers to set up close to waterways and freight terminals. "Industrial spatial planning is almost as important for multimodality as transport policy," the federation commented. "Good spatial planning will allow the bundling of activities and, as a result, the bundling of volumes. Moreover, by creating integrated clusters, unnecessary transport movements are avoided and multimodal transport becomes more attractive."

In EFIP's view, the proposed EC policy on inland waterways will allow the waterway network to become an important pillar of the multimodal trans-European transport network (TEN-T) strategy. Establishing TEN-T has become a major element in the EU's strategy for competitiveness and employment creation.

The federation emphasised that the TEN-T policy on inland waterways will be effective only if it can count on an adequate budget and if the governance of the multimodal corridors is also 'multimodal'. "All modes and all nodes must be considered on an equal footing, each with its specificity and characteristics," EFIP concluded.

Cheers as Harriet emerges

"We all look forward to the day when pedestrians no longer have to compete with 18-wheelers for space on our downtown streets," commented Port of Miami director and IAPH vice-president Bill Johnson as 'Harriet', a giant tunnel boring machine, emerged to the cheers of more than 500 onlookers from the 1,219m tunnel it had just created under Biscayne Bay.

Construction of what will be a twin-tunnel highway began in May 2010 and having completed the first tube linking the port with the mainland, Harriet is being turned around to dig a parallel tunnel. Both will allow port traffic to move more easily to and from the road system surrounding the port.

"It's a milestone day for Port Miami and critical for future growth," said local mayor Carlos Gimenez. "We're on schedule for a May 2014 completion."

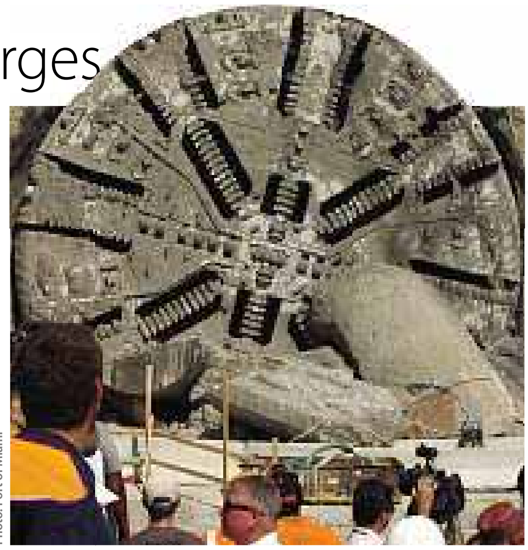


Photo: Port of Miami

Harriet breaks through after tunnelling under Biscayne Bay

APMT signs $900M Lazaro Cardenas deal

The investment by Danish operations giant APM Terminals will be used for the design, construction, operation and maintenance of a specialised container terminal at Lazaro Cardenas on the Pacific coast of Mexico.

APMT announced the successful tender to build and operate the box terminal in December 2011 and has now signed a 32-year concession with Lazaro Cardenas Port Authority. Construction was scheduled to start as *P&H* went to press.

"The first phase is scheduled for completion in 2015 and will cost over $300M – APM Terminals has signed a design-build contract with one of the major contractors in Mexico, Empresas ICA," J D Nielsen, APMT's Lazaro Cardenas MD, told *P&H*.

That first phase will see a new 43ha container yard and 650m quay constructed. Additional works include an administration building, warehouse, gates and on-dock railway to accommodate growing volumes of intermodal traffic, APMT revealed. Equipment in the first phase will include seven super-post-Panamax gantry cranes with a reach of 23 container rows, plus electric yard cranes and other specialised equipment. It is all, said APMT, "designed to reflect the company's focus on safety and sustainability. The container handling equipment under consideration is eco-friendly, featuring the latest developments in energy efficiency to reduce emissions."

Once the final phase is completed, the 102ha terminal will offer 1,485m of quay and 16.5m depth for the access channel and berths.

"This agreement shows our confidence in the future of the Mexican market," Nielsen concluded. "Our investment and expertise will help transform the nation's competitiveness through an efficient, integrated port and inland service network."

Barcelona expands again

Photo: Grup TCB

Barcelona container terminal today

The Port of Barcelona's Grup TCB-operated container terminal will add 24ha of land, a new railway line and an extra 150m of quay by mid-2013. "We're immersed in a strategic policy of continuous and constant improvement at Barcelona," a Grup TCB spokesman told *P&H*, "and this project also includes specific and different access points for entry and exit."

Construction is being undertaken by Copisa Group and Viasfalt. When the expansion has been completed, the terminal will cover 81ha and the quay will extend to 1,515m. To cope with the 900,000teu expansion of terminal capacity to a total of 2.3M teu, Grup TCB has added six new straddle carriers to the 62 it already operates. The contractors will also build a new transformer station to supply the extra electrical power required.

"Each of the two new access points will have six automatic doors – which can be extended to eight in the future – equipped with optical character recognition systems," the spokesman added. "They will also be able to prevent and detect illicit nuclear and radioactive materials as part of the Megaports project.

"As for rail, after finalising the adaptation to European-gauge [1,435mm] track at the beginning of the year, the terminal will have a total of six tracks by 2013," the spokesman continued. "It's already been extended at its northern end, enabling the exit of locomotives, and track length will now increase from 450m to 750m. Our rail-mounted gantry cranes' [RMGs] tracks have also been extended to 750m, enabling the terminal to work with three RMGs simultaneously," he stated.

Grup TCB is also expanding its TCBuen box terminal at the Colombian port of Buenaventura with an €81.4M investment in a second phase expansion to increase capacity by 600,000teu.

"It was planned for 2017," TCBuen director Víctor Muñoz told *P&H*, "but market requirements led to its advancement."

The project involves civil engineering, dredging and the acquisition of new machinery, and it should all be completed by the first quarter of 2014. Currently, the terminal has a 440m-long berth with 14m alongside depth and a 19ha container yard.

Dredging

USA CAN'T WAIT

Four years and $5M will be shaved off the deepening to 15.2m of the Port of Charleston if the US Army Corps of Engineers' project streamlining scheme succeeds. The scheme is backed by a White House initiative that prioritises deepening work at five US east coast ports. In addition to Charleston, the Obama Administration named the ports of New York, Savannah, Jacksonville and Miami as the first of 43 infrastructure projects to benefit from the 'We Can't Wait!' campaign to create jobs and stimulate the economy.

ABERDEEN BLASTING

Aberdeen Harbour, northern Scotland's principal commercial port, has awarded a £5.2M contract to Boskalis Westminster to widen and deepen the access channel and entrance to improve ferry access in bad weather and attract further oil, gas and wind turbine industry traffic. "The material to be dredged is silt, sand and gravel, including large cobbles, overlying bedrock, some of which will require marine blasting prior to dredging," a Boskalis spokesperson told *P&H*.

SAMALAJU DEEPER

As plans to build the new Malaysian port of Samalaju in Bintulu move forward, the project's approved preliminary environmental impact assessment states that an estimated 19ha will need to be reclaimed by dredging. "As the project is situated on a shallow continental shoreline, it is anticipated that dredging will be required to deepen the approach channel and two turning basins," stated Bintulu Port Holdings, which will oversee the project.

MAPUTO MAINTENANCE

Maputo Port Development Company has awarded a maintenance dredging contract to a joint venture between Emodrag and Rohde Nielsen. The project foresees the dredging of roughly 500,000m^3 in the port's access channel. The project value is estimated at €2M ($2.4M) and the work is expected to take about six weeks.

Cash & cargo

ANTWERP DRIVES GDP

An annual study of the economic importance of Belgian ports carried out by the National Bank of Belgium shows that the port of Antwerp generated €9.8Bn ($12Bn) of direct added value in 2011, representing 60% of the direct added value of all Belgian ports, 9.5% of the GDP of the Flanders region and 5.4% of Belgian GDP. The port of Antwerp provided jobs for 145,000 people, making it an important engine of the Flemish and Belgian economy.

SAUDI PORTS EXPAND

Saudi Arabia's ports authority has signed $163.7M-worth of contracts to expand King Abdul Aziz Port in Dammam, Dhuba Port in Tabuk, King Fahd Industrial Port in Yanbu and Yanbu's own commercial port. Power plant capacity will be increased from 50MW to 120MW at King Abdul Aziz Port within 24 months, both Dhuba and King Fahd will have new container terminals built within 30 months, and Yanbu will gain a new ferry and cruise terminal in the next 24 months.

POLAND MODERNISES

Poland's Seaports Authority has asked multidisciplinary consultant WYG to prepare the documents for a €13M ($16M) project to modernise port infrastructure and build terminals at the ports of Szczecin and Świnoujście. The project is part of an investment programme that runs to 2015 and includes building quays, modernising port infrastructure, improving roads and rebuilding railways.

VALE INVESTS

Brazilian mining giant Vale has placed orders with China's Dalian Huarui Heavy Industry for over $600M-worth of port handling equipment, including ultra-large unloaders, loaders, bucket-wheel stackers and reclaimers. They will be used at Vale's new bulk transhipment centre in the Malaysian port of Telek Rubiah, which can handle 90m tonnes of iron ore a year. The $1.3Bn complex has a blending centre and pelletising plant. Construction is set for late 2013 or early 2014.

Image: TIPC

How Kaohsiung's Intercontinental box terminal will look when completed

Investing $2.2Bn to expand ports

Taiwan's Council for Economic Planning and Development approved in August a $2.2Bn expansion plan for its international ports.

The budget was submitted by the ports' parent company, Taiwan International Ports Corporation. According to its five-year development programme, a major part of the investment will be devoted to upgrading port infrastructure. Some $300M, for example, will be spent on building an international cruise terminal, the second phase of the Intercontinental Container Terminal and the South Star land development project in Kaohsiung Port.

"We will continue to invest on our facilities to attract business and tourists," said a senior TIPC director. The corporation is also set to double annual passenger arrivals for cruise ships to 1.3M within five years, up from 630,000 in 2011 and aims to attract transhipment business to Kaohsiung from second-tier cities in mainland China.

Taiwan is particularly interested in attracting non-ferrous metals trade serving the People's Republic of China. The South Star project will build an industrial park on reclaimed land in the free trade zone inside Kaohsiung Port.

Chen Rong-shin, head of the Kaohsiung Harbor Authority management department, said the park would feature three specialised districts: 12ha for industrial manufacturing, 18ha for warehousing, storage and logistics and more than 26ha for green technology business.

The South Star project will also help Kaohsiung Port gain certification from the London Metal Exchange, the KHA said. "Within the next two months, Kaohsiung Port is expected to become the LME's fifth certified trading port in Asia," Chen added.

Once the port becomes an LME trading post, it will be easier to conduct business with mainland China, the biggest non-ferrous metals consumer in the world, the KHA said.

According to Chen, five out of eight Asian warehousing and logistics companies have said they intend to build warehousing in the port provided it receives LME certification.

Meanwhile, the KHA has awarded the design contract for a 2,400m^3 trailing suction hopper dredger to Swedish design consultant FKAB. The dredger will be built at Taiwan's Ching Fu Shipyard and will be used in development work at Kaohsiung Port.

Ship emissions drop in the Med

Sulphur dioxide ship emissions have dropped by two-thirds at some of Europe's Mediterranean ports since 2010, the European Commission reported recently.

Scientists at the EC's Joint Research Centre measured air quality in four Mediterranean ports before and after low-sulphur regulations took effect for ships at anchor in January 2010, the JRC said in a statement.

In Civitavecchia and Savona in Italy and Barcelona and Palma de Mallorca in Spain, the researchers found 66% less sulphur dioxide, while measurements taken at the non-EU port of Tunis in North Africa showed no decline, according to the JRC.

"This shows that the decreases in sulphur dioxide are a direct consequence of the application of the EU requirements," the statement said. The air quality measurements were carried out using an automated monitoring station sited on the cruise ship *Costa Pacifica*, which followed a fixed weekly route in the western Mediterranean during 2009 and 2010.

"The study also confirms a correlation between sulphur dioxide and chemical elements typically emitted from ship stacks, which demonstrates that ships were the main source of sulphur dioxide in the harbors," the statement added.

Ships berthed or anchored in EU harbors must use fuels with a sulphur content of less than 0.1%, where previously a sulphur content of up to 4.5% had been allowed.

People

BUSAN PRESIDENT

Lim Ki-tack has been appointed president of Busan Port Authority. He has held various government and ambassadorial posts, mostly recently as commissioner of South Korea's Maritime Safety Tribunal. Before that he was director-general of maritime safety policy at the Ministry of Land, Transport and Maritime Affairs.

LUGUJE ELECTED

Michael Achagwe Luguje was elected seventh secretary-general of the Port Management Association of West and Central Africa in June. Luguje takes over from El Hadj Mar Gueye of Senegal. He is a senior member of the Ghana Ports and Harbours Authority staff and is on secondment to the IMO as its regional co-ordinator for West and Central Africa.

ROTTERDAM COO

Ronald Paul has succeeded Thessa Menssen as director of infrastructure and maritime affairs (chief operating officer) at the Port of Rotterdam Authority. Paul joined the port authority in 1985, working initially on infrastructure projects. He has been director of the Project Organisation Maasvlakte 2 since 2004.

GLANG HEADS US HYDRO

The US National Oceanic and Atmospheric Administration has named Gerd Glang as director of the NOAA Office of Coast Survey and the nation's chief hydrographer. The US Senate has confirmed his nomination to the rank of rear admiral (lower half), which is now a prerequisite for the post. Glang will oversee NOAA's hydrographic services, vital to the country's $1.9Trn maritime economy.

GINCKELS HEADS PAI

Gunther Ginckels has been named new CEO of Port of Antwerp International, set up to invest in overseas ports and port-related projects in strategic areas. Ginckels has many years of management experience for multinational companies and B2B marketing and most recently was corporate director global fleet capacity at Safmarine Container Lines.

Port Khalifa begins operations

Photo: ADPC

Khalifa successfully completed a trial handling operation in July with the visit of Evergreen's *Ever Dynamic*

Full-scale trials at Abu Dhabi's new semi-automated box terminal at Khalifa Port have been completed successfully – which means that the terminal is on course to open for business in early September, Abu Dhabi Ports Company (ADPC) has reported.

Container ships have unloaded boxes as part of trial handling operations, including Evergreen's 4,713teu vessel *Ever Dynamic*, which visited the terminal in July. Khalifa is the only terminal in the Middle East region that has an automated container stack.

"The port has undergone extensive and very stringent testing procedures to ensure it operates at world-class port standards," said Captain Mohamed Al Shamisi, ADPC's executive VP, ports unit. "The [*Ever Dynamic*] milestone was a culmination of hard work and the joint efforts of teams from ADPC, Abu Dhabi Terminals and key stakeholders working on this national project."

Khalifa Port is able to service the world's largest seagoing container vessels, unlike Abu Dhabi's city-centre port of Mina Zayed, which it is replacing.

Phase one of the Khalifa Port Container Terminal will handle 2.5M teu in containers and 12M tonnes of general cargo annually. If market conditions prove to be favourable, by 2030 Khalifa is expected to have an annual throughput of 15M teu and 35M tonnes of general cargo.

The port is strategically located to serve the adjacent Khalifa Industrial Zone Abu Dhabi (Kizad), also operated by ADPC, which offers industrial tenants easy access to global markets. Kizad is destined to grow into one of the largest industrial sites in the world measuring 9km^2 in area, including the manmade offshore container terminal of 2.7km^2.

Kizad was launched as a key element in Abu Dhabi's plans to diversify its economy away from oil and is expected to account for 15% of the emirate's non-oil GDP by 2030. The zone has signed 25 lease agreements and preliminary agreements with prospective national, regional and international tenants. Interested companies range from glass manufacturers to clean technology specialists.

The most developed sector is the aluminium cluster, with core tenant Emirates Aluminium. A Kizad spokesman said it is negotiating a preliminary agreement with an unnamed US downstream aluminium company.

A 24-year lease for Dole at San Diego

The Port of San Diego has prolonged a lease held by Dole to import and export fresh fruit at its Tenth Avenue Marine Terminal for an unprecedented 24 years. Dole made San Diego its US West Coast hub in 2002, transferring its operations from Los Angeles.

"This long-term lease affirms the port's strong relationship with Dole Fresh Fruit Company," said Lou Smith, chairman of San Diego's Board of Port Commissioners. "Dole's continued presence here also underscores the significance of the Tenth Avenue Marine Terminal for cargo operations and regional economic vitality including jobs with family-sustaining wages."

The 24.5-year lease is unique because typically Dole chooses terms of five or 10 years. San Diego handles approximately 95,000teu of Dole fruit annually.

Under the terms of the new deal, Dole will work with the Port of San Diego on infrastructure improvements that will improve both cargo operations and the port environment for the benefit of the local community. San Diego will invest approximately $7M in onshore power equipment at the terminal, as required by new California Air Resources Board regulations.

The vessels will use shore power while berthed, thereby reducing their diesel emissions. "We are pleased to be able to provide an economic boost to the region and at the same time improve air quality around the terminal," said Stuart Jablon, Dole's VP operations.

The new lease extends Dole's operating area to a new warehouse offsite of the Tenth Avenue Marine Terminal, thereby eliminating truck staging and off-terminal operations from nearby residential areas.

Photo: Port of San Diego


Bothrey Island
Bothrey Sound
Small Craft Moorings
Anch and Fish Prohib
Tanks
Rossett Bridge
Wooded

High noon for Sydney's overweight containers

At noon on 9 June it became mandatory for all trucks to be weighed on leaving DP World's terminal at Port Botany, Sydney Ports CEO and IAPH vice-president ***Grant Gilfillan*** explains

There was no fanfare, no official ceremony, just a revision of the road layout so trucks drive over weigh-in-motion (WIM) scales for a trial period. The scales capture and record gross weights and axle weights without need for the trucks to stop.

The simplicity of the process belies the years of intense preparation for that moment when Port Botany became the latest port in the world to begin addressing the critical issue of overweight, or incorrectly declared, containers. To make it happen, the port had to overcome a myriad of issues and stakeholder concerns. It is still a work in progress, but Port Botany's stevedores, DP World and Patrick , both worked together to resolve a few minor teething issues and now it's business as usual at the exit gates.

The journey to mandatory weighing began in 2009 when the Roads and Maritime Service (RMS), a New South Wales (NSW) state government agency, conducted a series of on-road enforcement campaigns around the port. It found an average of 12% mass breaches from the vehicles weighed – twice the state average from similar enforcement operations.

In response, RMS issued formal improvement notices to the port stevedores that required them to take appropriate action to prevent the vehicles they loaded from breaching limits on mass and axle-loading. This was a legal requirement on the stevedores as loaders and as part of the Chain of Responsibility – an important principle that is aimed at improving compliance by all parties in the transport chain in relation to mass, dimension, load restraint, speed and fatigue.

In August 2010, the cargo industry in NSW became aware that DP World and Patrick were considering implementing static weighbridges in their terminals to meet those formal improvement notices. Concerns were immediately expressed that a rigid compliance approach, involving fixed weighbridges that required every truck to be stopped and weighed, would adversely affect the port's much improved landside efficiency. The slowdown would be especially severe if trucks had to be turned back into the terminal for box repositioning, unloading or even unpacking.

Because of its interest in ensuring road safety and the efficient movement of containers through Port Botany, its stakeholders recognised that Sydney Ports was ideally placed to take a leadership role in facilitating and co-ordinating the development of a more flexible, agreed industry solution. And with assistance from the roads and ports minister's office, Sydney Ports convened a taskforce made up of RMS and stakeholders that included road carriers, stevedores, customs brokers and Shipping Australia to help identify other options to manage overweight vehicles while not compromising terminal efficiency.

Several potential solutions were initially discussed, such as incorporating load-measuring cells on lifting equipment and on internal transfer vehicles. Those options, however, would have conflicted with port productivity and efficiency objectives, undermining the benefits gained under the Port Botany Landside Improvement Strategy, which had virtually halved truck turnaround times at the port within 12 months.

Additionally, those solutions would have required multiple IT system interfaces – and none would have measured a vehicle's axle mass, which had been where the majority of breaches were identified.

Following constructive debate between interested parties, it was agreed that the stevedores would install WIM scales, which do not require the driver to stop, to help in the early detection of overladen vehicles exiting their terminals. These unmanned, multi-lane scales show a green light if there's no breach, an orange light for a minor breach (up to 5% overweight), orange again for a substantial breach (between 5% and 10%) and red for a severe breach of more than 20%.

But how should breaches be managed? It was recognised that for this to work with minimal impact on exit flows, there would need to be a way of processing overweight breaches well away from the terminal gates. It was agreed at the taskforce meetings that trucks with minor or substantial axle mass breaches would legally be allowed to exit the stevedore gates and move to an accredited container freight station (CFS) within the port


Photo: DP World Sydney
Overview of the weigh-in-motion area


Photo: Patrick
Trucks do not have to stop

precinct for adjustment as follows:

- Staging – transfer to a higher-rated vehicle that would then deliver the load, or
- Deconsolidation – unpacking container contents for subsequent loose delivery.

Without this concession, up to 15% of containers might have required adjustment within the stevedores' premises, severely reducing the movement of freight through the port. Sydney Ports then engaged with potential CFSs in the port precinct to alert them to the services they would be required to undertake. All the relevant entities agreed commercially to share the task of either staging or unpacking relevant containers.

Seriously overweight trucks have to remain inside the stevedore's gate until they can be dealt with by the stevedore. Those trucks are stripped of containers, which are then staged for an appropriate vehicle (requiring rebooking via the vehicle booking system) or moved by rail to an intermodal terminal for further staging or deconsolidation.

A stevedore with internal access to a neighbouring CFS, however, may be allowed to move the non-compliant containers via internal transfer vehicles to that CFS (without travelling on a road or road-related area).

The key to ensuring engagement of the new WIM management system going forward was majority acceptance of the voluntary guidelines that were specifically established for the management of overweight trucks. Sydney Ports recognised early on that the best way to win support for the system was to involve all cargo industry stakeholders in the process of developing the guidelines. The outcome is a document that does not dictate actions that must be taken, but recommends courses of action with the hope that the cargo industry takes steps to ensure that all concerned meet their chain of responsibility obligations.

As the WIM trial continues, the impacts on existing truck turnaround times in Port Botany's stevedore terminals have been minimal. There have, however, been some increases in the turnaround times while the system has been bedded in and while drivers have become used to the new processes.

As to the impact on costs, it's expected that any breaches will begin creating additional costs and delays for the operators of overweight trucks and the entities that engaged them. For minor and substantial mass breach detections there is no cost to industry levied by the stevedores, but additional costs will be incurred at a CFS for handling, staging, storage and where necessary deconsolidation of a container. This cost can be accepted and paid by any entity within the supply chain that enters into a commercial arrangement with the CFS for the provision of those services.

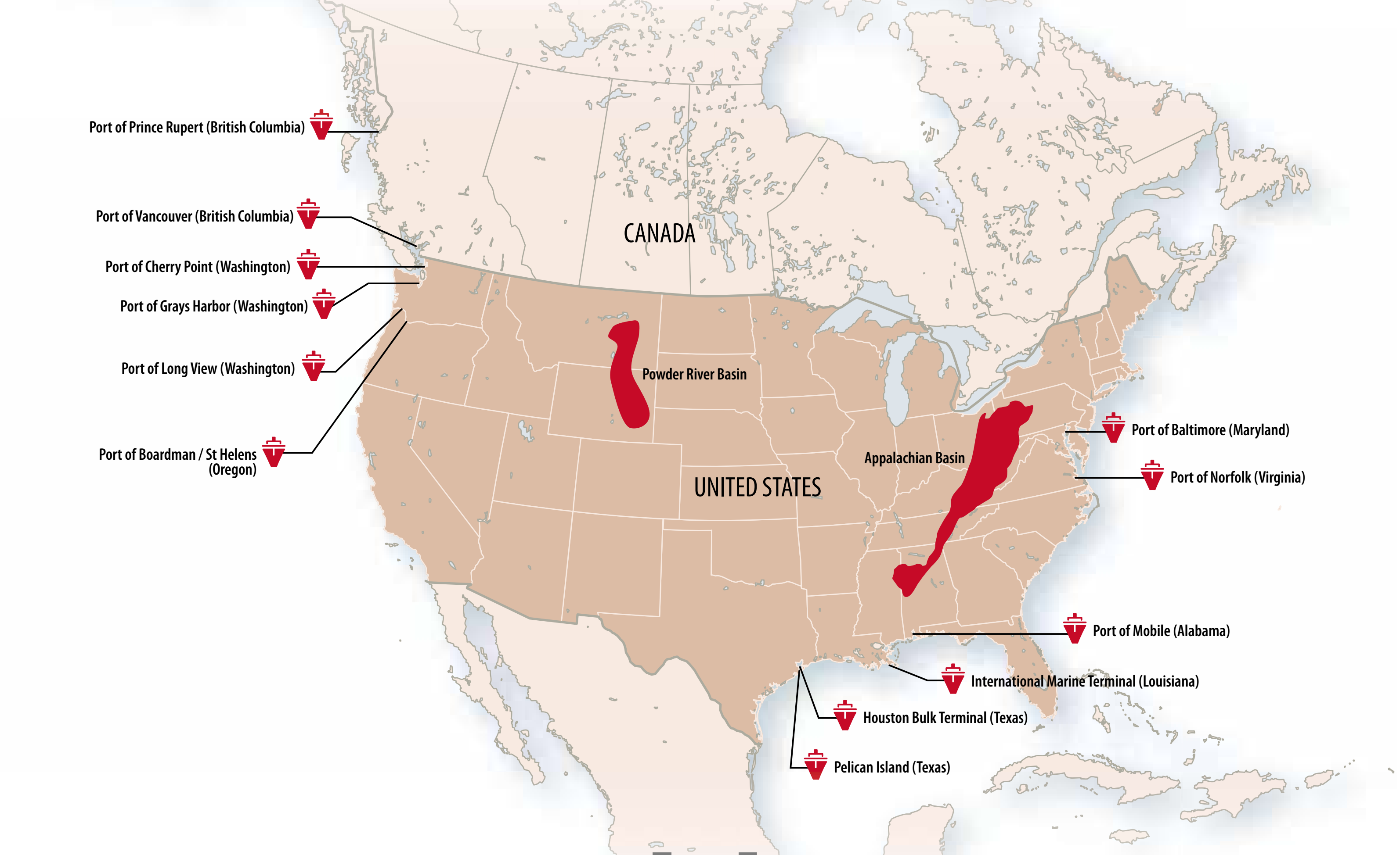
Where a severe mass breach is detected by the stevedore, all costs associated with booking, loading and unloading the vehicle are borne initially by the transport operator. If the breach has occurred through no direct fault of that operator, it will be his responsibility to seek those costs from his client.

Either way, the costs will be swiftly felt by the consignees and then the consignors of the goods concerned, which will no doubt encourage them to adopt self-regulation and ensure their future shipments always comply with legal mass limits. PH

Photo: DP World Sydney

Weigh-in-motion scales up close

"The costs will be swiftly felt by the consignees and then the consignors of the goods concerned"



Coal boom sparks US terminal push

Ports are braving an environmental minefield to tap surging demand for coal-export capacity, reports ***Greg Miller***

Over the past two years, port investments focused on US coal exports have far outstripped the dollars dedicated to container imports. There are now at least 18 coal export projects on the drawing boards, seeking to supply almost 230M tonnes a year in incremental capacity. Total projected investment by developers exceeds $3.3Bn.

Several projects may well fall victim to environmental opposition, but it is believed that a sizeable number will succeed, particularly along the US Gulf coast, where industrial developments face less resistance.

Peabody, the world's largest private-sector coal company with customers in over 25 countries on six continents, predicts that US coal export capacity will jump by 75% in the next half-decade, to 227M tonnes a year from 130M today. The company is well placed to supply that coal as it has about 9Bn tons of proven and probable coal reserves and owns majority interests in 30 coal operations throughout the US and Australia.

So what is driving this rush towards coal export terminals? The answer is threefold: collapsing US domestic coal consumption, higher demand for US coal in overseas markets and a shortfall of terminals serving western US mines. The drop in domestic coal demand has accelerated because of historically low pricing for natural gas. Stricter emission regulation of coal-fired plants has also exacerbated the trend.

Depressed domestic consumption is coinciding with higher European and Asian demand for US coal, fuelling new export records. IHS CERA projects that US coal exports will reach 109.8M tonnes in 2012, a 13% rise over 2011 – a year when US coal exports were the highest since 1991. IHS CERA believes exports will climb a further 11% in 2013, to 121.6M tonnes.

The stage is set for terminal operators to enjoy a huge upswing. But there's a catch. Most existing

Photo: Gregory Boyce

> Peabody is securing a large-volume US export platform to meet global seaborne coal demand
>
> **Gregory Boyce**, *CEO, Peabody*

terminal capacity is on the wrong shore: the east coast. This geographic mismatch between existing terminals and the location of coal mines is the pivotal driver of today's massive investment push for new capacity.

According to the Energy Information Administration, two-thirds of all US coal exports are handled by just three ports: Norfolk, Virginia; Baltimore, Maryland; and Mobile, Alabama. These ports are ideally placed to serve eastern coal mined from the Appalachia Basin.

The largest and highest-grade reserves in the USA, however, are found in the Powder River Basin (PRB), which straddles Wyoming and Montana. Consequently, the 'holy grail' for US coal producers is greenfield export terminal capacity to serve PRB in the Pacific states of Washington and Oregon. Six export projects in those two states are vying for approval, the most ambitious being terminal operator SSA Marine's Gateway Pacific concept in Cherry Point, Washington.

The environmental lobby has opposed these plans. Firstly, it argues that easing PRB coal shipments will increase global greenhouse gas emissions; secondly – as per a July 2012 report by the Western Organization of Resource Councils – terminal approvals will precipitate an "explosion" of coal movements that risk "environmental, economic, and other impacts".

The environmental backlash against Pacific northwest terminal plans has driven coal producers towards 'Plan B'. If they are unable to ship PRB coal through Washington or Oregon, they can use rail to take it north to British Columbia, Canada, (where the Ridley and Neptune Terminals are expanding capacity), or take the longer trek south to the US Gulf Coast.

Spurred by export demand, terminal plans along the US Gulf Coast are piling up. Kinder Morgan handled the first-ever exports of Colorado coal via Houston through one of its upgraded facilities in July 2011. In 2H/2011, the Port of Corpus Christi, in Texas, sealed agreements to handle at least 3M tonnes a year of Wyoming PRB coal.

In January this year, the Port of Galveston allowed port terminal and rail development company Texas, Mexico & Pacific Railroad to draft plans for a 20M tonnes a year export terminal on Pelican Island. In July, Peabody and Kinder Morgan signed a sweeping, long-term Gulf coast agreement. Peabody will export coal from Colorado, the PRB and the Illinois Basin through three of Kinder Morgan's Gulf coast terminals: Deepwater Terminal and Houston Bulk Terminal in Texas, and International Marine Terminal in Louisiana. Kinder Morgan has agreed to invest $400M to hike its Gulf coast coal export capacity to 24.5M tonnes a year from 7.3M tonnes a year currently.

Peabody's supply-chain strategy is telling for terminal operators seeking to decipher the coal industry's shifting focus along the US coastlines. Peabody has long been a significant owner (38%) in Dominion Terminal Associates in Newport News, Virginia, one of the dominant east coast export facilities.

Peabody moved to diversify to the Pacific coast in March 2011, signing a long-term agreement with SSA Marine's proposed Gateway Pacific project in which it commits to supply 24M tonnes a year when and if that facility starts up. "We're opening the door to a new era of US exports from the nation's largest and most productive coal region to the world's best market for coal [Asia]," Peabody chief executive officer Gregory Boyce affirmed last year.

As environmental pressure escalated on the Pacific coast, however, Peabody shifted its sights to the Gulf coast, inking July's Kinder Morgan deal. "Peabody is securing a large-volume, sustainable US export platform to meet growing global seaborne coal demand," Boyce said of the Kinder Morgan agreement.

The lesson from Peabody: US coal has no choice but to exit the domestic market and will flow via the terminal path of least resistance. PH

Leading terminal proposals

- **Gateway Pacific** – Cherry Point, Washington. Developer: SSA Marine. Cost: $655M. Capacity: 48M tonnes/year (coal) plus 6M tonnes/year (grain/potash)
- **Millennium Terminals** – Longview, Washington. Developer: Ambre Energy/Arch Coal. Cost: $600M. Capacity: 44M tonnes/year
- **Port Westward** – St Helens, Oregon. Developer: Kinder Morgan. Cost: $200M. Capacity: 30M tonnes/year
- **Pelican Island** – Pelican Island, Texas. Developer: Texas, Mexico & Pacific Railroad. Cost: $700M. Capacity: 20M tonnes/year
- **Kinder Morgan's Gulf Coast network project** – Terminals: Deepwater Terminal and Houston Bulk Terminal in Texas; International Marine Terminal, Myrtle Grove, Louisiana. Developer: Kinder Morgan. Cost: $400M. Additional capacity: 17.2M tonnes/year
- **Ridley Terminals** – Prince Rupert, British Columbia. Developer: Ridley Terminals. Cost: $197M. Additional capacity: 12M tonnes/year
- **Morrow Pacific** – Boardman/St Helens, Oregon. Developer: Ambre Energy. Cost: $242M. Capacity: 8M tonnes/year
- **Neptune Terminals** – Vancouver, British Columbia. Developer: Neptune Terminals. Cost: $63M. Additional capacity: 4.5M tonnes/year
- **Grays Harbor** – Grays Harbor, Washington. Developer: RailAmerica. Cost: $45M. Capacity: 4M tonnes/year

Source: Company releases and regulatory filings, published reports

Panama Canal fears mount

Will the $5.25Bn canal expansion project be delayed? And how much will the newly ratified toll increases cost users asks ***Michele Labrut***?

Port planners are now intently focused on the construction schedule of the Panama Canal expansion, a project that promises to redraw global trade routes during the coming years.

Over the past few months there has been escalating concern that completion may come later than the 21 October 2014 target date.

"For a project of this size, a few months delay is not unreasonable," conceded Jorge Quijano, executive vice-president of engineering and programme management for the Panama Canal Authority (ACP) and from this month, ACP administrator following the retirement of Alberto Alemán Zubieta.

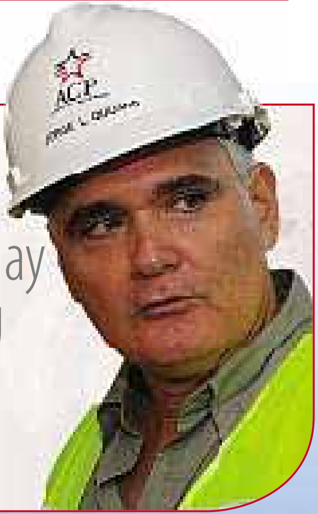
The consortium charged with constructing the canal expansion, GUPC, experienced difficulties in achieving the specified mix design for concrete to be placed in the lock-chamber structures. Consequently, placement of concrete began in July 2011, six months behind schedule. GUPC is now seeking to make up lost time.

By late June this year construction of the locks aspect of the project was 28% complete and the overall expansion project was at 41% completion.

Quijano insists that it is still too early to determine whether the expansion project will be completed on schedule or whether it will be a few months late.

Global port planners are also wondering how much

> For a project of this size, a few months delay is not unreasonable
>
> **Jorge Quijano**
> *Executive vice-president, ACP*



users will have to pay to transit the expanded canal. The competitiveness of the ACP toll structure, compared with other available options, could sway liners' future service decisions and therefore their port choices.

The post-expansion toll structure has yet to be finalised, but ACP executive vice-president Rodolfo Sabonge has revealed that the concept under consideration involves charging users for "cargo transported *versus* capacity".

The idea is similar in philosophy to a structure introduced for container ships last year, when the majority of the toll increase was placed on loaded containers, providing a cost break for empties-laden backhauls. Under the potential post-expansion plan, tolls would be the same for large and small ships carrying the same cargo volume. "If we move to the cargo system, it does not matter what the size is of a vessel transiting the canal," Sabonge noted.

The more immediate concern for canal users, however, is not the post-expansion tolls – it is the surprise toll hikes announced for both 2012 and 2013. In April, ACP revealed plans to raise tolls for multiple categories (excluding container ships, reefers and cruise ships) by an average of 7% and initially slated to begin this July with a further 7% in July 2013.

After an outcry during public hearings in May, the ACP announced that it would push back implementation of the toll hikes to October 2012 and

ACP's cutter dredger *Mindi* in the northern reaches of Gatún Lake

October 2013 respectively. But it did not back down from proposed increases.

Groups including the International Chamber of Shipping urged the ACP to drop the 2012/13 toll plans altogether and delay increases until the expanded canal is inaugurated. But the Panamanian government approved the new tolls in August and will introduce them in October 2012 and October 2013.

The new structure increases the number of segments from eight to ten, breaks down the tanker sector into three distinct segments and incorporates ro-ro vessels into the vehicle carrier segment. The container/break-bulk segment, which was included in the original proposal, has been eliminated.

Overall, tolls will increase by an average 15% for the following: general cargo; dry bulk; tanker; chemical tanker; LPG; vehicle carrier (and ro-ro) and others. Remaining sectors will not be adjusted at this time, nor will the price per teu for containers carried aboard a vessel. Additionally, there will be changes to tolls applicable to small vessels – based on vessel length – to incorporate adjustments not previously considered.

Since 1999, when the canal was transferred from the United States to Panama, its contribution to the country's economy is estimated at over $6.6Bn. The canals' recently approved budget for the next fiscal year is estimated at $2.38Bn of which $1.138Bn will go to the Panamanian Treasury.PH

Getting ready now for the post-expansion world

Caribbean hubs are convinced that the expanded Panama Canal will boost their transhipment volumes – and they are investing accordingly.

SPRC in Cartagena, Colombia, recently expanded its older Manga terminal from 1.2M to 1.5M teu a year and doubled capacity at its newer Contecar facility from 500,000teu to 1M teu a year.

Discussions are taking place on the next phase, which would double Contecar capacity to 2M teu/year. According to SPRC marketing vice-president Giovanni Benedetti, plans for yet another phase – which would take Contecar capacity to between 3M teu and 3.5M teu a year – will not be put into action until "2016 at the earliest, depending on market demand".

Another major hub in the southern Caribbean Basin, Panama's MIT, has also committed to substantial expansion. The board of SSA-owned MIT has agreed to increase capacity from today's 2.2M teu/year to 4M teu/year. "That investment is, of course, based on the canal expansion," explained SSA vice-president Carlos Urriola. "We will build in phases, just as we have done in the past."

In the central Caribbean, questions loom over plans in Kingston, Jamaica. In August 2011, the Port Authority of Jamaica (PAJ) signed a memorandum of understanding with CMA CGM that called for a $100M investment in Kingston's Gordon Cay.

That memorandum was scheduled to be converted into a firm commitment by the end of last year. By mid-July this year, however, a final agreement had still not been announced.

Separately, the PAJ has signed a MoU with China Harbour Engineering for development of the Fort Augusta property adjacent to the port's existing terminals. That yet-to-be-finalised plan calls for a $400M investment to increase capacity at Kingston from 3.2M teu a year to 5.2M teu a year.

Both the CMA CGM and Fort Augusta projects are contingent on a government-funded dredging programme, at an estimated cost of between $150M and $160M, which had yet to begin as *Ports & Harbors* went to press.

To the north, Hutchison-controlled Freeport Container Port (FCP) in the Bahamas offers liners the most conveniently located hub access to US ports. FCP completed dredging last year that brought 2,000m of quay to 18m draught. FCP is now in position to expand from its current capacity of 2M teu a year to 5M teu a year through gantry crane installations. FCP also plans to dredge to 18m on an additional 1,500m of quay over the next three years.

Capacity doubled at Contecar

Photo: SPRC

Photo: Jaxport

Digging out of a hole

Obama's initiative is helping US ports gain ground in the race to 15.2m, reports ***John Gallagher***

US ports fearing they will not be able to accommodate larger container ships entering the market after the expansion of the Panama Canal in 2014 or 2015 got a reprieve from President Obama, who in July announced he would be slashing port deepening timelines along the east coast.

As part of a broad initiative meant to create jobs and boost the economy, Obama directed the federal Office of Management and Budget to fast-track seven dredging and construction projects at five ports that are in various stages of reaching 15.2m (50ft) of draught: New York, Charleston, Savannah, Jacksonville and Miami.

Not included in the programme were the east coast ports of Baltimore and Virginia, both of which already have 15.2m berths and 15.2m channels, and are therefore post-Panamax-ready.

The Port of Baltimore's new Seagirt Marine Terminal, its primary container facility, which is operated by Ports America, was completed earlier this year. Four super post-Panamax gantry cranes arrived in June and will be operational by September.

Earlier this year APM Terminals submitted an unsolicited offer to operate the state-owned and leased box terminals at the Port of Virginia in Norfolk under a long-term public-private partnership. The state is considering competing proposals as well but is under no obligation to accept any of the offers.

The Port of Jacksonville (Jaxport) secured faster schedules for two of the seven port projects included in Obama's initiative: deepening the harbor from 12.2m to 15.2m, and construction of a $40M intermodal container transfer facility. Permitting for the deepening project can now be completed by April 2013, a year ahead of schedule.

"This means that we'll have more information faster about the optimal depth we'll need and what kind of investments these projects will require," Jaxport spokeswoman Nancy Rubin told *P&H*. "But the biggest message is that we're a port of national significance."

In May the US Army Corps of Engineers (USACE) approved a navigational study for the port's $40M Mile Point project, which will eliminate restrictions along a 1,500m stretch of the St John's River that prohibit larger ships from accessing Jacksonville harbor for about 70% of the time.

At the Port of Charleston, the fast-track schedule is expected to bring forward by up to a year a feasibility study to deepen the harbor from 13.7m to a maximum of 15.2m, which would see completion by September 2015. That, in turn, would move forward completion of the harbor deepening to 2020 or earlier, Charleston port officials told *P&H*.

In June, the South Carolina legislature committed $300M – enough to cover the full estimated cost of construction once Congress has authorised the project.

> We'll have more information faster about the optimal depth we'll need

Nancy Rubin
Jaxport spokeswoman

Photo: Tony Slinn

Photo: Port of Savannah

CMA CGM's *Figaro* in Savannah

Obama's fast-track plan will slash six months off the schedule for the raising of the Bayonne Bridge, in New Jersey, which will enable post-Panamax ships to access the largest box terminals of the Port Authority of New York & New Jersey (PANYNJ). In mid-2013 crews will begin building an elevated bridge roadway 20m above the existing deck. The port anticipates removing the old deck by the second half of 2015, whereas the original timeline called for removal in mid-2016.

To move the project along, PANYNJ announced in July that it had prequalified five construction teams seeking to bid on the major public works project.

At the Port of Savannah, which wants to deepen its harbor from 12.8m to 14.3m, the Obama Administration committed to completing all federal reviews of the project by November.

USACE recently completed a feasibility report that examined the benefits and costs of deepening the channel leading to the port – a report that had been challenged by green groups claiming the plan would damage the environment. As a result, the project includes an extensive mitigation plan, which includes restoration and preservation of the Savannah National Wildlife Refuge.

The Port of Miami, whose project is to deepen 4km of channel from 12.8m to 15.2m, is also receiving faster handling from USACE under Obama's review scheme. Depending on how fast it is able to approve bids, the port should be ready to handle post-Panamax ships by 2015, just as the expanded Panama Canal is likely to come on stream.

Not content with waiting for Washington DC to approve scarce federal dollars, the port worked with the state of Florida and the county to secure the $180M in funding the deepening project will require.

When combined with the construction of a $1Bn tunnel project that will speed containers in and out of the port, Miami estimates it will be able to double the volume of containers it handles from 1M to 2M teu over the next five to 10 years.

Port of Miami spokesman Eric Olafson told *P&H*: "It's all about capturing additional trade in the South American markets and competing for transhipment cargo in the Caribbean." PH

East coast port deepening

- **Boston** – channel depth at 12.2m, feasibility study to deepen to 15.2m under way
- **New York** – construction under way to deepen access channels to 15.2m by the end of 2014. Bayonne Bridge roadway to be raised by 2015
- **Philadelphia** – project under way to deepen 80km of the Delaware River to 13.7m, estimated completion date 2017
- **Baltimore** – channel and berth dredged to 15.2m, post-Panamax cranes scheduled to be operating in September
- **Norfolk (Port of Virginia)** – dredged to 15.2m, evaluation under way to go to 16.8m
- **Charleston** – 13.7m at low tide, can serve ships drawing up to 14.6m at high tide, plans to deepen to 15.2m by 2020
- **Savannah** – mitigation plan approved to dredge from 12.8m to 14.3m, target date for federal permitting approval is November 2012
- **Jacksonville** – feasibility study to deepen from 12.2m up to 15.2m to be completed by July 2013, no firm target date for project completion. Congressional approval pending for Mile Point project to lift 10.7m draught restriction
- **Miami** – deepening from 12.8m to 15.2m scheduled to be completed in 2015.

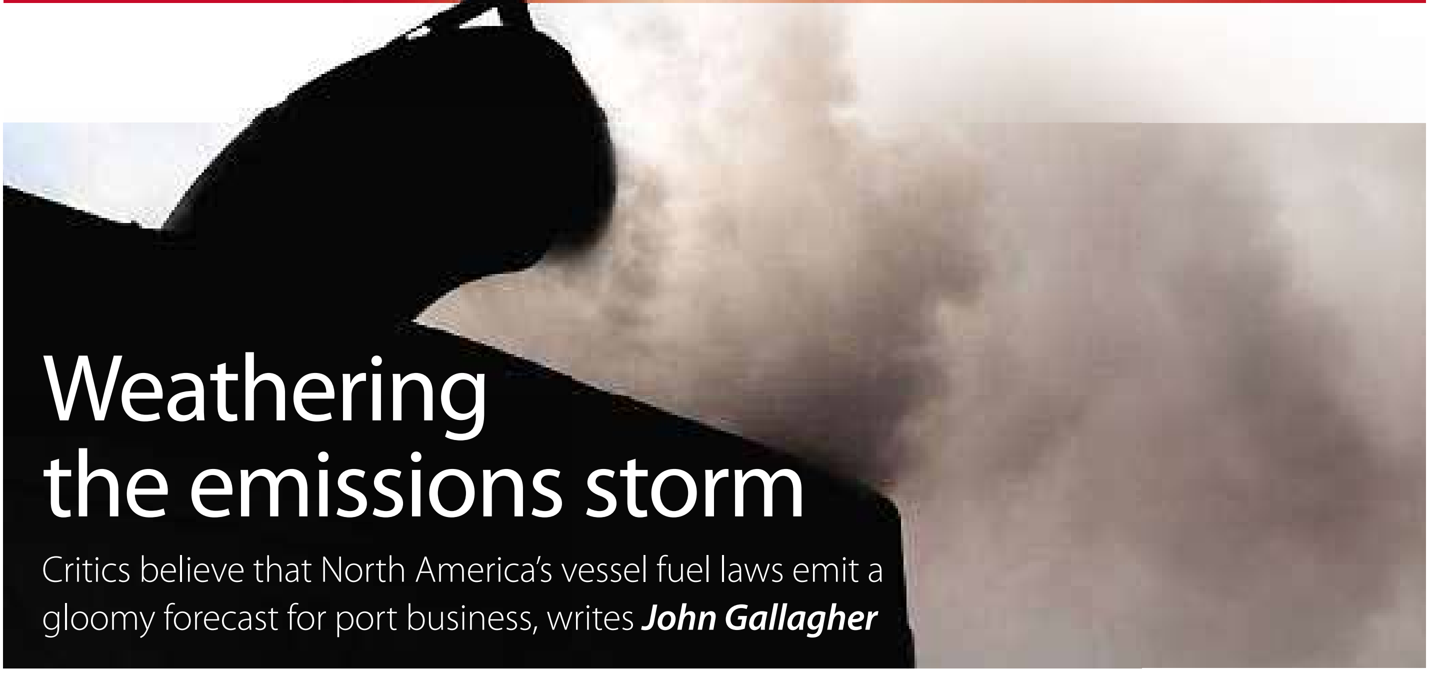


Photo: Shutterstock

Weathering the emissions storm

Critics believe that North America's vessel fuel laws emit a gloomy forecast for port business, writes ***John Gallagher***

Commenting on the introduction of the North American Emissions Control Area (ECA), which extends 200nm out from the US and Canadian coasts, US Environmental Protection Agency administrator Lisa Jackson stated: "This is an important – and long overdue – step in our efforts to protect the air and water along our shores, and the health of the people in our coastal communities.

"We want to ensure the economic strength of our port cities at the same time that we take responsible steps to protect public health and the environment in the United States and across the globe."

On 1 August, US regulators began enforcing the ECA, which restricts dramatically the amount of sulphur allowed in the fuel that powers the world's cargo and cruise ships. Vessels navigating within the ECA must burn marine fuel with a sulphur content of 1% or less – vessels had previously been allowed to use 1.5-2.5% sulphur fuel within the zone. The Canadian government announced in July that it intends to enforce the limit by the end of November.

In January 2015 there is a further 90% reduction in the allowable sulphur content, from 1% to 0.1%.

Ever since the regulation was adopted by the IMO in March 2010, carriers have been assessing the implications of the costlier lower-sulphur fuel for their bottom lines. Less clear has been what enforcement of the law will mean for North American port business. The initial outlook would not appear to be positive.

"We worry about it from the perspective of the health of vessel lines," Jimmy Lyons, CEO of Alabama State Port Authority, told *P&H*. "They're struggling with many factors, not the least of which is higher fuel costs, and something like this could very well be the straw that breaks the camel's back.

"They put pressure on us as a port to reduce our costs to them," Lyons added, "which puts financial pressure on us. The only thing good about it is that it's being imposed across the board, so it doesn't affect my business against a competing port."

That may hold true for ports that rely on carriers of international cargo whose vessels will spend a relatively short amount of time within the low-sulphur fuel zones. But ports that rely heavily on the North American cruise industry, which generates much of its revenue by carrying tourists on voyages that take place wholly within the 200nm limit, predict that they will see more dramatic effects.

Carnival Corporation, which operates cruise ships between Pacific Northwest ports and the Port of Anchorage, Alaska, has estimated that the 1% sulphur rule will increase its annual fuel bill by $35M-$45M. And when the 2015 restriction takes effect, the cruise giant reckons its outgoings will soar by between $175M and $195M a year.

The Alaska cruise industry has calculated that the

US Gulf ports – embracing an LNG future for the ECA?

Given that it emits zero sulphur, using liquefied natural gas (LNG) to address sulphur limits within ECAs seems to be an obvious solution. The problem: the infrastructure in place at US ports to support it is extremely limited.

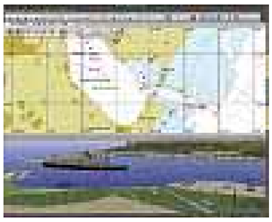
Major investments in the US offshore supply sector may soon change that situation, however, and ports in the Gulf of Mexico are expected to be the first to take advantage.

New Orleans-based offshore support vessel (OSV) operator Harvey Gulf International Marine is building four LNG-powered OSVs – the first such vessels to be flagged in the USA.

Wärtsilä was awarded a contract to supply the LNG propulsion equipment. "Those vessels are going to have to be fuelled in the Gulf of Mexico. That's a significant breakthrough for that region in terms of LNG supply," John Hatley, Wärtsilä North America's ship power vice-president told *P&H*.

Ports in the Gulf of Mexico region may become the first to provide LNG support, but they won't be the only ones, Hatley suggested.

"Wherever you see heavy traffic in the domestic trades, typically within that ECA zone, those are places where you will have the demand available for LNG to grow," he said.



> I don't think this has been very well thought out

Jimmy Lyons
Chief executive of Alabama State Port Authority


Photo: ASPA

increased costs necessary to pay for the ECA could lead to a 15% decline in cruise bookings, resulting in 585,000 fewer visitors to Alaska ports.

The potential harm that the ECA law could cause Alaska's ports and to the state's economy forms the basis of a lawsuit that the state filed against the Obama Administration in July in an effort to prohibit the federal government from enforcing the ECA along the Alaskan coast.

The ability of ports to provide bunkers that comply with the new sulphur limits has been another concern for the industry. Nevertheless, when the American Association of Port Authorities conducted an informal poll among its members over fuel availability, the problem was "not as great as we initially thought it might be, based on what our ports have heard from the vessel lines," spokesman Aaron Ellis told *P&H*.

Rudolph Kassinger, a fuel expert formerly with DNV Petroleum Services who now runs his own consulting company, is not as confident, however.

"The big unknown is how they are going to get to a 1% sulphur level," Kassinger told *P&H*. "I personally have doubted the ability of refineries to get to 1% in any significant amount. And there's no guarantee there won't be some growing pains and no guarantee when they'll start to make this product – which will be made in a different way from how they have made fuels for a long time."

Another potential problem for North American ports when it comes to bunkering is congestion. If low-sulphur fuel turns out to be less expensive in the USA than at foreign ports, the number of ships waiting to take on bunkers in the US before they begin an overseas leg could increase, said Fredrik Knutson, director of chartering and sales for Bulk Handling USA.

"Some ports don't allow bunkering and cargo handling to operate simultaneously for safety reasons, so that could further add to potential port delays," Knutson told *P&H*.

Ironically, Lyons points out, vessel deviations that could occur in order to secure the required fuel may in itself cause more fuel to be used – adding more pollution to the air. He concluded: "I don't think this has been very well thought out." PH

IMO's ECA guidelines

Three designated emissions control areas are now in place, the other two being sulphur oxide (SOx) ECAs in the Baltic Sea area and the North Sea area. The co-ordinates for the North American ECA can be found in Resolution MEPC.190(60), which is available on the IMO website or by going to http://tinyurl.com/cyps4nk

A fourth area, the US Caribbean Sea ECA, affects certain waters adjacent to the coasts of Puerto Rico and the US Virgin Islands. It was designated under amendments to Marpol adopted in July 2011, is expected to enter into force on 1 January 2013 and will take effect 12 months later on 1 January 2014.

Within ECAs, the SOx content of fuel oil (expressed in terms of % m/m – that is, by weight) must be no more than 1% m/m; falling to 0.1% m/m on and after 1 January 2015. This compares with 3.5% m/m outside an ECA, falling to 0.5% m/m on and after 1 January 2020, although that could be deferred to 1 January 2025 depending on the outcome of a review (to be completed by 2018) as to the availability of compliant fuel oil.

With regard to nitrogen oxide emissions, marine diesel engines installed on ships that were constructed on or after 1 January 2011 must comply with the Tier II standard set out in Regulation 13 of Marpol Annex VI.

More information and guidance is available from the US Environmental Protection Agency at www.epa.gov/otaq/oceanvessels.htm#north-american

East coast ports optimistic in face of strike threat

Fears of a massive dockworkers' strike in September that was set to affect the entire US east and Gulf coasts had subsided somewhat as *P&H* went to press after labour and terminal management resolved key issues.

The International Longshoremen's Association (ILA), which represents workers at 14 ports, and the US Maritime Alliance, which represents container terminal and vessel employers, reported that they had "agreed in principle" on issues involving automated terminal technology and the maintenance and repair of the truck chassis that are used to haul containers within marine terminals.

Yet to be resolved as *P&H* went to press were disputes concerning ILA jurisdiction and container weights.

The agreement was a significant breakthrough in negotiations that had been hampered from the outset by rhetoric on both sides of the bargaining table, causing shippers and carriers to consider routeing through Canadian and US west coast ports in the event of a strike.

The American Association of Port Authorities declined to comment to *Ports & Harbors* on the labour discussions.

An official at the Port of Charleston said she was not aware of shippers diverting cargo or shipping cargo early to avoid supply chain delays later in the year. If there were a sudden volume change, the port would not be able to tell if it was directly related to concerns over a strike, she stressed.

"In the past these [labour issues] have been resolved favourably, so we're erring on the side of optimism and are expecting the same outcome this time as well," South Carolina Port Authority spokeswoman Allison Skipper told *Ports & Harbors*.


Photo: Newsline

Dredging's poor relation?

US port engineers say commercial operators give a low priority to quay maintenance, while in Europe new predictive models are being developed

In the USA, landside port maintenance currently ranks lower in priority than dredging because of budget restraints, according to the US Army Corps of Engineers (USACE). "The biggest challenge we face is that just carrying out maintenance dredging to keep cargo traffic flowing takes up most of the budget – that's the first priority for shippers and other users," USACE Detroit operations chief David Wright told *P&H*. Among its responsibilities, the Detroit office is responsible for the Great Lakes ports and waterways.

Wright explained that when the local USACE office delivers its yearly budget it not only describes the state of the Great Lakes shipping infrastructure but also attempts to quantify the economic and trade impact that would result from failing to keep quays and other port infrastructure in optimal operating condition.

Budget constraints mean that monitoring for quay deterioration is cursory at present. "We have area officers out in the field who are responsible for particular ports and aim to go out at least once a year to check visually on the state of quays without survey equipment," he explained. "If they identify a particular problem requiring remedial action, they will elevate it up to the Detroit office. First we assess whether we have any funding for that harbor. If we do, we might follow up with more detailed inspection by our engineers.

"That said, we are not currently getting the funding to tackle that kind of problem. And we also don't have the funding to carry out modelling unless it's for harbors that have a specific maintenance problem that needs that kind of approach," Wright added.

In the USA, quay maintenance is usually managed by the individual harbor or port authority, but USACE does get involved in larger projects and particularly with maintenance dredging of ports and waterways.

Wright added that his office holds regular meetings with private-sector stakeholders to discuss maintenance funding, but where they contribute money, it's usually for dredging. "We have had smaller harbors that have carried out their own dredging, but these are mostly the recreational, shallow-draught harbors that know they're an even lower priority in the funding chain," he pointed out.

Scotland's chief commercial port is Aberdeen, which was transformed as the country's oil and gas industry developed from the mid-1960s onwards. Funded mostly in the industry's boom years, port infrastructure underwent substantial development,

> Maintenance dredging takes up most of the budget
>
> **David Wright**
> *Detroit operations chief, USACE*


Photo: USACE

Aberdeen's Torry Quay has cathodic protection

making Aberdeen today one of Europe's most modern ports.

The port authority is responsible for both dredging and infrastructure maintenance. Monitoring of Aberdeen's quays is carried out on a two-to-five-year cycle, port engineering director Ken Reilly told *P&H*. As part of this monitoring cycle, the quay walls, constructed of steel sheet piles, are checked for loss of thickness caused by corrosion.

"The integrity lifetime is calculated by measuring the rate of loss of steel through corrosion against the minimum required thickness to maintain adequate structural strength," Reilly stated. "For all parts of the harbor, good monitoring, inspection and maintenance will prolong the life of its infrastructure."

On the basis of the port's long experience, "applying cathodic protection against corrosion has prolonged the life of our quays. In other words, prevention is a cheaper alternative to rebuilding," said Reilly.

The use of cathodic quay protection has been an element of Aberdeen's current £19M ($30M) project to expand its deepwater facilities. The first phase of its Torry Quay redevelopment project was completed earlier this year and included the refurbishment of 300m of realigned berths, a stronger quayside for heavy-lift operations and a widening of the River Dee access channel to improve navigation. Reilly said the redevelopment was a response to the trend towards using large, deep-draught vessels to service the offshore oil and gas industry.

Elsewhere in Europe, some of the bigger container ports have put considerable investment into the development of models that can identify the best time to initiate remedial intervention to ensure maximum longevity for steel-concrete quay infrastructures that are in constant use.

At the Port of Rotterdam, research into the causes and effects of accelerated low water corrosion (ALWC) has been extended to find a correlation between laboratory tests and the actual loss of material on the substructures of the quay walls.

By validating test results, it has been possible to identify a model capable of predicting the safety factors on both structure strength and soil retention over the remaining lifetime of a quay wall and, if needed, suggest the optimal moment to start maintenance. As most quay wall substructures are made up of a steel structure with a concrete superstructure, a similar method is used to predict the ageing of concrete.

The Port of Rotterdam is responsible for all its dredging and infrastructure maintenance, and its marine structures asset manager Henk Voogt told *P&H* that the port had developed a new asset management tool as a result of these simulations to prioritise maintenance measures. In addition, a risk assessment is implemented to identify and rank the structure's risks. Then the asset's business value is used to clarify the final maintenance prioritisation, which makes remaining post-maintenance risks more visible.

Rotterdam owns around 64km of quay walls, with a total replacement value of about €1.45Bn ($1.79Bn). More than two-thirds of them are under attack by ALWC because the substructure is made of steel sheet piling or steel combi walls (tubular piles and sheet piles combined). The typical service life for maritime civil engineering structures is about 50 years and the capital invested is substantial. A large proportion of these assets will be nearing the end of their service lifespan in the coming decades so, to manage these assets effectively and efficiently, Voogt said it is essential to have in place a system that can track required annual maintenance and also forecast the short- and long-term costs of keeping these structures in service.

"Finally, the consequences of the credit crisis and the subsequent recent economic recession also play a role: port and maritime organisations have been forced to think, in a more integrated way, about which assets they'll put their money into," he concluded. PH

The quay questions

Knowing the corrosion rate for a quay is one thing, but connecting that to asset management is another. The main questions to consider are:

- What does it mean for the port's tenants?
- How safe is the structure?
- Will it reach the end of its planned lifetime?
- When is the best moment to invest in maintenance?
- With a finite budget, where do I put the money first?


Microbial tests have helped predict maintenance needs for quay walls

Photo: Port of Rotterdam

Automation guide for busy terminals

While it is the big full-automation projects that grab the headlines, part-automation that is feasible for most of the world's container terminal operators is costly and requires intricate planning

Past issues of *P&H* have featured major automated terminal projects on greenfield sites, such as Abu Dhabi's Khalifa Port and Kuwait's Boubyan Island, but initiatives on this scale are just pipe-dreams for most port and terminal operators, which need to get on with the day job while planning for the future.

Nevertheless, terminals that rely largely on manned container handling do have the option of automating their processes on a more modest and cost-effective scale. There is no shortage of examples of semi-automated terminals whose operators have boosted reliability, productivity, efficiency and employee safety by introducing modified automation applications and technologies in a piecemeal fashion.

Georgia Ports Authority stands out as one of the USA's big success stories. Since the late 1990s, the east coast port authority has increased its container handling operations by more than 230%, transforming its Garden City Terminal in Savannah into the fourth-largest container port in the USA. GCT handled just under 3M teu in the 2011/12 financial year.

With an eye to the Panama Canal expansion, Georgia's stated ambition is to increase annual capacity to 6.5M teu by 2020, without increasing GCT's footprint, gradually introducing modest, but carefully targeted, automated applications.

"We have set about maximising volume through the same terminal footprint by a handful of strategies, in the first place by moving from a hybrid RTG/top-lift terminal to an all-RTG terminal to compress the stacks and concentrate more containers per acre," Bill Sutton, GPA's director of information technology, told *P&H*. "We've worked with all GCT's players to study the terminal's processes and make them as efficient as possible. Our aim was to smooth out any chokepoints so that we could push any information to the users."

The authority operates a fleet of more than 120 rubber-tyred gantry (RTG) cranes, each fitted with position detectors. When Savannah's RTG operators position over a truck, the radio frequency identification (RFID) tag on the container sends to the RTG the work instruction for that box. When the box is relocated, the position detection system automatically updates the inventory. In addition to being employed on the terminal's automated gates, RFID in the yard has helped GPA to improve operational safety and productivity and provided real-time intelligence on truck and container inventory location.

Working conditions and efficiencies for RTG operators have also improved, Sutton explained. Operators no longer have to look down at containers some 20–28m below to read box identity numbers manually, and automated job promotion eliminates the need to scroll through a list of assignments on the cab data terminal to find the right task. "So the operator is being employed as an RTG specialist rather than a data entry clerk," Sutton pointed out.

Overall, said Sutton, the combined use of RFID systems at the gate and the yard has helped reduce average turnaround time for trucks calling at GCT by 10–11% per transaction.

Back in 2000, GPA looked at automated gate,

> It has never been about removing jobs
>
> **Bill Sutton**
>
> *Director of information technology, Georgia Ports Authority*

Photo: Georgia Ports Authority

equipment and container tracking systems at container terminals around the world. "We visited world-class leaders in production and volume to evaluate best-of-breed technologies and vendors and assess what we could leverage in our business and labour environment," said Sutton. "For us, it has never been about removing jobs, but putting systems in place that allow our people to process more containers per day, reliably and efficiently, and ensure that our equipment is operating at the highest productivity."

His advice to ports thinking of pursuing a similar intermediate automation strategy is to visit other ports and investigate what is on offer. "I think you have a lot more options than two years ago. It's an excellent opportunity to see what other ports are doing and cobble together a solution that works for you. You have to study your own situation, look at the opportunities available and then pick the ones that fit best," Sutton commented.

Another example of improved efficiency and productivity is a new operating process recently announced by Hamburg operator HHLA at its semi-automated Container Terminal Altenwerder (CTA). Previously, all import boxes were first unloaded at the terminal before loading of export containers began. This meant that 50% of all equipment movements were purely for positioning, without containers.

HHLA is now proposing what it calls a 'dual cycle' mode combining one inbound and one outbound container move in the same equipment round trip, partly the fruit of an enhanced data exchange. It is only a partial change of process, however, as the scheme cannot be applied to all sections of a vessel. "The containers on deck have to be evacuated first, then we start clearing a small compartment in the vessel," explained CTA's terminal development manager, Gerlinde John.

The new process should bring about a marked reduction in berth dwell times for liner operators, allowing them to improve on schedule integrity. "It's all about gaining flexibility," said HHLA's container terminal division MD, Thomas Lütje. Shorter vessel turnaround times in Altenwerder, which handles around 3M teu annually, would also enable liner operators to reduce sailing speeds further and thereby minimise fuel consumption, Lütje pointed out.

The implementation of the dual cycle demands a more sophisticated exchange of data between carriers and the terminal and for data exchange between their central ship planning departments and Altenwerder to be streamlined. Planners must make sure that import and export container slots are concentrated enough to have pick-up and discharge moves combined and the terminal will also need more time for pre-planning of the export containers in the yard by using advanced terminal management software. PH

Photo: Dietmar Hasenpusch

Hamburg's Container Terminal Altenwerder aims to combine inbound and outbound moves in a single equipment trip

A threat to jobs?

The path to automation is not as smooth as some equipment manufacturers would have us believe. Understandably, port workers fear automation will result in fewer jobs. This was certainly the reaction of Australian dockers' unions recently when rail and ports operator Asciano outlined a $348M investment programme to expand its Patrick container terminal in Port Botany, Sydney, introducing AutoStrad straddle carrier technology.

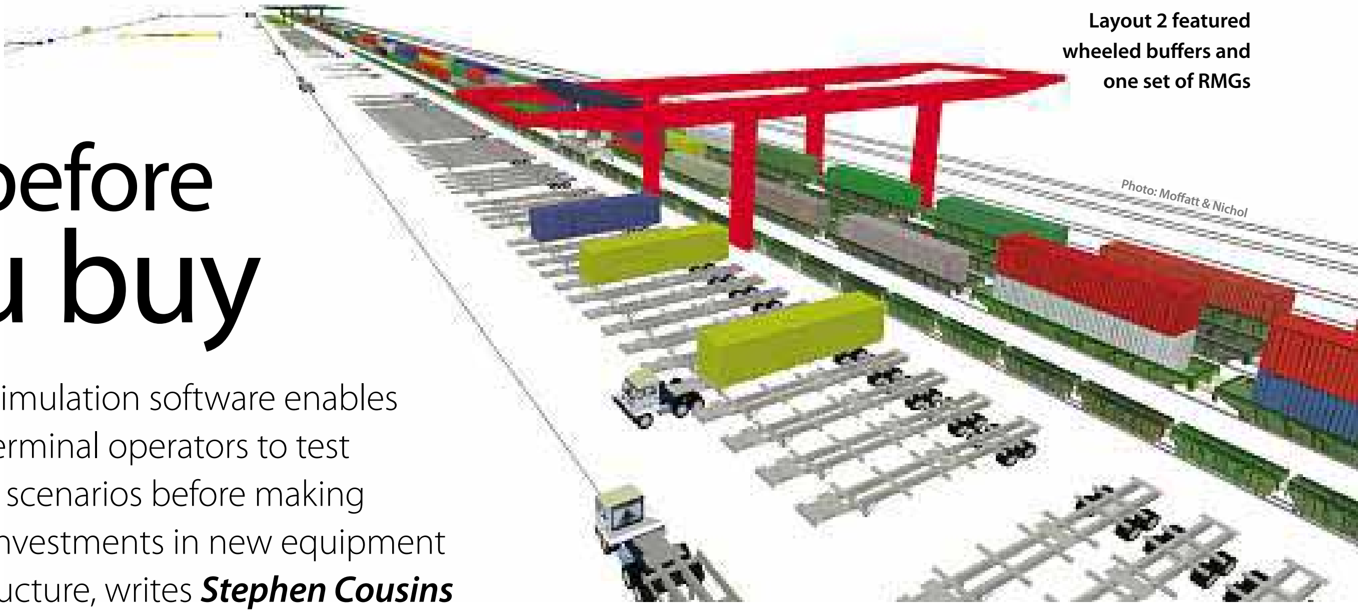
Asciano estimates that the use of AutoStrads at Patrick will allow the company to reduce its workforce by more than half, with the loss of some 270 jobs by mid-2014. The unions were considering industrial action as *P&H* went to press.

But has the response of dock workers to automation been universally hostile? Michael Dempsey, general manager ports and terminals, of Identec Solutions, explained to *P&H* that some of the new applications measure productivity and some unions welcome proposals to reward workers on the basis of productivity. "The equipment Identec offers has an access control capability that is also the mechanism that records the productivity of port workers," Dempsey explained. "Some terminals now aim to compensate individual workers based on the productivity data derived from our systems.

"Identec's experience is that unions actually encourage the adoption of this productivity monitoring technology because pay is directly tied to the capture of productivity. I would take the contrary position that, regardless of whether terminals are laying off staff or hiring, the systems Identec puts in place provide the data to manage the workforce. More importantly, it provides a completely transparent, non-partisan way of capturing productivity data," he pointed out.

Try before you buy

Advanced simulation software enables container terminal operators to test operational scenarios before making expensive investments in new equipment and infrastructure, writes ***Stephen Cousins***



Layout 2 featured wheeled buffers and one set of RMGs

Photo: Moffatt & Nichol

Container terminals' drive towards ever greater productivity and efficiency has given rise to a new breed of computer simulation and emulation software designed to help terminals test theoretical layouts and equipment installations before investing in either new equipment or infrastructure.

Software applications such as ISL's Chesscon, FlexTerm (previously known as Flexsim CT) from Moffatt & Nicol (M&N), and AECOM's General Marine Terminal Simulation can help container terminal operators and owners plan new terminals, reorganise existing ones or test various combinations of equipment handling systems and strategies based on data from real-world equipment and processes. The results can then be viewed on working real-time three-dimensional computer models and analysed to provide extensive statistics that summarise the course and pattern of simulated operations.

These factors came into play when FlexTerm was used to simulate options for on-dock intermodal yard layouts at a large, automated container terminal in North America. It was one of a series of simulation studies performed for the terminal.

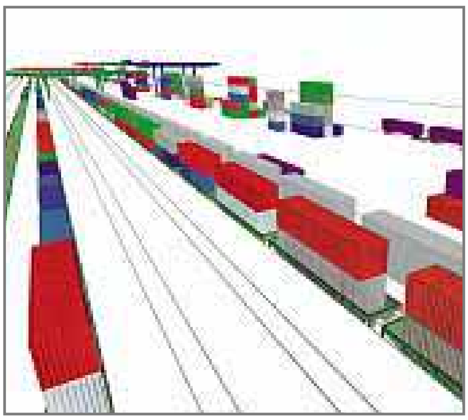
The client was the port and the terminal operator (which asked not to be named) and it wanted to explore the options and see which would provide the optimal combination of cost and efficiency.

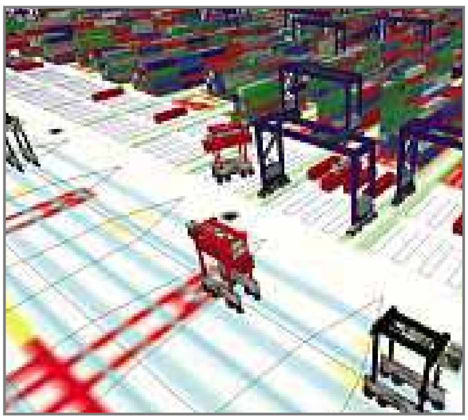
Two operational layouts were simulated:

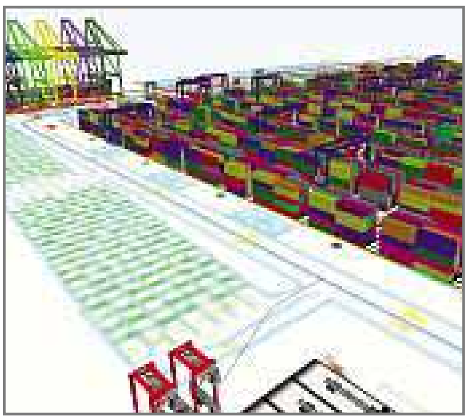
- Layout 1 featured two buffer container storage areas, one large and one small, located parallel to the rail loading tracks and serviced by two sets of rail-mounted gantry cranes (RMGs), one loading and unloading containers from the trains and serving the small buffer, the other crane working both buffers
- Layout 2 featured wheeled buffers (ie truck chassis) and just one set of RMGs that would serve the wheeled buffers and load and unload the trains.

Before the simulations were carried out, Layout 1 was considered a more traditional design, which had the advantage of providing more operational flexibility thanks to its larger buffer size. Layout 2, however, was a relatively new concept that could potentially save space, equipment and related costs.

To help the client make the right decision, marine civil engineering services provider M&N had to ask questions such as: "Will the two layout configurations work for the required high throughput volumes, particularly the wheeled buffer layout with its







Layout 1 (*left*) featured two buffer container storage areas, serviced by two sets of RMGs

FlexTerm can simulate a variety of crane and yard interactions (*centre and right*)

Photos: Moffatt & Nichol

relatively small number of buffers?" and "What equipment should be specified and at what cost?".

Simulation was the only effective means of answering such questions, explained Moffatt & Nichol port engineer Alan Zhang, who also heads up the FlexTerm project.

"These questions cannot be answered with confidence using traditional analytical tools because of the simultaneous activities taking place on multiple tracks and the various interactions between trucks, RMGs, trains, containers and grounding crews," he told *P&H*. "Detailed modelling of these interactions and dynamics requires a simulation of all operations."

According to M&N, FlexTerm's simulated models are able to achieve a high level of accuracy in terms of real-world dynamics and processes.

"The accuracy of the model depends on the dynamics of what's being simulated and is always appropriate to the question you are trying to answer," said M&N vice-president Ashebir Jacob. "For example, if you just want to know the throughput of a facility you might simply input data on vehicle speeds and accelerations, plus crane cycle times etc. Determining the most efficient terminal layout can be highly complex, however, and requires a huge amount of data on all aspects of an operation."

M&N tests and verifies all its data against actual port situations and equipment before it completes any analysis in the simulation. "We are lucky to have a team with experience of being terminal operators, planners and equipment experts who can feed into this," added Jacob.

Working on the North American project, M&N built detailed simulation models for each of the two intermodal yard layouts and put them through various scenarios with different working shift configurations and equipment combinations. The complicated models included highly specific details such as RMG kinematics, individual container transfers between trucks and cranes, buffer management, coning crew delays, train arrival and departure times, conflicts between RMGs, and safety rules for both grounding crews and trucks.

After analysing the simulations, M&N found that, with the right equipment configurations, both layouts could achieve the desired throughput and the number of tracks and buffers were sufficient to support the operation. It also found, however, that the non-typical wheeled buffer layout would also offer important savings in terms of space and the amount of equipment required. As a result, the client went on to plan its new facility based on this arrangement.

Intermodal yards are just one of a range of simulation possibilities at ports' fingertips, said Zhang. He explained: "Users can quickly build models of almost any scenario that needs exploring, from quay crane, berth and container yard layouts, to testing different types of equipment and transport infrastructure – or a combination of all these."

In another interesting recent project, M&N used FlexTerm to test a high-density, fully automated terminal arrangement. "On the compact site any minor change could have a major impact on productivity, so the software became critical in testing this," revealed Jacob. "Simulation is always important when terminal automation is involved as, once built, automated systems are there for the life of a project and would require a huge amount of investment to remove or alter."

The software can also function as a useful proving ground for terminal operating systems (TOS). M&N has developed an interface programme that enables a TOS to communicate with FlexTerm and send commands to the simulation it as if it was interacting with a real container terminal facility.

"For example, the TOS can provide instructions for containers coming from a gate or from a vessel, which are then enacted by virtual equipment and processes to test that the system is doing what we want," explained Zhang.

The main aim of this set-up is to help TOS developers test and eliminate bugs from their software and optimise it before it goes into real-world operation, a process that can be carried out without having to shut down the actual terminal in order to test the terminal operating systems.

The software can also function as a tool to train terminal operations staff before a facility goes live, concluded Zhang. PH

Predicting the weather

In use by 13 ports around New Zealand and Australia, MetOcean View (MOV) from port weather condition planning specialist MetOcean Solutions is delivered though a web-based portal with an interactive weather map.

"MOV's harbor-scale forecast provides seven days' marine prediction with updates every six hours distributed by automated email reports," company spokesperson Rosalina Pang told *Ports & Harbors*. "MOV is used as a planning system by marine managers to schedule shipping movements and maximise berth use.

"Many ports and harbors experience occasions when energetic weather conditions lead to operational issues," Pang continued. "This relates to under-keel clearance, excessive vessel motion or high winds disrupting crane and cargo operations. MOV uses the latest ocean and atmospheric forecast models and bathymetry data to reliably map coastal currents, winds and waves at the most appropriate scale for each port, accurately predicting long wave surging conditions that cause excessive vessel motion – especially in critical areas such as shipping channels, harbor entrances and berths."

A demonstration of the system is available at www.metocean.co.nz.

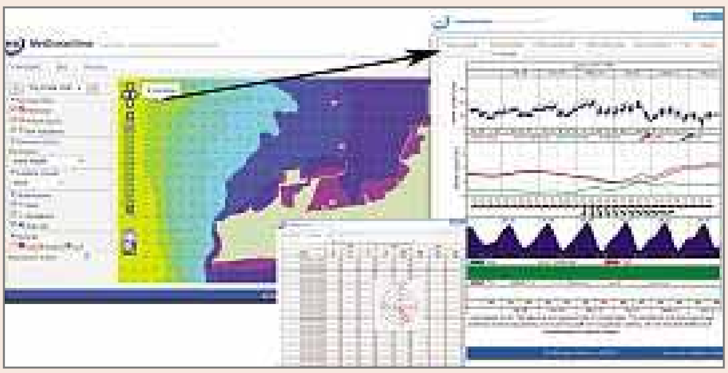


Photo: MetOcean

At Australia's Port of Geraldton, MOV shows wind, wave, tide and other data

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Thinking BIG

As shipping lines ramp up the size and capacity of container ships, writes ***Stephen Cousins***, ports are struggling to support them with deeper draughts and more advanced infrastructure and equipment

Mainline container services are undergoing a shift in scale. Whereas just 15 years ago post-Panamax ships of around 5,500teu were the norm, today ultra-large container ships (ULCSs) of more than 12,000teu are becoming common and orders have been placed for 18,000teu-capacity mega-ships capable of stacking 23 containers across the deck.

The scheduled completion in 2014 of a third set of locks on the Panama Canal, a vital conduit for international maritime trade, will drive global demand for 12,000teu to 13,000teu vessels, the post-2014 Panamax class (*see page 16*).

This new wave of vessels is creating challenges across the terminal industry. As shipping companies send ever-larger vessels to a shrinking number of ports to keep down their transport costs, ports are coming under pressure to provide sufficient draught, cranes and other infrastructure needed to support the vessels – or face being dropped from shippers' routes.

Bigger ships also provide benefits for ports, by enabling them to achieve economies of scale: bigger ships mean faster turnaround, improved productivity and therefore more capacity.

Several ports in the USA, including New York, Norfolk and Baltimore, have already increased their depth to at least 15m to accommodate post-2014 Panamax vessels, and nearby South American ports are also working on it. On the other side of the Atlantic, recent dredging campaigns at Antwerp in Belgium and Felixstowe in the UK will enable them to cater to the largest ULCSs in operation, while German rival the Port of Hamburg is following closely behind, having recently won approval for a $535M campaign to dredge the Elbe and enable access at high tide by ships with a maximum draught of 14.8m.

In the case studies below we examine how three ports have tackled the post-2014 scenario. PH

CASE STUDY 1

Success – Port of Antwerp

With the Western Scheldt access channel deepening completed in 2010 and construction of the world's largest lock at Deurganck dock now under way, the Port of Antwerp is future-proofing itself to ensure it can handle the biggest ULCSs on the water.

Widening and deepening the access channel has increased tide-independent navigation from 11.9m to 13.1m draught and created a tide-dependent draught of up to 15.65m. That work enabled the port to receive in January the world's largest cargo ship, the 15,500teu *Edith Maersk*, for the first time.

The deeper channel and increased tidal windows have resulted in a spectacular increase in the number of calls by ULCSs over the past few months, explained Annik Dirx, Antwerp's communications head: "Since the deepening we've been visited by many more 14,000teu+ sized vessels, which are calling two or three times every week. It's difficult to precisely measure the extra cargo handled as a result of deepening, but container volumes have been steadily increasing and in 1Q/2012 we handled 2,188,150teu, which is an all-time record."

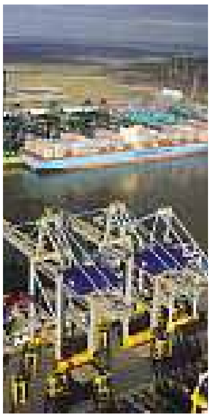

Photo: Antwerp Port Authority

Antwerp's efforts to improve accessibility also involve construction of a second lock at Deurganck dock designed to create a new link to the sea between the Scheldt and the Waasland Canal. The €340M project will enable rapid access to docks on the port's expanding left bank.

When it opens in 2016, the 500m-long, 68m-wide and 17.8m-deep lock will be the largest in the world. It is already one of the largest infrastructure projects undertaken in Flanders and is considered so important to the European transport network that the European Investment Bank is providing 50% of the finance for the project.

The lock is also considered crucial to the continuing development of the left bank. Provisional government approval was recently received for the commencement of a major project that will include a 1,000ha port zone and new wind turbines.

To construct the lock, a consortium of five companies, Jan De Nul, CEI-De Meyer and Betonac, Herbosch-Kiere and Antwerpse Bouwwerken, will excavate more than 9.1M m^3 of earth and install 22,000 tonnes of structural steel – three times the amount that was required to build the Eiffel Tower – plus 795,000m^3 of reinforced concrete. PH

CASE STUDY 2

Almost there – Port of Santos

A dredging campaign costing $83M is almost complete and the terminal operating arms of the world's biggest shippers are constructing new facilities, which bodes well for the post-2014 Panamax future of Brazil's largest port.

The Santos deepening is one component of a $700M nationwide dredging plan initiated in 2007 by Brazil's federal government under the Accelerated Economic Growth (PAC) programme, a major infrastructure investment package to alleviate poverty. The ports of Rio de Janeiro, Paranaguá and Suape are also being deepened to a minimum of 15m.


Photo: Port of Santos

Now 95% complete, the Santos dredging has deepened most of the navigation channel to 15m and widened it to 220m. Congestion in Santos has been a serious problem, with large vessels often unable to pass one another in the fairway. The deepening will enable access by 15.2m-draught vessels at high tide and allow far larger turning circles at most terminals.

Santos already handles 9,000teu vessels chartered by Hamburg Süd, but in anticipation of larger ships, the private terminals Santos Brasil and Libra have started investing in the biggest ship-to-shore gantry cranes. Meanwhile, construction at the Brasil Terminal Portuário facility, a joint venture between Terminal Investment Limited and APM Terminals, indicates a move towards visits by larger vessels. So too does construction of the DP World-financed Empresa Brasileira de Terminais Portuários (Embraport). Both facilities are scheduled to open next year.

"The capacity increase will enable the port to handle 700,000teu a year or more," explained Michel Donner, senior adviser at Drewry Shipping Consultants. "On paper, when all the port terminals are operational, it should have space to handle four post-2014 Panamax vessels simultaneously."

The success of Santos is by no means guaranteed, however, for it faces fierce competition from rival ports with similar depths and crane equipment that also seek hub port status. There is also some debate as to whether Santos, and other ports on the east coast of South America, will receive the number of post-2014 Panamax vessels that many are expecting, said Donner.

"I've heard conflicting opinions from experts on whether the Panama Canal expansion will alter shipping lines' voyage patterns and bring them to the east coast of South America," he told *P&H*. "Santos will still do great trade with China, Brazil's most important trade destination, although it could prove more economic if ships from the Far East travel around South Africa rather than via the Panama Canal, which is an acceptable alternative in my opinion," he said. PH

CASE STUDY 3

Working on it – Port of Tanjung Priok

Located in the north of Jakarta, the Port of Tanjung Priok (PTP) is Indonesia's main maritime gateway, but it suffers from poor access and berth congestion and it receives few mainline calls on the important east–west trade route because of depth and capacity constraints.

In an effort to capture some of the transhipment volumes enjoyed by Singapore, to boost capacity and to elevate PTP's status to that of a major embarkation port in Asia, state-run Indonesia Port Corporation (Pelindo II) has begun work on a $1.9Bn plan for expansion, including construction of three container terminals. When the project is completed in 2017, Tanjung Priok's capacity will double from the current 5.8M teu a year.


Photo: Pelindo II

The first of the so-called Kalibaru terminals is scheduled to open in 2014 and the initial construction stage will see the port dredged to 16m to enable access by the biggest ULCSs currently in use, but in future it is expected to go as deep as 20m.

"Our target is for the port to accommodate the largest ships to reduce logistical costs and improve efficiency," said Pelindo II CEO Richard Joost Lino.

That's starting to attract the attention of major port operators, including Philippines-based International Container Terminal Services (ICTSI), which moved forward its plans to operate and manage a terminal in Tanjung Priok. ICTSI's subsidiary, PT Karwell Indonesia, has inked a joint operation agreement with private port operator PT PBM Adipurusa that allows the latter to use Karwell's loading and unloading equipment.

"The arrangement forms part of the initial steps aimed at establishing a proposed joint venture between PT Karwell and PT PBM Adipurusa to take over the operation and management of Adipurusa terminal at the Port of Tanjung Priok," an ICTSI spokesman stated.

In addition, Hutchison Port Holdings (HPH) has plans to invest $100M expanding its two container terminals in the Indonesian port. Both terminals are joint ventures with Pelindo II:

- Jakarta International Container Terminal (JICT), the largest container terminal in Indonesia, which handled 2.3M teu in 2011
- Koja Terminal, which is next to JICT and handled 800,000teu in 2011.

The project will see 32ha of land developed and include an automated gate entry facility, an HPH spokesman told *Ports & Harbors*. PH

Rotterdam starts its Big Plug-In

Rotterdam is the latest port to join the plug-in revolution and has announced two initiatives to provide onshore power supply (OPS) for its cross-Channel ferries and inland barges. Ultimately, it aims to persuade all visiting vessels to use mains electricity.

Stena Line has activated two shore-to-ship connections at its Hook of Holland terminal opposite Europort in Rotterdam. The ferry company uses the terminal for its daily sailings to and from Harwich, in eastern England.

Photo: Stena Line

Dutch infrastucture and environment minister Melanie Schultz van Haegen switches on the onshore power supply at Stena's Hook of Holland terminal

The ferries remain in port for six hours on average and need electricity for heating, ventilation, cooling and galley equipment. Power is normally produced by onboard diesel generators, which disturb the local community with noise, vibration and emissions.

As part of its plan to cut the fleet's fuel consumption, Stena Line has invested in the complete electrical infrastructure needed to power two vessels simultaneously, supplied by ABB.

The shore-to-ship equipment has helped reduce emissions by 98% and substantially cut noise and vibration in ports. Pim de Lange, managing director of Stena Line Netherlands, explained: "It is important for us to improve air quality as much as possible and find a sustainable solution for local residents, which is why we decided to install shore-to-ship power."

Rieki Sliep was one local resident to benefit: "I live in Hoek van Holland, near to the Stena Line terminal, which is behind my house. In the past, when ships were docked we would usually hear a lot of noise and feel the vibrations; now it is nice and quiet."

Rotterdam has also started to plug in the inland barges that ply northern Europe's waterways. About 130,000 such vessels load and unload inthe port each year.

GE Energy is responsible for the barge OPS project and more than 100 OPS connections have been installed in the Maashaven area of the port. They are supplied from 22 stainless-steel 'harbor enclosures' that provide secure power supplies in dockside locations and are equipped with meters that can be read remotely.

The Port of Rotterdam aims to encourage all vessels to use OPS as their main source of power while at dock. When completed, the project will offer connections for up to 5,000 vessels, supplied from about 800 dockside units.

"Onshore power is a cleaner and more efficient option than running engines or diesel generators. However, bringing power aboard vessels in one of the busiest ports in the world presents a significant challenge and one that we have worked closely with the port authority to meet," said Todd Johnstone, CEO of GE Energy's Industrial Solutions business for Europe, the Middle East and Africa.

Meanwhile, the international standard for the IEC/ISO/IEEE, *Utility connections in port, Part 1: High voltage shore connection systems*, has been published. It applies to the design, installation and testing of HVSC systems and relates to shore distribution systems, shore-to-ship connection and interface equipment, ship distribution systems and control, monitoring, interlocking and power management systems, among other topics. For details, see: http://webstore.iec.ch/Webstore/webstore.nsf/ArtNum_PK/46614?OpenDocument&ml.

EC launches port consultation

As a prelude to a comprehensive review of European port policy in September, the European Commission launched a wide-ranging consultation on port service quality, efficiency and transparency. The survey was carried out by consulting groups PriceWaterhouseCoopers and NEA.

Participants had until 24 August to complete the questionnaire, the results of which will be discussed at a port policy conference to be organised by the EC on 25 and 26 September under the title 'Unlocking the Growth Potential'.

The EC announced that it will present proposals at that conference for dealing with the challenges facing EU ports. It argues that the performance gap between ports in different parts of the EU is increasing and will continue to increase in the absence of a level regulatory playing field.

The European Sea Ports Organisation welcomed the survey and encouraged its members to participate so that an accurate picture of the situation in EU ports can be formed.

In October, another EC survey will be sent to stakeholders in which possible policy options will be presented for consideration. These could range from guidance and support measures to infringement procedures and full-blown legislation. Expected key topics include concessions, financing and transparency, public service monopolies and dock labour.

Notable numbers

30% ...of ships calling at Los Angeles that are expected to qualify for Environmental Index incentives

4 number of years' delay before the contract to dredge for India's JNPT container terminals could finally be agreed

Miami gets ready for Panama expansion

Port Miami, with its state, federal and private-sector partners, has announced an investment of more than $1Bn in major infrastructure improvements to support future growth of its cargo business. The port already has its permits and funding for all projects.

As the US port closest to Panama, Miami expects to benefit from greater Asian trade so must be able to receive 8,000–13,000teu vessels, a port spokesman told *P&H*. "Along with shifting trade routes, the US population has also experienced a dramatic shift, and the state of Florida is expected to surpass New York as the third most populated state in 2013. That's a huge consumer base to serve."

Improvements at Port Miami consist of three major projects. The US Army Corps of Engineers will dredge the harbor from 42ft to 50ft (13m to 15m). USACE will begin dredging in early 2013. Port Miami already has the necessary dredging permits and funding and aims to complete the deepening by 2015, when the expanded canal will be fully operational.

Photo: Port Miami

Miami is dredging to 15m to accommodate larger vessels

The Florida East Coast Railway is also creating an on-dock rail connection to reduce transport costs and carbon emissions within the port. The project will be completed in two phases before the bigger Panama Canal opens.

"Given the margin pressures that importers are facing in today's economic environment, Port Miami and Florida East Coast Railway will be in position to significantly reduce transportation expense, inventory investment and carbon emissions," Kevin Lynskey, assistant director for Port Miami, told *Ports & Harbors*. "Importers from Asia will be able to move their goods faster and with much less expense through Port Miami and Florida East Coast Railway into the southeast United States."

The port is also building an access tunnel from the port to Florida's interstate road system underneath Biscayne Bay. This will provide quicker access for port-bound trucks and reduce traffic snarls in downtown Miami. The tunnel is scheduled for completion in early 2014.

Next year, Miami will also install four all-electric, super post-Panamax cranes in anticipation of the arrival of larger vessels. Currently, the port has nine cranes, two of which are of super post-Panamax size. The port authority is also in the process of strengthening its cargo bulkhead to accommodate the 15m dredging depth and the four bigger cranes.

ICS warning over 'green tariff'

IAPH has added its weight to a call by the International Chamber of Shipping to avoid asking shipping to fund environmental initiatives.

ICS chairman Masamichi Mooroka has written to International Monetary Fund chief Christine Lagarde in response to her reported comments that fuel charges on shipping and aviation could raise a quarter of the money sent by developed countries to the UN's Green Climate Fund.

ICS challenges assumptions apparently made by the IMF. Mooroka notes that Lagarde has been quoted as saying that "charges on international aviation and maritime emissions would raise about a quarter of the $100Bn needed for climate adaptation and mitigation in developing countries – resources that developed countries have committed to mobilize by 2020".

The ICS chairman commented: "Market-based measures are very controversial and most shipowners believe, given the severely depressed state of global shipping markets, that now is certainly not the time to impose an additional major cost on international shipping."

Photo: Florida East Coast Railway

A new railway will improve the movement of cargo from Miami

He explained that, nonetheless, ICS and its member associations agree that if all governments so decide then owners would in principle have no objection to contributing, at some point in the future, to the Green Climate Fund, or any similar mechanism the IMO might set up – provided that such money is genuinely used for climate change adaptation or mitigation and that the same charges apply to all ships internationally regardless of flag.

1,219 length in metres of the twin-bore tunnel being dug under Miami's Biscayne Bay

25 number of leases and provisional deals so far signed with prospective tenant companies at Abu Dhabi's new Kizad industrial zone

ICS: 'Stagger BWTS rollout'

Installation of ballast water treatment systems on existing ships should be staggered to avoid chaos when the 2004 convention is finally ratified, the International Chamber of Shipping (ICS) has advised the IMO.

The Ballast Water Treatment Convention is still awaiting signatures that represent 35% of the world's fleet, the ICS noted in its submission to the IMO.

The IMO has allowed one moratorium that pushed the date back by a year, but it has not agreed to any more changes in the rolling programme required under the convention. Most existing ships will have to fit the systems in a very short timespan, rather than staggered over a longer period, the ICS pointed out.

The chamber also expressed concern about the availability of suitable ballast treatment equipment and queried the robustness of the approved systems.

The ICS requested that the IMO Marine Environment Protection Committee, which meets in October, should urgently address the issue of fixed dates for retrofitting up to 60,000 ships with expensive new equipment. It proposed that the IMO modify the requirements to obviate the need for existing ships to be retrofitted with treatment equipment until their next full special survey.

This, it said, would extend the present two- to three-year implementation period to five years. The ICS also proposed that ships approaching their fourth special survey should be exempted from the equipment requirements.

Separately, the ICS requested that IMO modify its draft guidelines for approval of equipment, and for ballast water sampling and analysis that will be used by port state control. The aim would be to make these closer to the rules that were recently adopted by the USA and which will not be changed.


Photo: IHS Fairplay

Lashing and stowing are more important than weight declaration, says ESC

ESC criticises box safety strategy

The European Shippers Council has criticised the maritime industry's call for stricter IMO regulation on the declaration of container weights on the grounds that it is the wrong remedy for container transport safety issues.

ESC's concern is that the discussion is focused on a relatively small risk factor, namely misdeclared container weights. It believes that instead more attention should be paid to important risk factors such as the lack of set procedures for lashing, ship maintenance and stowing.

In a statement, European shippers also expressed doubts that the IMO is the right institution to regulate container safety issues. An ESC spokesman said the council was working together with labour unions and other parties in the maritime industry to update the voluntary UNECE/ILO guidelines for container stuffing as soon as possible.

According to ESC, it is UNECE/ILO that should be taking the lead in improving the quality of container stuffing and prescribe legislation on the issue. Poor stuffing is a problem for all modes of transport and not just the maritime industry.

The ESC pointed out that SOLAS regulations already carry a requirement that shippers should declare the weight of their containers correctly. Adding further regulations will not solve the issue of misdeclared weights, it believes. "We admit that misdeclaration of weights needs our attention but oppose the idea that it's the biggest threat to the safety of workers in the supply chain. If the sector is truly looking for a safer supply chain, all parties should take their responsibility," an ESC spokesman commented.

The IMO announced that it has agreed amendments to the International Convention for Safe Containers 1972 to include new paragraphs in Regulation 1 Safety Approval Plate that specify the validity of, and elements to be included in, approved container examination programmes. The revisions came into force on 1 July.

It has also added a new Annex III, Control and Verification, which provides specific control measures to enable authorised officers to assess the integrity of structurally sensitive components of containers and help them decide whether a container is safe to continue in transportation.

Before it entered its mid-year recess, the IMO also passed a number of other amendments, all of which came into force on 1 July. These included amendments to the international SOLAS Convention making mandatory the International Code for the Application of Fire Test Procedures (2010 FTP Code). The code enhances the fire safety provisions on board all ships.

The FTP Code also includes annexes on products that may be installed without testing and/or approval and on fire protection materials and required approval test methods.

At the same time, the IMO announced a new Chapter 9 of the International Code for Fire Safety Systems (FSS Code), related to fixed fire detection and fire alarm systems.

Other changes to IMO treaties included amendments to SOLAS regulation V/18 to require annual testing of automatic identification systems (AIS) and amendments to SOLAS Regulation V/23 on pilot transfer arrangements, to update and to improve safety aspects of pilot transfer.

Notable numbers

66% fall in SOx emissions at Med ports since EU ship emission regulations were introduced in January 2010

24 length in years of Dole's new fruit trading lease at the US Port of San Diego

Asian owners want UN to tackle piracy

The employment of armed guards aboard merchant ships is not a long-term, sustainable solution against Somali pirates, the Asian Shipowners' Forum said in July. The group urged the United Nations to propose a long-term solution to piracy.

"It is vitally important for the UN to act swiftly to deal with this Somali piracy menace," said ASF chairman Patrick Phoon. ASF had proposed that the UN mount a task force from a base either on land or afloat, he revealed.

Nordin bin Mat Yusoff, chairman of the Federation of ASEAN Shipowners' Associations, added: "As of July 2012, at least 11 vessels with about 174 seafarers are still held captive by Somali pirates. The international community should not ignore this but make it a top priority to rescue these seafarers on humanitarian grounds."

Incidents of piracy and armed robberies were generally down in Asia during the first half of this year compared with the same period in 2011, the ReCAAP Information Sharing Centre stated.

Photo: Royal Navy

British forces search a suspect vessel in the Indian Ocean

A total of 62 incidents – 57 of which were actual while five were attempted – were reported in the January-June period, down 29% from the total number of incidents in the same period last year.

Pirates were responsible for the death of at least one worker in an attack aboard an oil company's vessel in the Niger Delta off west Africa in late July.

Local military officials say the oil worker drowned trying to escape the pirates who had boarded the vessel, which was owned by Italian petroleum company Agip. Two other oil workers were reported missing after the attack.

The Agip vessel, *Terra*, was reportedly boarded and taken over by gunmen while *en route* to the company's Clough Creek flow station. A spokesman for Agip said the man who drowned was a Nigerian national.

Meanwhile, the IMB Piracy Report has suggested that in the main theatre of operations in the Indian Ocean, pirate activity has dropped considerably through a combination of monsoon conditions and the employment of onboard armed guards. The pirates' sphere of operations is increasingly being squeezed, with these developments and a concerted effort by EU Navfor to restrict pirate activity on land. In addition, the authorities in Puntland and Somaliland have stepped up their efforts to attack, prosecute and jail pirates operating in their territory.

Additionally, St Kitts & Nevis has become the latest of five flag state signatories to the Washington Declaration, which condemns acts of violence against seafarers – joining Bahamas, Liberia, Marshall Islands and Panama. The declaration recognises that violence against crew through piracy and armed robbery is largely under-reported and requests signatory states to commit to better documentation of incidents.

The move underpins initiatives by St Kitts & Nevis International Ship Registry (SKANReg), which has improved its port state control performance and is preparing for the Voluntary IMO Member State Audit Scheme.

Ship-to-ship loading in Amsterdam

The Port of Amsterdam has created two mooring facilities in the Afrikahaven for ship-to-ship loading and unloading of seagoing vessels. Since a new Vopak tank terminal started operations in 2011, space and manouevrability in the harbor basin has become restricted.

The port authority authorised the creation of eight dolphins opposite the tank terminal, creating two mooring facilities for seagoing vessels of between 120m and 300m in length and with a maximum draught of 14m. Two ships can be operational side by side simultaneously at both mooring facilities for ship-to-ship loading and unloading. Additionally, on the landward side of the mooring facilities cargoes can be transhipped from inland barges to seagoing vessels and *vice versa*.

Photo: Port of Amsterdam

Mooring dolphins in Amsterdam's Afrikahaven

These new mooring facilities have greatly improved manoeuvrability in Afrikahaven and mooring is reported to be faster and more secure, reducing the turnaround time of seagoing vessels, says the port, adding: "Allowing ship-to-ship operations between seagoing and inland vessels further improves the flexibility of port operations".

This new facility is expected to stimulate an additional increase in the throughput of oil products in the Port of Amsterdam and, the port suggests, will provide traders with an even better opportunity to expand their businesses.

100Bn estimated amount in dollars needed for climate adaptation and mitigation in developing countries by 2020

60% estimated percentage of Iraqi imports routed through neighbouring countries

Ship index clears the air in LA


Photo: Chris Mackey

Evergreen has joined the Environmental Ship Index programme

The Environmental Ship Index (ESI) received a boost in the USA as six carriers signed up to the clean shipping scheme at the Port of Los Angeles (PoLA). ESI is in operation at 14 European ports, but LA's initiative is the first of its kind in North America and the Pacific Rim. The scheme, developed through IAPH's World Ports Climate Initiative, rewards ocean carriers that bring their newest and cleanest vessels to the port.

Evergreen, Hamburg Süd North America, Hapag-Lloyd, Maersk Line, NYK and Yang Ming have registered for PoLA's ESI programme and will start receiving incentives later this year.

"We applaud these early adopters of the ESI programme and encourage not only other carriers to participate but also other ports to join this global port programme," said PoLA executive director and IAPH president Geraldine Knatz. "Growing participation among ports worldwide will increase the level of incentives available to ship operators that invest in and deploy the cleanest, most efficient and environmentally friendly fleets."

Michael Behrendt, chairman of the executive board of Hapag-Lloyd., commented: "Cutting CO_2 emissions has been one of our most pressing and high-priority environmental targets for many years and one in which we can point to a number of successes."

The web-based index offers immediate and significant clean air benefits by rewarding vessel operators for voluntary engine, fuel and technology tweaks that reduce their ships' emissions beyond the regulatory environmental standards set by the IMO. In Los Angeles, the initiative conforms to the San Pedro Bay Clean Ports Air Action Plan, which sets specific bay-wide targets for near-term pollution reduction through 2014 and long-term objectives through 2023.

Operators whose vessels call at the port can earn an incentive of between $250 and $5,250 per ship call by meeting one or all of the following requirements:

- Scoring 30 or more ESI points based on engine specifications and emissions certification, use of low-sulphur fuel, plug-in-ready onboard shore power technology, and a ship energy efficiency management plan.
- Deploying ships with a Tier II or Tier III engine
- Taking part in a programme to test and improve vessel emission reduction technology.

Participating ships will receive incentive payments each quarter, the first of which will be made in October. Up to 30% of the ships calling at the port are expected to qualify for the ESI incentives.

ESI also incentivises vessel operators to get ahead of stricter environmental requirements before they become mandatory. On 1 January 2014, clean air regulations will require ships operating within 24nm of the California coastline to use fuel with a sulphur content of 0.1% or less.

In January 2015, the same standard will take effect throughout the new North American Emissions Control Area (*see pages 23-26*). Once the ECA comes into effect, PoLA will encourage ocean carriers to continue to reduce vessel emissions by raising the bar to qualify for its ESI incentives.

The ports of Long Beach and Los Angeles have also recognised six companies with Clean Air Action Plan Air Quality Awards for their exemplary efforts to reduce air pollution from local maritime and goods movement operations.

"We're delighted to honour these companies for taking the time and effort to successfully reduce their environmental impacts through leadership and quick action. The companies operating at the two ports are working hard to be good neighbours by taking extra steps to improve air quality in the harbor area and southern California," said Port of Long Beach executive director J Christopher Lytle.

More details about ESI can be found at http://esi.wpci.nl.

Agents support container verification

International ship agents and brokers federation FONASBA has backed government and industry efforts to ensure that shipping containers for export are accurately weighed.

The initiative – which is being promoted by the World Shipping Council in concert with IAPH, BIMCO, the International Chamber of Shipping and the International Transport Workers Federation – will be launched at IMO's Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC 17) in September (IAPH survey, see p42).

An IMO-commissioned paper revealed that in recent accidents, some boxes proved to be up to 10 tonnes heavier than their manifest weight. Consequences included stack collapse, capsize and even vessel break-up, while onshore, under-declaration has led to crane, straddle carrier and forklift failures, plus stack collapse, overturned trucks and damage to trains, roads and bridges.

With ship agents playing a key role in the movement of cargo to and from the vessel and port, issues arising from the handling of containers of unverified weight, especially those which are under-declared, can affect agents anywhere along the transport chain, FONASBA said in a statement.

Notable numbers

98% estimated reduction in ship emissions achieved by using onshore energy at berths

14 number of European ports where Environmental Ship Index incentives are applied

Great prizes for winning entries


Photo: Shutterstock

IAPH competitions give members the chance to promote their ports at next year's Los Angeles Conference. From 2013, two awards – the Port Communications Award and Port Environment Award – have been newly added to the current three awards. The deadline for entries to all competitions is 30 November 2012. They can be sent in via email in Microsoft Word format to the IAPH Secretariat at info@iaphworldports.org.

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 – Akiyama Award and the Los Angeles Open Award.

Prizes for the overall winners include $1,000, plus an invitation to the award ceremony at the 28th IAPH World Ports Conference to be held in Los Angeles in May 2013.

The winner of Akiyama award will receive a round-trip air ticket, accommodation in Los Angeles and free entry into the conference, while the winner of Los Angeles Open Award will be given a free entry into the conference.

A merit prize of $500 for both categories may be also 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. IAPH members are invited to submit entries for the Port Communication Awards, Port Environment Awards and IT Awards 2013.

The Port Communication Award is given to IAPH member ports that demonstrate a case or project that has been successfully planned and implemented in the past two years. It may be your innovative marketing or community relations strategy, for example.

The Port Environment Award is given to IAPH member ports that demonstrate an excellent case study in environmental management, protection or sustainability that has been successfully planned and implemented in 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 winners.

All entries should be submitted in English and follow each condition described in the www.iaphworldports.org/awards2013.aspx.

Schedule for submission:

- 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.

Membership notes

The IAPH Secretariat is pleased to announce that the following have joined the association

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Representative	Ken Fredrickson, president
IAPH co-ordinator	Michele Nanna, VP sales and marketing
Nature of business activities	engineering and construction

Container survey available online

In January 2012, IAPH's Committee on Port Safety and Security conducted a survey of its member ports to determine what measures are being taken to address the critical issue of overweight or incorrectly declared containers. Among other things, the survey included the availability of facilities for weighing containers and the existence of verified weight certificates. Seventy-four responses from 25 countries were received and analysed, and the results submitted to the committee meeting at May's Jerusalem Mid-term Conference.

The resulting survey report is available on the IAPH website – www.iaphworldports.org.

Before conducting this survey, IAPH adopted a resolution on 'The Safety of Containers in the Supply Chain' at its Busan conference in May 2011 urging the International Maritime Organization to require shippers to document cargo correctly and for actual weighing to take place at the point of origin.

In December 2011, together with the World Shipping Council, the International Chamber of Shipping and BIMCO, IAPH issued a press release encouraging the IMO to amend its rule to require shippers to declare containers' actual weights before loading.

Find the resolution at: www.iaphworldports.org/Portals/100/PDF/BusanWS/BusanResolutions.pdf.

LA promotes conference

At the invitation of the Japan Foundation for IAPH, the IAPH conference vice-president Arley Baker, senior director communications at the Port of Los Angeles, delivered a keynote speech at the 25th IAPH Japan Seminar, which the foundation organised in Tokyo, Japan, on 18 July.

In front of some 70 representatives of Japanese government ministries and agencies, port authorities, port experts and others attending this major annual event in Japanese IAPH circles, Baker updated the audience on recent areas of development at the Port of Los Angeles, such as its Clear Air Action Program, job creation initiative, and public waterfront investment and redevelopment.

Baker took the opportunity to promote the IAPH Los Angeles Conference 2013 by introducing the conference's confirmed keynote speakers.

Visitors to Tokyo HQ

On 12 July, life supporting member Soka Kikuchi visited IAPH head office together with Captain Robert Gilchrist, director of Safests, to discuss and exchange views on recent maritime topics with Secretary-General Naruse and Under-Secretary Hisayoshi Tokui.

Photo: IAPH

From left: Soka Kikuchi, Robert Gilchrist, Susumu Naruse, Hisayoshi Tokui

Dates for your diary

A selection of forthcoming maritime courses and conferences

October

1–3	TOC Container Supply Chain: Middle East* – Dubai, UAE *20% discount for IAPH members *www.tocevents-me.com*
1–3	14th IAIN Congress 2012 – Cairo, Egypt *www.iaincongress2012.org*
2–4	TRANSTEC 2012 – St Petersburg, Russia *www.transtec-neva.com*
3–5	GreenPort Congress – Marseille, France *www.greenport.com/congress*
9–10	6th TPM Asia – Shenzhen, China *www.tpm-asia.com*
21–25	AAPA Annual Convention (one day for IAPH Americas Regional Meeting) – Mobile, Alabama, USA *www.aapa-ports.org*
22–25	Dredging 2012 – San Diego, USA *http://dredging12.pianc.us*
22–26	Seminar on Dredging and Reclamation – Singapore *www.iadc-dredging.com*
24–25	1st Black Sea Ports and Shipping – Odessa, Ukraine *www.transportevents.com*
29–1 Nov	5th Vietnam Ports and Logistics – Ho Chi Minh City, Vietnam *www.vietnamportslogistics.com*

November

5–16	Seminar on Port Engineering – Antwerp, Belgium *www.haven.antwerpen.be/apec*
8–9	4th International Symposium on Ship Operations, Management and Economics – Athens, Greece *www.sname.org/greeksection/home*
14–15	Transport Security Expo* – London, UK *20% discount for IAPH members (discount code TRS20) *www.transec.com*
19–30	Port Management and Operations Course – Singapore *www.psa-institute.com*
20–21	8th Trans Middle East – Bahrain *www.transportevents.com*
20–22	FLOODrisk2012 – Rotterdam, Netherlands *www.floodrisk2012.net*

2013

March

18–20	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: Virginia Port Authority

Investment
in infrastructure pays off

A key issue that this industry faces is continued investment and reinvestment in the critical infrastructure that keeps this industry moving, keeps goods on the shelves and helps to sustain economies, writes ***Jerry Austin Bridges***, executive director of Virginia Port Authority

" Investments focused on improving international supply chains to existing and emerging markets will pay significant dividends "

As an IAPH Executive Committee member, I do my best to impart the importance of the investment issue, the relevance of IAPH, the importance of strength in numbers and ultimately speaking with a unified voice from a combined perspective of experience and education.

In the increasingly trade-oriented economy of this new millennium, infrastructure investments focused on improving the international supply chains to existing and emerging markets will pay significant dividends.

The good news for government at all levels is that private enterprise is willing to partner to make critical projects happen. Whether it is railways, roads, port infrastructure or manufacturing and distribution centres, the market has proved its willingness to make major investments to facilitate the movement of maritime freight.

This year, for example, the seven largest railway companies operating in the United States have committed to $13Bn in capital investments. What better testimony can be offered regarding the viability of freight infrastructure investment?

The question we have to ask is: will governments, both national and local, make similar investments in infrastructure and, if they cannot, will there be an effort to ease the bureaucracy that often governs, and slows, such projects?

In general, infrastructure investments benefit everyone: construction workers, the direct user, the indirect user, the local taxing authority and ultimately the consumer who gets goods faster and more cheaply than ever. Such investment also puts countries on the business map and can build the pro-business or pro-trade reputation, which in this economy is what we all want.

These are interesting times, to say the least, and we need to be absolutely clear about ensuring the health of the critical infrastructure needed to support this industry and the economic development that goes with it. P&H


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