March/April 2013 Vol 58 No 2

PORTS HARBORS

Official Journal of the International Association of Ports and Harbors



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container handling and port equipment



D3163

Baoli CPCD





Fantuzzi CS45KM Year of manufacture: 2003 Price: 139,000 EUR



D3131 Kalmar DRF450-70C5XS Year of manufacture: 2005 Price: 195,000 EUR



Fantuzzi FDC350RR Year of manufacture: 2001 Price: 130.000 EUR



Price: 99 000 FUB

D3244

Kalmar DRF450-65S5X

Year of manufacture: 2005

Price: 170,000 EUR

D3219

D3192 Fantuzzi FDC160 Year of manufacture: 2006 Year of manufacture: 2000 Price: 55.000 EUR

D3243

Kalmar DRF450-65S5X

Year of manufacture: 2005

Price: 170,000 EUR

D3232

Kalmar DCE160-12

Price: 169,000 EUR



DK032 Hyster RS4636CH Year of manufacture: 2007 Price: 199.000 EUR



D3248 Kalmar DRF420-60-S5 Year of manufacture: 2005 Price: 165,000 EUR



D3247

Kalmar DRF450-70S5Xs

Year of manufacture: 2007

Price: 220.000 EUR

D3249 Kalmar DRD420-60-S5 Price: 115,000 EUR

E4644

Kalmar ECD90-6L

Year of manufacture: 2001

Price: 44,000 EUR

D3174

Svetruck 2812045

Price: 79.000 EUR





D3269 Linde C4535-TL Year of manufacture: 2002 Price: 120,000 EUR



D3272 Svetruck 15120-35 Price: 25.000 EUR

DK006

Linde C4535TL4 Year of manufacture: 2000 Price: 100,000 EUR



D3255 Svetruck 13.6-60-30 Year of manufacture: 1995 Year of manufacture: 1980 Year of manufacture: 1996 Price: 39.000 EUR





D3268 **DK008** Svetruck 1260-30 Svetruck ECS6H Year of manufacture: 2005 Price: 45.000 EUR Price: 75.000 EUR



Year of manufacture: 2013 Year of manufacture: 1997

PPM FCH45 Year of manufacture: 1997 Price: 83,000 EUR



D3177

Kalmar DCD70-35E4

Price: 45,000 EUR

DK017 SMV SC108TB6 Year of manufacture: 2007 Price: 100.000 EUR



D2817 Valmet TD1812 Year of manufacture: 2006 Year of manufacture: 1990 Price: 62.000 EUR

Pics, details and video: www.hinrichs-forklifts.com



Kalmar DC845RS5 Price: 69,000 EUR

D3223

Kalmar DRF450-65A5X

Year of manufacture: 2009

Price: 270,000 EUR







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Investment priorities in the Americas... a new public-private scheme is announced in Brazil, and in the US ports hold out for federal cash

Photo: Shutterstock/ H Kidd

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The big issues

SG Naruse considers the major challenges ports will face in 2013, many of which are on the agenda for discussion at IAPH's bienniel conference in Los Angeles in May



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

> In its World Economic Outlook published in January, IMF announced that "global growth is projected to increase during 2013, as the factors underlying soft global activity are expected to subside."They forecast the 2013 global economic growth rate as 3.5%, slightly higher than that of 2012. As always it depends on the region: the Euro area is expected to see to negative growth rate at -0.2%, with some countries going into recession; on the other hand emerging economies will continue to be robust and are expected to grow faster than in 2012. It is also forecasted that world trade will grow by 3.8%, which may not be enough to solve the overcapacity of international shipping. In this tight economic environment, the port industry may be forced to review their operations to shorten turnaround time in ports, and also find ways to cut costs.

> Piracy is still a big issue affecting the maritime industry, although the number of attempted and successful attacks against ships

• Ports may be forced to cut their costs

by Somalia-based pirates did decrease in 2012. This is due to the presence of naval forces and implementation of self-protection measures on board merchant ships. IMO is now preparing guidelines on how to handle merchant ships sailing with armed guards when

they call at ports. Piracy and the countermeasures to combat it will be highlighted at the LA conference.

Also at IMO, guidelines on the safety of miss-declared containers are to be discussed and hopefully finalised towards the end of the year. It is also expected that Ballast Water Convention will be brought into effect. IAPH needs to be proactive on these issues and make contributions that support port authorities.

The LA conference will see some important decisions being made, including the approval of the new line-up of IAPH officers and its budget for the next two years. Port of Los Angeles has put together a programme of working sessions, which will include a variety of up-to-date presentations by top-notch experts and professionals. We hope that the IAPH technical committees will generate vigorous discussion and debate as we move our work programmes forward. I feel sure this conference will be extremely interesting, relevant and enjoyable. The web-site for registration and hotel reservation is ready, so why not register today. PH

Port updates

KPA APPOINTS CHAIRMAN

Shri R P S Kahlon is the new chairman of Kolkata Port Trust as of 2 January. Kahlon was previously principal secretary of the Environment Department for the Government of West Bengal. He has held other posts within this government, including principal secretary of the Transport, Department of Fisheries and the Department of Sports & Youth Services. He has a masters degree in English Literature.

KOUAMÉ IN CÔTE D'IVOIRE

Jean-Baptiste Kouamé Kouamé has been appointed new president of the Council of Administration of the Port Authority of San Pedro in Côte d'Ivoire. He was elected to the post on 7 January. The council consists of eight members representing different areas of government, including transport, economy and customs.

LNG IN CHINA

Beijing has given petroleum and petrochemical company Sinopec the green light to start work on an LNG import terminal in Lianyungang's port in Jiangsu province, *IHS World Markets Energy* reported on 11 January. China Petrochemical Corp will begin work to prepare for front-end engineering and design in December this year; the Energy Bureau of Jiangsu local authority reiterated its approval in the past few days.

ROTTERDAM REBRAND

The Port of Rotterdam Authority has launched a new campaign with one brand for the entire port area. 'Change Your Perspective' is intended to emphasise the added value of the port for existing and potential customers worldwide.

Hans Smits, CEO at Port of Rotterdam Authority, noted: "We want companies to continue to commit themselves to our port. We already have very good USPs [unique selling points], such as our location and depth, but what makes the Port of Rotterdam unique compared to other ports is its ability to look at industry and logistics in different ways each time."

New ways to work hinterland

Container terminals are expanding their capacity and new facilities are being built in anticipation of the nextgeneration mega-ships starting to make regular calls at the world's major ports. In particular, the future of ports in the Le Havre-Hamburg range will be determined by these expanding volumes, says Walter Kusters of logistics consultancy Ab-Ovo.

The hinterlands for these major ports need to rise to this challenge as well, he told *P&H*. "We believe that, within 5-10 years, the current business models for hinterland supply chains will be transformed into new models and new players will play a more dominant role than is currently the case."

These change scenarios are based on growth projections for the coming two decades. But the current lethargic growth in Europe offers logistics operators a brief window to think carefully about their hinterland strategy and the role they want to play in a future market of growing container volumes.

"With this in mind the time for action is now, in 2013. If you, as a logistics provider, terminal operator, forwarder, or carrier, want to become a major player you have to create a leading position in Europe now in order to become a leader in the near future. If not, you might only be a follower," Kusters warned.

There are a a few companies that offer versatile intermodal networking, but most inland terminals in north Europe are New hinterland players will try to move in on traditional regional intermodal operators
Walter Kusters

Senior consultant, Ab-Ovo

currently connected to a single major seaport. A few pioneers, such as Contargo Trimodal Network, are starting to develop more versatile intermodal networks. "During the rest of this decade we believe hinterland supply chains will become increasingly complex and competitive. New hinterland players will try to move in on traditional regional intermodal operators," he said.

These include deepsea terminals looking to make their landside operations more efficient, and deepsea carriers developing their own landside networks on the strength of their increased volumes.

"As an example, it is logical that Daily Maersk [a Maersk Line service between Asian and European ports], with its guaranteed lead times, will be extended into the hinterland in response to customer needs," Kusters predicted.

A new player likely to become increasingly familiar in hinterland development is the neutral organiser. This new

player has the skills to co-ordinate the diversity of inland terminals and transport operators in an efficient manner. Freight forwarders are already looking to develop their own hinterland networks with preferred barge, rail and truck operators. Their offering will be based on strong integrated IT processes, bundling of container streams, and a huge procurement power, as their current controlled volume is larger than the volume controlled by deepsea carriers.

Having a leading position is one thing, but logistics providers need to make a profit at the end of it all. "Even if you get your tactical and operational processes right, the biggest challenge is to achieve and control smart and flexible capacity allocations to make a profit on a daily basis. Whether you will remain profitable at the end of this decade will depend on the strategic decisions you make in 2013 about the role you intend to play in Europe's hinterland supply-chain market," Kusters said.

ABB to acquire APS Technology Group

ABB has agreed to acquire APS Technology Group (APS), it said in a statement on 12 February, and the transaction is expected to close in 1Q13. APS is a California-based company that develops and markets OCR (optical character recognition) software and automation technology solutions for the ports and terminals industry. "The acquisition will expand ABB's crane system portfolio to the container terminal market," ABB said in a statement. "The acquisition of APS is an important milestone for us to expand our terminal automation offering and provide our customers with added-value integrated solutions," said Heikki Soljama, head of ABB's Marine and Cranes business unit. APS's CEO and founder Russ Scheppmann said: "Joining ABB will enable us to extend our support and engineering capabilities as we expand into new geographic regions".

Ningbo invests in capacity

Ningbo, China, plans to invest more than 3Bn yuan (\$480M) to complete six 10,000+-tonne berths in 2013. After the berths' completion, the east China port will have additional cargo handling capacity of 16.35M tonnes/year, with additional box handling capacities estimated at 1.8M teu/year, the city's government said on 5 February.

Of the six berths, four were already under construction, including container terminals number three and five at Meishan port, the fifth phase of the Beilun box terminal, and the Qianhe environmentfriendly wharf. A total of five new projects will begin in 2013, including the Haiwan heavy-industry wharf and the Hangxin Baifeng cargo wharf.

The design and approval of another seven projects will be completed this year, including Port

of Meishan's multipurpose terminal. In addition, 13 existing terminals and berths will be rebuilt and strengthened.



Alongside at a container terminal at Ningbo Port, China

ICTSI exits Syrian port

Manila-based port operator International Container Terminal Services, Inc (ICTSI) said in January "escalating" war and civil disorders had forced it to shut down the operations of its subsidiary Tartous International Container Terminal (TICT). It further explained it had made its decision after talks failed with its Syrian partner Tartous Port General Co (TPGC).

"TICT's performance under the investment agreement was derailed by two major events: the eruption of political unrest and spiralling violence in Syria starting in 2011, and TPGC's refusal to acknowledge the existence of unforeseeable change in circumstance," said ICTSI.

Under the investment agreement between TICT and TPGC, wars and civil disorders constitute *force majeure*. "The situation in Syria has since then deteriorated into an open civil war. To continue operations in Syria under those circumstances was clearly unsustainable and dangerous to TICT personnel."

TICT has also encountered policy setbacks from the Syrian government's strategy on publicprivate partnership (PPP). There were delays in government deliverables under the contract. TICT and TPGC signed an investment agreement in March 2007 under a PPP structure for the operation and development of the container terminal.

ICTSI also pointed out that container volumes, which had already dropped by 4% in 2010, plummeted by 14% by the end of 2011, with far more severe falls in 2012."The current crisis has negatively affected volume growth and forecasts. At the time ICTSI submitted its bid in 2005, Syria's container market was growing and on track as projected."

However, with the civil war getting intense the drop in volumes "has set the Syrian container market back five to six years at 2006-07 levels". ICTSI senior VP for Europe and the Middle East region Hans-Ole Madsen disclosed to *P&H* that it handled 32,500teu in 2012, a 40% drop from the 54,160teu handled in 2011

Madsen said the company was hopeful that the ongoing crisis in Syria would be resolved to the benefit of the Syrian people. "Once stability returns to Syria, the rebuilding process will commence and hopefully this will mean opportunities for ICTSI."

Currently operating terminals in Rijeka, Croatia and Batumi, Georgia, the company "follows the developments within the port industry closely, and will positively evaluate opportunities as they come along," said Madsen.

ICTSI's investments in Syria make up just 0.4% of its total assets, but the termination will result in the write-off of \$1.2M in investments, it disclosed. ICTSI has made it clear that termination of its Syrian concession has no bearing whatsoever on all its other port concessions worldwide, all of which are experiencing steady growth and smooth operation. It also estimated to save \$4M annually in port fees and cash operating expenses from the termination of the agreement and write-off.

It is currently pursuing an active programme to acquire new terminal concessions in Africa, the Americas, Asia, Australia, Europe, the Indian Subcontinent, and the Middle East.

Port updates

CRANES SET SAIL TO UK

London Gateway's first three ZPMC cranes left China in January. The 138m-tall cranes have a reach of 25 rows across, said the port. London Gateway will start operations in 4Q this year, with five quay cranes and two rail-mounted gantry cranes provided by ZPMC, and 10 automatic stacking cranes and 18 straddle carriers from Cargotec, it said in a statement.

COAL IN CANADA

Port Metro Vancouver has approved a \$63M scheme to double coal loading capacity at Neptune Terminals. Capacity would rise from today's 9M tonnes/year to 18.5M tonnes, in response to the strong Asian demand for metallurgical coal. The terminals are situated on the north shore of Burrard Inlet; the complex is one of three major coal facilities on Canada's west coast.

INDIA SCRAPS TARIFFS

Delhi has decided to scrap tariffs for future projects at governmentowned ports. The government hopes to draw more foreign investment into India's port sector, which has been declining. Shipping minister G M Vasan confirmed the tariff move to reporters in Mumbai in January, adding that Delhi would also abolish India's port tariff regulator.

JAMAICA'S PORT PLANS

The government of Jamaica announced plans to turn the island into a logistics hub for the Americas. The details were unveiled at a meeting in Kingston on 18-19 January. Discussions have already started with overseas investors to develop areas of real estate to handle increased volumes of air and sea cargo, explained a statement.

LANDMARK FOR GENOA

On 21 December Port of Genoa exceeded 2M teu at PSA-operated Voltri Terminal Europa. The port projected an 11.5% increase in teu throughput in 2012. It said in a statement that four of its container terminals had experienced an increase in throughput.

Container volumes at ICTSI Syria

2007 – 28,700teu

2008 – 41,000teu

2009 – 62,300teu **2010** – 62,723teu

2011 – 54,160teu **2012** – 32,500teu

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Port updates

HAMBURG UPDATE

The correct website address for Hafen TV - Hamburg Port Authority's TV programme - is www.youtube. de/user/HamburgPortAuthority. This was incorrectly reported in P&H, Jan/ Feb issue. "Hafen TV takes a look behind the scenes of the region's biggest job engine and meets the managers and decision-makers in the port," the port authority enthused to P&H. It is broadcast every other Friday at 17.45, 18.45, and 19.45, central European time, on channel Hamburg 1. At the end of February the port authority also launched an English version of its website.

MILESTONES IN MALAYSIA

On 16 January Westports, at Port Klang Malaysia, reached a total of 50M teu since it handled its first container in 1996. In 2012 the terminal handled 6.9M teu. Also in 2012, the port overall handled 10M teu, with Westports attributing to 69% of that container figure. Development projects at Westports, including 300m of additional quayside to be completed this year and a land reclamation project, will take the terminal's capacity to 14M teu.

BHP LOOKS UP

New ship loaders installed at BHP Australian ports in the Pilbara area have lifted the miner's exports of iron ore by 10%, according to port statistics. BHP is reported to be increasing its production of iron ore, coking coal, petroleum, and copper, with Deutsche Bank estimating an overall 9% increase over the next two years.

MOORINGS IN CANADA

Cavotec is to supply specially adapted MoorMaster automated mooring units for installation at one of the Beauharnois locks in the St Lawrence Seaway in Canada. It is the fourth order from the St Lawrence Seaway Management Cooperation. Cavotec will assist with the on-site commissioning of the installation. Separately, it has also received an order for its MoorMaster technology from private ferry company TESO in the Netherlands.

Corpus Christi's port makes plans

Port of Corpus Christi, United States, is talking to Port of Tianjin, China, about the operation of its planned La Quinta Container Terminal. Plans to develop the 40ha (0.5km²) site were put on hold in 2012, but the port's executive director John LaRue told P&H he was still "moderately optimistic" that plans there would progress in 2013. "We're trying to interest [container operators at] the port of Tianiin in operating the terminal," LaRue revealed, noting that the terminal could eventually handle up to 500,000teu/year. "China has directed their

industries [to] go out and expand their reach, so we've talked to them, and we're going to talk to them some more." LaRue planned to travel to Tianjin in March to meet with port leaders and Chinese businesspeople.

This is one way that land acquisitions and business outreach is paying off for the port. It is also considering privatising its bulk terminal and may put it up for bid this year. "We're going through due diligence now. We'll go back to the port commission in the next four to six months with a recommendation on

We're trying to interest [container operators at] the port of Tianjin in operating the terminal

John LaRue

Executive director, Port of Corpus Christi

Johor predicted to overtake Singapore

Roland Berger Strategy Consultants predicts that ports in Johor, Malayisa, will overtake Singapore in terms of tonnage throughput by 2025, with liquid bulk as the mainstay in their cargo mix. This will be achieved by the region's rapid growth in liquid bulk, container, dry bulk and general cargo handling activities, the consultancy company believes.

There are a number of ports in the region, with Port of Tanjung Pelepas (PTP) in particular expected to record about 9% container handling growth by 2025 compared to expectations of slow – about 2% – growth in Singapore container terminals, noted Anthonie Versluis, managing partner of Roland Berger, at the Philippine Port & Shipping Conference in January. PTP wants to capture a higher transhipment share from Singapore, said Versluis. "It aims to increase current container handling capacity from 8.5M to 10M teu in 2012 or 2013, while its longterm masterplan envisages a capacity of 150M teu."

Meanwhile, Johor ports' liquid bulk handling activities, particularly in Pengerang Port, Tanjung

whether we should continue to operate it or privatise it and upgrade it," said LaRue.

The port has also attracted new business through its focus on multimodal transport. Chemical company Gruppo Mossi & Ghisolfi (M&G) plans to begin importing ethylene glycol when its facility is up and running at the port in 4Q15. It pointed to the port's relatively new access to three major railroads, a deep channel, and a "business-friendly" city as major factors in its decision to build its manufacturing plant there. "We wouldn't have been able to get the M&G business without road and rail access." LaRue asserted.

Separately, Cheniere Energy's LNG export facility on the La Quinta ship channel should be complete by 2018. Dredging of the channel to 13.7m will be completed this year, which will allow 145,000-160,000m³ product tankers to access the port.

The tankers will be able to navigate the Panama Canal when it is completed in 2015, opening up the export of natural gas to the Asian and South American markets. "That's going to help liberalise LNG and make it a more tradable commodity," a Cheniere spokesman told *P&H*.

Langsat, Johor Port, and Tanjung Bin, are expected to increase by about 22% against "slow to no growth, about 1%" in Singapore. Pengerang Port is currently undergoing development in line with its bid to become one of the largest oil and gas hubs in the region and in the world. Developments at Pengerang include the planned construction of a \$20Bn integrated petroleum hub by Petronas, while further plans at the port include an LNG terminal, three more refineries, and petrochemical complexes.

Tanjung Bin is also in its second phase of development of 912ha of land and 4.5km of shoreline/waterfront land to engage in processing and blending, tankage and terminaling, trading, and logistics of liquid bulk products, to be able to handle up to 10-15M tonnes of oil products.

Meanwhile, dry bulk handling at Johor Port is expected to experience "strong to steady growth" at approximately 6%, while no growth is expected in Singapore and only minor developments are expected in Batam and Bintan, Indonesia.

Deadline looms for Rio's pier

It is now impossible for the new \$155M pier for cruise ships at Rio de Janeiro's port to be finished in time for the 2014 World Cup and it may even miss the deadline for the 2016 Olympics. According to the port authority overseeing the projects, the Y-shaped pier designed to accommodate six ships that will, crucially, deliver 12,000 rooms will take 34 months to build. However, work has not started because of objections to the bidding process compounded by last-minute complaints about the pier's aesthetics.

In early 2013, the project was stalled as the organising committee tried to find a compromise to satisfy all parties. But even if an agreement is reached soon, the pier could not be finished before early 2016. The Olympics will be staged from 5-21 August. At present, cruise ships dock at Pier Mauá in front of Armazém 6, one of the port zone's historic warehouses, and it was thought the new pier would be located there. But the Dock Company of Rio de Janeiro moved the site to Armazém 2 and 3 due to the site's deeper water depth.

"If the pier was by Armazém warehouses 5 and 6, the navigation channel would have to be shifted by several yards," a dock company spokesman told newspaper *O Globo.* "With the pier in Armazém 2, the channel will be moved more easily and at a lower cost."

The main objection to the site comes from conservationists and architects who say the cruise ships will tower over the Museum of Tomorrow (Museu de Amanhã) – part of the redevelopment of the run-down port zone – and ruin its aesthetics.

"The location is wrong," Vicente Giffoni, president of the city's architectural trade body, told the *Rio Times*. "The dock company made the decision based only on technical data."

Also complicating the situation is the \$4.6Bn Porto Maravilha (Wonderful Port) project, which is regenerating a once run-down area. With public access ways, an art museum, tunnels, and other projects under way, the public is taking an interest in the port zone in a way it never did before.

Olympic organisers are relying on the new pier to provide much needed accommodation. The committee has estimated that Rio will require 45,000 new beds, twice the current number available, and the cruise ships would provide more than a quarter of those.

Cash & Cargo

ALGECIRAS NUMBERS UP

Port of Algeciras container terminals handled 4.1M teu in 2012, with total throughput reaching 89M tonnes. This represents an 8% increase on 2011 figures. Coal, steel, building materials, and food products saw the most growth. Passenger figures were at 4.8M, with 22.7M tonnes of liquid bulk cargo, 2M tonnes of solid bulk, and 58M tonnes of general cargo handled in 2012.

LA UP AND DOWN

Port of Los Angeles November 2012 results revealed a 16% drop in cargo volume. The decrease was due in part to a vessel service shift from Los Angeles to the Port of Long Beach, and to cargo delays related to the first several days of the labour dispute, the port explained in a statement. Year-todate traffic was up 2.7%.



Dredging

WIND FARM INSTALLATION

Van Oord has won an engineering, procurement and construction contract from Eneco-Mitsubishi Corporation for the Luchterduinen offshore wind park, which will be situated 23km off the Dutch coast. It will be responsible for the monopiles, electrical infrastructure, offshore transformer station, and the installation of the turbines. Newbuilding *Aeolus* – due to become operational this year – will install the 43 wind turbines.

YANGTZE INVESTMENT

China will invest Rmb4Bn (\$642M) over the next three to five years deepening Jingjiang reach, the middle section of the Yangtze River, state-run Changjiang Waterway Bureau (CWB) announced recently. Jingjiang reach runs from Yichang in Hubei to Chenglingji in Hu'nan. It contains 33 waterways that have a depth of 3.2m. On completion of the project, the 347km-long Jingjiang stretch is expected to have a depth of at least 3.5m even during the dry season, said CWB director Xuebing Xiong.

RE-CYCLING MATERIAL

The 27ha of reclaimed land created during Fremantle's most recent inner harbor deepening has been used to add to Rous Head Industrial Park. This new land will be used for portrelated purposes and boast a container storage area plus quarantine, logistics, and truck marshalling facilities. The Australian port has awarded a \$13M contract to local contractor Brierty to construct roads and install services on the Rous Head site to include a cycle path along the new seawall. Construction of roads and other infrastructure is expected to be completed in June.

INFOMAPS AT ABP

Associated British Ports' group sustainable development team has commissioned ABPmer – ABP's in-house marine science consultancy – to develop an online interactive data viewer. It will enable users to dynamically view, search, query, annotate, and print portspecific infomaps.



The port's focus on renewable energy should create 300 permanent jobs

Tyne takes on renewables

The Port of Tyne on the east coast of the United Kingdom has unveiled £180M (\$285M) investment plans to handle renewable fuels at its south bank estate in South Tyneside.

The port has focussed its business strategy on renewable energy to ensure "thousands of jobs [to help] the UK to meet its target of cutting carbon emissions by at least 15% by 2020", the port said in a statement.

The plan is to develop infrastructure and new facilities for handling, storage, and transport of imports of wood pellet – an important source of bio-energy for power stations – and to extend its main Riverside Quay at Tyne Dock, bringing jobs and economic benefit to the northeast region.

"Like any port we are committed to taking steps to minimise fuel consumption on our site, we are proposing multipurpose sealed storage, conveyor systems, and a new length of railway line, which will make the operation as costeffective and efficient as possible," the port told *P&H*, adding that from the port all cargoes of wood pellet would be transported via rail.

"The port is currently talking to existing and new customers about putting the new facilities in place. The process to find an investment partner to assist with funding is well under way and discussions are being held with a number of interested parties," Port of Tyne said in a statement.

Already a major player in handling wood pellet in Europe, the plans will enhance the port's existing facilities, creating 900 jobs in construction and 300 in fulltime operational jobs, as well as supporting 2,000 additional jobs, the port claims. "The developments represent the biggest investment ever made by the port and follow major investments already made in 2012," it said in a statement. "These included the strategic land acquisitions of the former McNulty site in South Tyneside and Morston Quays in North Tyneside, both of which increased the port's landholdings by almost 10%."

It has also invested in a £6M (\$9.4M) gantry crane to support the port's container terminal business, and is due for delivery in late 2013.

It is also talking to potential partners to develop one of its sites as an offshore wind farm.

The Port of Tyne has six business areas: cruise and ferry, car terminals, logistics, marine and environmental services, estates, and conventional and bulk cargo.

Canada approves third LNG facility

A third LNG export facility on Canada's west coast has been approved by Canada's National Energy Board. The board said on 5 February that the plant, expected to go on stream in 2020, would export up to 670M tonnes of LNG over 25 years, or 3.23Bn ft³ (984M m³)/ day. The plant would be built at Kitimat by LNG Canada Development, a consortium led by Shell Canada that includes Mitsubishi, PetroChina and Korea Gas.

The scheme complements British Columbia's plan to build at least three LNG plants by 2020. Early site

work is under way at Kitimat LNG, an Apache-Chevron joint venture. British Gas has also proposed a scheme with partner Spectra Energy to build a natural gas pipeline from northeast British Columbia to a potential British Gas LNG export terminal near Prince Rupert.

Calgary's TransCanada Corp hopes to build a \$5Bn pipeline to connect to a proposed LNG plant in the Prince Rupert area for Progress Energy, a subsidiary of Malaysia's governmentowned PETRONAS.

RWG finds funding under TEN-T project

The European Union is to provide €5M (\$7M) towards the cost of the first phase of the Rotterdam World Gateway (RWG) container terminal, currently under construction, under its strategic Trans-European Transport Network (TEN-T) infrastructure programme.

The TEN-T executive agency, which announced the decision, indicated that the EU aid would be going towards a €50M (\$66.7M) segment of the project devoted to rail and inland waterway facilities at the terminal. Specifically, it will be going towards the construction costs of a dedicated three-crane barge terminal, a rail terminal with an annual handling capacity of 246,750teu, and a 9,616teu barge stacking facility.

In deciding to participate in the funding of these facilities, the European Commission took particular interest in the emphasis placed by RWG's developers on its capacity to contribute to modal shift by taking traffic off the roads. It said it expected RWG to be "the most sustainable container terminal in Europe" and the one offering the highest modal shift ratio.

It noted that the terminal's developers were aiming to reduce the road transport share of traffic to and from its hinterland from an initial 50% at its expected opening in late 2014 to 35% by 2016.

The barge stacking facility and dedicated barge terminal had been conceived to ensure maximum transhipment efficiency, it said. The barge stacking facility would be equipped with 10 cantilevered automated stacking cranes, while the barge terminal would be served by three barge quay cranes.

As for the rail terminal, its high handling capacity would make it possible to prepare full train loads on site, thus reducing handling and delay for long-distance transport of containers. The RWG project is a joint venture between the container shipping groups APL, Mitsui OSK Lines, Hyundai Merchant Marine and CMA-CGM, and terminal operator DP World, which will be in charge of operational management.

DP World has a 30% stake in the project. APL, MOL, and HMM have 20% each, and CMA CGM has 10%.

Construction of the €600-700M (\$800M-\$900M) terminal got under way in June last year and work is expected to be completed by the end of 2014. The terminal will be fully automated and have an initial annual handling capacity of 2.35M teu. RWG will cover a 108ha site at the port of Rotterdam's Maasvlakte II land reclamation site. It will offer 1,150m of quay with a water depth of 20m and a 550m quay specifically for barges.

UK port invests in solar power

The Port of Milford Haven in Wales, United Kingdom, announced in February that it was seeking proposals to develop a £5.5M (\$8.6M) 5MW photovoltaic energy power plant. The project has already received approval from the local council and construction is due to start in April this year. The site chosen at Liddeston Ridge will home 20,000 solar panels and is the next step in the company's renewable energy plans.

"The proposed development would produce enough energy to power about 1,000 homes and save 1,500 tonnes of carbon emissions," said the port in a statement. Milford Haven Port's energy development manager Tim James said: "We carried out feasibility studies of all types of renewable energy options on the land. A wind energy development was also considered but we chose a photovoltaic array to minimise environmental impacts." Woodland and hedgerows will be used to shield the site

The port explained to P&H that



Opus Energy purchases photovoltaic power generated from the solar panels installed on Port of Milford Haven's bowling alley

the energy produced across its estate is used directly by the port itself or its commercial tenants. "Any surplus electricity generated is then exported to the national grid for use in the immediate area," it said.

The port continued: "The Port of Milford Haven is responsible for the safe handling of more than 29% of Britain's seaborne trade in oil and gas. Hydrocarbons are a vital part of the UK's energy security and will be for years to come. But we are uniquely placed as a port to harness so much more of the energy mix, be it wind, tide, or sun. As demand for alternative energies grows we need to show we are not only stimulating growth in these industries by attracting companies in the sector to operate here, but also that we believe in renewables and invest heavily in them. This underlines our status as the energy capital of the UK, now and in the years to come."

In 2012 the port installed 2,500 solar panels across 25 of its properties, including a bowling alley, in a project costing £1.5M. (\$2.3). Port of Milford Haven also operates Pembroke Port and Milford Dock.

Port updates

OMAN DOUBLING UP

A Hutchison Port Holdings-led consortium is to expand Oman International Container Terminal (OICT) to take Port of Sohar's capacity to 1.5M teu by the end of this year. Hong Kong-based HPH said that "this is not a new port project as reported by some but an expansion phase of our existing concession".

EMIRATES LIGHT THE WAY

The UAE port has installed eight Tideland SB-285P lateral mark buoys equipped with LED lanterns and AtoN aids to navigation systems to communicate with vessels. The buoys mark a new passage where the port authority provides marine services for the Abu Dhabi crude oil pipeline project that involves the transport of oil through a 360km-long land pipeline, interim storage, and export via three single point mooring buoys for deepwater loading.

INDIA CAPACITY UP

Essar Ports is planning major capacity expansions at two Gujarat state west coast ports, aiming to boost capacity to 158M tonnes/year from today's 104M tonnes/year. Essar Ports MD Rajiv Agarwal commented: "We've signed an MoU with Gujarat Maritime Board. At Hazira the length of the waterfront will be extended to 3km with land reclamation. At Salaya we will add five berths, enhancing the waterfront to about 1.5km. The total investment for this expansion will involve \$1.8Bn over a period of 10 years." The plans are awaiting government approval.

LNG FEASIBILITY

DNV and Korea Gas Corporation (KOGAS) are to co-operate on a feasibility study on the establishment of an LNG bunkering infrastructure in Korea, particularly ports in the southeast (Pusan) and the west (Incheon and Pyeongtaek). DNV aims to address "possible LNG supply chains and infrastructures, technologies related to LNG shipping and bunkering, standards, regulations, and issues regarding public acceptance", said the company.

Coastal stewards

Port authorities must simultaneously improve their environmental performance and expand to meet demand, *Kurt J. Nagle*, president and CEO of AAPA, tells *P&H*

> Public port authorities have many functions for the communities they serve. Their most visible role is to promote and facilitate commerce, serving as economic engines that provide jobs in their immediate vicinity and beyond; but an equally important mission is to serve as effective coastal stewards of their local environment.

> Protecting the coastline and the myriad natural resources around its harbors is a fundamental purpose of all public port authorities. They have been entrusted by their local governments to balance the movement of goods with sustaining the local environment for future generations. In 2007 AAPA adopted a resolution supporting

sustainability as a standard business practice for ports and the association. For ports, this means implementing business strategies and activities that meet the current and future needs of the enterprise and its stakeholders, while protecting and sustaining human and natural resources.

It is no easy task to confront current trade projections and increasing cargo volumes in light of growing metropolitan populations. Coastal property is more valuable than ever, and as diverse interests seek to utilise waterfront land for a variety of worthy purposes, the role of the public port authority as coastal steward has never been more important.

AAPA's members are working proactively to enhance the air, water and land of the coastal environment. Through partnerships and independent projects, seaports aim to reduce air emissions, find solutions to the challenge of aquatic invasive species, and protect and create wildlife habitats.

Seaports are comprehensively managing their environmental impact on an ongoing basis by developing policies and goals that address their commitment to the environment. Ports liaise with stakeholders in planning and problemsolving, and also inform and involve community members and government agencies to help craft a vision for a future that benefits seaports, their neighbours and port workers.

Ports use various approaches to improve their environmental performance. One is a strategic angle that focuses on authorities proactively and systematically composing performance-oriented plans related to one or more environmental aspects. These may take the form of an Environmental Management System (EMS) or a clean air and/or water strategy; examples include the San Pedro Bay Ports Clean Air Action Plan and the Pacific Northwest Clean Air Strategy.

Some ports choose a targeted approach, in which authorities aim to develop programmes or initiatives to improve a particular aspect of environmental performance, such as reducing waste at a port-owned marina that is not part

of a larger EMS or waste reduction strategy.

Alternatively, a project-based approach focuses on port authorities undertaking individual projects to improve the environmental performance of the port or its facilities, such as using dredged material in habitat creation as part of a channel deepening or channel maintenance effort.

Measuring environmental performance is also an area of emerging importance. The Port of Santa Marta, Colombia, is pursuing certification through the EcoPorts programme, administered by the European Sea Ports Organisation (ESPO), as Latin American ports recognise the value of having a certification recognised by its major trading partners in Europe.

The Duluth Seaway Port Authority is one of a number of US Great Lakes ports participating in the Green Marine certification programme, along with many Canadian ports.

In October 2012 AAPA co-hosted a workshop with the Environmental Defense Fund (EDF) on environmental performance metrics at ports. It focused primarily on air emissions, and sought to engage and share best practices with those seeking ways to reduce port emissions through the development of common environment performance metrics.

On 17 January 2013 a group of thought leaders from the October workshop gathered to review the meeting and discuss how the metrics could be used to highlight ports with regard to environmental performance. It focused on air pollution relating to the movement of containers at large ports.

Topics ranged from typical terminal performance metrics currently in place at ports, to cutting-edge environmental initiatives that are under way. The group also discussed how these metrics could remain inclusive of ports differing in size and management/operational structures.

In addition to its continuing to work with EDF, AAPA is currently evaluating existing port environmental certification programmes, such as EcoPorts and Green Marine, and may

The role of the public port authority as coastal steward has never been more important -

develop a set of criteria that could be used to consider other programmes in the future.

There is also a growing interest in sustainable terminal and facility design. The Massachusetts Port Authority was recognised by AAPA, and received an Environmental Improvement Award in 2009 for its Sustainable Design Standards & Guidelines. A number of west coast ports have recently sought to build on this idea. Through the facilitation of the International Institute for Sustainable Seaports, ports from San Diego to Seattle have been collaborating on a tool that would allow port authorities to incorporate sustainable design practices into their terminal design or redesign.

When completed, the guidelines will promote sustainable marine industrial development at project level; allow for flexibility and adaptability by individual ports: build upon the sharing of best practices, keys to success, and lessons learned for implementation; identify options and opportunities to implement sustainable attributes; establish objective guidance and measurement of port sustainability; provide for a consistent approach that cuts across port planning, development and operational functional areas; establish a common language understood by internal and external port stakeholders; and enhance the overall efficiency, productivity, and environmental performance of each port without disadvantage to the other ports.

Environmental performance will be a crucial challenge for all ports as they must continue to grow, evolve and develop in order to fulfil their mission of facilitating and promoting commerce in and around their cities, regions and nations. While the path to a sure-footed future will vary for each public port authority, the key to success will come from simultaneously meeting their dual missions of facilitating commerce and protecting coastal resources. PH

AAPA is the American Association of Port Authorities More info: www.aapa-ports.org





Showing the money

Washington belt-tightening will make for a challenging 2013 for US ports, reports **John Gallagher**

s Washington, D.C., prepared for President Barack Obama's second-term inauguration on 21 January, the US port industry was bracing itself for what is likely to be one of the most challenging years for securing the private and public funding needed for expansion.

The industry was still struggling to recover from the hammering it took from several events in 2012. A strike at the ports of Los Angeles and Long Beach caused container cargo to be diverted as far away as Mexico. A threatened strike on the US east coast was stamped down twice, but it still caused anxiety among carriers, and required shippers to invest in expensive contingency plans. Hurricane Sandy in late October caused mayhem at New York and New Jersey container terminals, which were still cleaning up the debris months later.

But while ports were able to weather those physical storms, getting past a potential financial storm in 2013 – what has been widely referred to as the 'fiscal cliff' – could be much more difficult.

Cutting back government spending in an attempt

to reign in the US government's \$16Tr debt is the top priority in Congress, and every industry – including the port – is going to feel the pain.

"We've been spending the last year on Capitol Hill trying to explain to Congress that when you make those choices you really have to make sure that the funding for ports isn't short-changed, because that has a big impact on our commerce in the USA", Susan Monteverde, government relations vice president for the American Association of Port Authorities (see Open Forum, page 10), told *Ports & Harbors.* "It's difficult to figure out what Washington is going to try to do on spending this year, but our goal is to make sure that when they talk about infrastructure that they're giving ports the proper support," she added.

Support for port infrastructure expansion – or lack of it – comes largely in the form of a funding vehicle called the Water Resources Development Act (WRDA). US ports, particularly those on the east coast, have relied on money from WRDA to help pay for deepening projects that will allow them to accommodate the



Miami is one of several ports not waiting for federal funding post-Panamax ships transiting the Panama Canal after the canal is widened in early 2015 (see page 16).

Unfortunately, however, while the federal government has increased maintenance dredging over the past few years through Army Corps of Engineer funding, money for deepening projects has remained inadequate. While Washington insiders expect a WRDA bill to be introduced sometime during 1Q13, none are optimistic that the bill will actually get passed this year.

Complicating the problem is a Congressionally self-imposed ban on so-called 'earmark funding', which traditionally had allowed lawmakers to direct (earmark) money in the federal budget for specific port expansion projects. There is no indication that the ban, which took effect in 2011, will be lifted this year.

But some ports aren't waiting for Congress to figure out funding, and instead have taken matters into their own hands.

Last year the South Carolina legislature put aside \$300M for the Port of Charleston's 15.2m (50ft) channel deepening project, sending out a "clear message that we cannot wait to have our harbor deepened," according to South Carolina Ports Authority president, Jim Newsome.

Deepening at Charleston will not be completed until several years after the Panama Canal is widened, but officials there point out that it is already handling very large – 7,500teu and larger – ships, with the biggest vessels using the tides to sail in and out fully loaded with up to 14.6m (48ft) of draught.

The Port of Miami, which in October began the contracting phase of its own 15.2m deepening project, plans to begin construction in early 1Q13 and expects it to be completed in time for the opening of the expanded canal. The port would not be this far along, however, without a \$112M pledge out of state coffers by Florida governor, Rick Scott.

User fees will allow the Port Authority of New York and New Jersey, which is getting close to completing the 15.2m dredging of its channels, to foot the \$1Bn bill to raise the roadbed of the Bayonne Bridge and expand the port's access to large containerships.

Two other east coast ports, Baltimore and Norfolk,

WRDA and HMT

The Water Resources Development Act (WRDA) is a US law that enables the United States Army Corp of Engineers to carry out port deepening projects and studies on flood control, navigation and the environment, but does not appropriate funding.

Harbor Maintenance Tax (HMT) is a US government tax on shippers based on the value of goods that shippers move through the country's ports. The tax is placed in a trust fund for maintenance dredging of navigation channels.

already have 15.2M channels: Baltimore, which last year added four super-sized cranes at its Ports America terminal, and Norfolk, part of the Port of Virginia, which can now handle 10,000teu-plus containerships.

AAPA's Monteverde expects a group of Senators to introduce in 1Q13 a multi-year proposal to revitalise coastal and inland ports. The bill would likely include a provision requiring full use of the Harbor Maintenance Tax (HMT) to be spent on maintaining port channel depths. Currently only half of the approximately \$1.6Bn collected from shippers is used for that purpose, with the extra money used to offset other federal budget spending.

Some lawmakers argue that cutting spending and reducing the national debt has to take priority in a stagnant economy, but port infrastructure experts assert that such logic could leave the US vulnerable to competition for world markets.

"The catch is, it takes years to complete these projects, so you can't keep kicking these funding decisions down the road", Paul Bingham, an economist with infrastructure consultant Wilbur Smith, told *P&H*.

Bingham argues that it's not just the public sector that is affected when such decisions are put off but "it's also the investors in the vessels, and those that want to invest in container terminals – all those big private sector infrastructure decisions that require that the port access issue is at least made clear, if not resolved. Delaying on the part of Congress ultimately hurts US competitiveness". **PH**

Using their intermodal connections

Two ports in the US southeast are using landside connections – specifically, expansion of their intermodal rail facilities – to compete for more container business. In December the Port of Jacksonville approved a contract to begin the first phase of design for its Intermodal Container Transfer Facility (ICTF) at Dames Point. The \$30M project, a partnership with railroad CSX, is receiving \$10M through a federal grant and the remainder through state grants.

The rail facility will complement the port's existing on-dock rail facilities and is expected to make the port's TraPac Container Terminal more competitive with Savannah and Charleston in the southeast USA.

Port of Savannah, however, is making its own landside improvements, partnering with CSX competitor Norfolk Southern

(NS). In November its expanded NS-served Mason Intermodal Container Transfer Facility opened for business, and the improvements there are cutting round-trip train movements to Atlanta by six hours.

The improvement included extending the rail yard by 1,829m (6,000ft), improving the flow of intermodal trains entering the port. "The upgrades made to this site will enhance Norfolk Southern's ability to serve (port) customers safely and expeditiously, while providing for growth in coming years," NS vice president Jeffrey Heller said.

Georgia Ports Authority chairman Robert Jepson added that the \$6.5M infrastructure investment "helps prepare the Port of Savannah for projected increases in the share of container volumes moved via rail".



A new private-public investment package that aims to pep up the Brazilian economy and avoid future over-capacity is revealed, reports *R.T. Watson*

or many years, Brazil's failing ports have frustrated local and foreign businesses, crimping the supply chain and inflating transport costs. The Brazilian government, however, is now taking serious action, seeking to counter the current economic slump and spark incremental trade.

In December 2012, President Dilma Rousseff publicly unveiled a long-awaited \$26Bn public-private investment package to improve Brazil's inadequate ports. Around \$15Bn is earmarked for new leasing operations and private-use terminals by 2014-15, the remaining \$11Bn for 2016-17.

"We want to inaugurate a new era with the modernisation of infrastructure and port management," Rousseff affirmed. "We want to increase the efficiency of Brazilian ports with this partnership, which will make our exports more competitive and increase production. We want an explosion of investment through this partnership with the private sector."

There are 34 major ports in Brazil, with Santos and Espirito Santo already operating near maximum capacity. Without significant measures to improve Brazil's ports system, the government fears that the rest of the country's ports will near 100% capacity by 2016.

Major ports that the government is focused on modernising through the new plan include Santos, Rio de Janeiro, Paranagua, Porto Alegre, Itaqui, Pecem, and Suape. Currently, many ports are unable to handle some of the largest cargo ships because of narrow channels, small docks or insufficient dredging. Through what is called the National Dredging Program, 10-year service and maintenance dredging contracts will be offered in an effort to improve the access and flow of port operations. Santos is expected to be the first port to which these dredging contracts will be offered.

In addition to the dredging scheme, National Secretary Minister of Ports Leonidas Cristino announced that the number of pilots used to guide ships will increase by an estimated 50% through a partnership with the Brazilian Navy that the government wants to launch this year.

Furthermore, Brazil plans to invest \$1.25Bn "for waterway, road and railway access and for shipyards at Brazil's 18 main ports". Of that total, \$481M will be funded by Brazil's Ministry of Transport, the remainder by Brazilian states and the private sector.

In light of the fact that Rio de Janeiro will host the 2016 Olympics, be a major site of Brazil's 2014 World Cup, and serve as an important hub for Brazil's future expanding offshore oil and gas exploration, the city and state will receive disproportionately more investment in the coming years than any other region in the country.

Besides the plan to upgrade the port of Rio de Janeiro and install equipment such as more heavy-lift cranes,



Santos is one port chosen for modernisation as part of the government's public-private investment package Rio de Janeiro has an estimated 200 projects involving oil and gas, construction, energy, tourism, and logistics, according to Paulo De Lello, export-import manager with Apolo Tubulars. "The expectation is for more than \$100Bn for all these projects," De Lello said.

The government mega-plan doesn't just promise to upgrade existing ports – it also targets construction of completely new ports. In the hopes of speeding up the development of hydroelectric power and mining projects in the Amazon, a new seaport capable of welcoming ocean-going vessels will be built in Manaus, on the Amazon River. New ports are also being planned



in Ilhéus and Espirito Santo, while the Port of Imbituba is scheduled to be auctioned off.

Involving the private sector is key to the successful implementation of the plan. Rousseff, who has increasingly looked to the private sector, is expecting that private groups will help revitalise the ports, raise the level of competition and decrease costs by as much as 20% in the next few years.

In a major change in terminal management, port terminal licenses will be granted to companies promising to charge the smallest tariff for the highest volume of cargo. In the past, these contracts went to the highest bidder.

Additionally, old rules that made it mandatory for privately owned terminals to generate the bulk of their own cargo are being scrapped. Terminals in the future can instead be operated by private owners as commonuser facilities. Volume caps on third-party cargo moved through private terminals are being eliminated.

Bidding for available projects has yet to begin. Nevertheless, in the weeks following the plan's announcement, private groups approached the government with 23 proposals valued at \$10Bn, according to the Brazilian publication *Valor Economico*. Included were proposals for the ports of Espirito Santo, Ilhéus, Porto Velho, Itaguai, and Santarem.

However, the fact that the Brazilian government has announced sweeping plans does not guarantee that Brazil's logistics woes will be resolved. Many professionals still point to issues such as exorbitant tax, corruption, and excessive bureaucracy as major inhibitors to any plan, no matter how much money is allocated.

Drewry Maritime Advisors believes that the government plan could "unlock the badly needed capacity expansion of the port system", yet it cautioned that "a series of thorny issues remain unresolved and will need to be addressed soon to bring serenity back to the system".

These issues include the "bitter rivalry between concessionaires in public ports and private terminals in the container segment" and the recent or imminent expiration of almost 100 terminal contracts. Drewry also warned that some terminal players may elect to "go to court to protect what they consider to be their legitimate interests".

Pedro Mendonça, a logistics supervisor with shipbuilder STX OSV, who recently conducted a study on port infrastructure in the state of Rio de Janeiro, believes the tax code has to be completely overhauled. Mendonça suggested that one solution might be to have "the money paid for tax be invested in the ports in order to decrease the customer's cost".

In terms of corruption, Brazil will have to be diligent in maintaining transparency while billions in capital is being invested at an ambitious pace.

"There has to be an efficient control tool to monitor and guarantee the money finds the right channel," said Gustavo Murari, director of projects with Kuehne+Nagel Brazil.

Murari, like many other professionals, is wary of Brazil's ability to avoid the corrupted traditions that have plagued the country in the past. **PH**

Panama eyes more Pacific capacity

Why is there now even more appetite for container capacity on Panama's Pacific sector? *Michele Labrut* reports for *P&H*

R egional port sources have told *P&H* that interest in increased Pacific capacity may be linked to the debilitating April 2012 strike at the Pacific Port of Balboa, operated by Hutchison subsidiary Panama Ports Co. In other words, market planners may be craving redundancy.

The Panama Canal Authority (ACP) is now seriously considering the development of a greenfield terminal at Corozal, on the east bank of the waterway's Pacific side, and simultaneously negotiating a new land lease deal with PSA-Panama on the west bank of the canal's Pacific route.

In October, the ACP awarded a \$900,000 feasibility study to Worley Parson to examine the construction of a new terminal in Corozal. The ACP owns 0.67km² of land and could buy an additional 0.44km² from the government, bringing the terminal site to 1.13km². Like Balboa, Corozal would have access to the Panama Canal Railway, which tranships boxes from Panama's gateways to box terminals on the Atlantic.

The study is expected to be completed by the end the first quarter of 2013 and presented to the ACP board for approval.

ACP Administrator Jorge Quijano told *P&H* that Corozal has enough land to handle 3M-4Mteu/year (built in two phases), could feature 2,000m of quay, and may require 6.5Mm³ of dredging and 5Mm³ of dry excavation.

If the project is approved by the board, the ACP would remain the landowner. "It would not be a concession as we want a port operator working under contract with [the ACP]," affirmed Quijano.

Meanwhile, the ACP has also entered negotiations with PSA-Panama about the potential renting of land adjacent to the current terminal. PSA-Panama hopes to construct two additional piers – designed to handle the larger ships to call upon canal expansion – adding to its existing 350m of wharfage. Even without access to the railway, PSA-Panama proved its worth during last year's Balboa strike, serving as a conduit for rerouted boxes trucked to Colon. In addition, Hamburg Sud will initiate weekly calls to PSA-Panama this year.

Significant expansion is occurring on Panama's Atlantic side as well. Evergreen's Colon Container Terminal (CCT) has begun stage one of its third expansion phase, including dredging to 15.5m, completion of a fourth berth, and a 0.2km² landfill for another yard. CCT plans to complete construction in 2014, bringing the terminal to 0.74km² in size with capacity of 2Mteu/year, versus today's 1.5Mteu/year.

Manzanillo International Terminal (MIT) has begun a \$250M expansion to double its capacity to 4Mteu/year. MIT has purchased new cranes, including one super post-Panamax and two post-Panamax cranes that arrived last June. It plans to begin construction of 930m of new wharfage by mid-2013, adding to its existing 1,640m.

Also on the drawing boards is the possible development of a new terminal north of CCT, on an area of land known as Isla Margarita. The Panama Canal Colon Port group has retained Jones Lang LaSalle as project development adviser.

As for the canal expansion mega-project, it was 48% complete as of December 2012, with the locks 36% complete. Grupo Unidos por El Canal (GUPC), the consortium responsible for canal expansion, has confirmed that it will not be finished before April 2015. It was originally scheduled for completion in October 2014.

The pace of concrete pouring this year could determine how late the project actually is. As of December 2012, GUPC had not yet succeeded in pouring concrete at an improved pace on the Pacific side, but appeared to have increased its pace on the Atlantic side. **PH**





Canada's east gateway quietly gathers momentum

Alex Binkley reports on the investment that is being put into the Quebec-Ontario Gateway

anada's gateway strategy has been most visible in British Columbia, for the Pacific trade. Yet the logistics link between ocean shipping and ports and customers in eastern Canada and the US Midwest is slowly but surely coming together, according to Raymond Johnston, president of the Ottawa-based Chamber of Marine Commerce.

While the Quebec-Ontario corridor has not had the same public profile as the Pacific Gateway, Johnston explained to *P&H* that the issues in the St Lawrence River, St Lawrence Seaway, and the Great Lakes "are vastly different and quite a lot has been accomplished".

Canada's federal government created high expectations in 2008 when it announced a \$2Bn fund for the development of trade gateways in eastern Canada, Johnston said. "Once government and industry groups delved into the issues connected to a Quebec-Ontario Gateway, it became clear that we have quite a different market than in British Columbia," he explained. "They had a crisis situation with capacity challenges, which we didn't."

The good news is that changes to government policies and regulations to improve St Lawrence and Great Lakes shipping prospects are bringing more business into the system. The removal of the 25% duty on new freighters (bulk carriers) has spurred Canadian lines to order over \$1Bn in fresh tonnage. The Seaway has spent over \$300M in the last five years to improve its locks and navigation system, a figure which includes federal government assistance. Meanwhile, the ports in Montreal, Sept-Iles, Hamilton, and Windsor have invested millions of dollars in new infrastructure as private companies have built new terminals or expanded existing facilities.

Indeed, for all the attention the Pacific Gateway has garnered, the Seaway-Great Lakes network now handles 250M tonnes of cargo annually, about double the throughput of British Columbia ports, noted Johnston.

TheOntario-Quebecgatewaywasoriginallytohavebeen spearheaded by the federal and provincial governments, but most of the work has actually been done by the ports and the private sector, he explained. Of the \$2Bn in federal funds earmarked in 2008, a little more than half has been disbursed to date.

In particular, the Port of Hamilton has become one of the leaders in boosting capacity to handle bulk commodities and petroleum. Hamilton is close to completing a \$510M infrastructure programme, including upgraded rail facilities. Ultimately, the port hopes to diversify away from its traditional cargoes linked to steel production. **PH**

Building bigged bigged Building Building bigged Building Build

California (carbo li com

to accommodate increasingly large box ships

> hen the 16,020teu capacity *Marco Polo*, the world's largest container ship, called at DP World Southampton in the United Kingdom last December, it was a sign of things to come – much bigger things.

Indeed, that 396m-long, CMA CGM giant won't be alone for long: others in CMA CGM's Explorer-class are slated for delivery in 2013 and, as you read this, a fleet of 18,000teu EEE-class vessels is on order for Maersk. Meanwhile, Valemax iron ore carriers, with a capacity of as much as 400,000 tons DWT, highlight the growth of bulk carriers.

Marshalling and implementing the infrastructure needed to efficiently handle the latest leviathans is a task just about as large. There are various issues pertaining to infrastructure, dredging, logistics, and, economics, as well as rail operations.

In a notable step, CMA CGM has invested in the Pacific Container Terminal at the Port of Long Beach, California, which describes its infrastructure and 55-foot (16.8m) dredged channels as "big ship' ready" for vessels up to 14,000teu. CMA CGM has said the move "ensures that the largest vessels deployed in the

A Bromma spreader in Saigon New Port trans-Pacific trade will be efficiently managed". The terminal's location on Pier J, with its 17 post-Panamax gantry cranes, make it, according to the port, "one of the few terminals in the world capable of servicing the new generation of giant container ships".

BROMMA

It is also telling that rail improvements around the port are slated to eventually account for \$1.3Bn of \$4.5Bn earmarked for a port capital improvement programme during the next decade. According to the port, this year alone will see \$208M of that total spent to support, upgrade and expand on-dock rail, and realign track.

Frank Tazelaar, managing director of APM Terminals (APMT) Maasvlakte II in Rotterdam reports that the aforementioned EEE-class giants look to be plying Europe-Far East routes, using transhipment hubs along Africa, the Black Sea, the Middle East, and Southeast Asia. He points out that APMT "is further preparing, where needed, to accommodate the larger vessels that will cascade down into other trade lanes serving emerging markets in Africa, Latin America, and the Middle East".

What is driving such moves around the globe? More efficiencies and fewer pollutants are the mantra. DP World told P&H: "The arrival of the ultra large container ships of 15,000teu and above coincides with emerging new trends in global trade patterns as a result of the on-going economic volatility in developed markets."

Crane manufacturer Liebherr, meanwhile, points to the Panama Canal expansion as well as GDP growth in certain key markets in Africa, Asia, and South America. "This may result in additional container/cargo handling and in further port equipment investments." As for the next generation of giants, "the economical and ecological advantage of larger vessels will probably accelerate the fleet upgrading of the global shipping lines".

In anticipation, Liebherr in 2006 rolled out its largest mobile harbor crane - the company describes it as the largest on the market today - the LHM 600, which has an outreach of 58m and can lift as much as 208 tonnes. The need for more landside giants to meet the seafaring ones looks to intensify.

Lars Meurling, vice president of marketing for spreader manufacturer Bromma, places the broad situation in perspective. "The bigger the vessel, the more important or valuable of an asset it is for the shipping lines. The objective for the shipping lines is to make use of these assets as efficiently as possible and an important part of this is to minimise time spent in the port. Vessel loading and un-loading must be handled in an efficient and predictable way."

Efficiencies depend on a number of factors, including technology. APMT's Tazelaar points out, for example, that the EEE-class vessels require cranes with a reach of 23 containers across, one more than today's super post-Panamax vessels. Also, "while a Panamax STS crane needs 900 kilo volt amperes (kVA)", he explains, "the newest ultra-large containership cranes require 2,500 kVA for operation". There's more to it. Tazelaar continues: "Beyond cranes and power, there is the need to keep productivity at or near 40 moves per crane per hour in order to minimise time in port for the super-sized vessels."

APMT's Maasvlakte II – its Phase A is slated to open in November 2014 – is designed to boost productivity by anywhere from 25 to 50% over and above

CONTAINER HANDLING

FEATUFE



A Bromma spreader at the Euromax Terminal in Rotterdam conventional container terminals, explains Tazelaar, and those percentages are to be enabled by an array of technological features, highlighted by automation "geared especially towards ultra-large container ships".

For example, Gottwald will be supplying 37 batterypowered Lift Automated Guided Vehicles (Lift AGVs) there. The machines will take containers directly from remotely operated ship-to-shore cranes. Two robotic Battery Exchange Stations will automatically switch the Lift AGVs' battery packs – and this is the robotic devices' first use anywhere in the world, according to Tazelaar.

Being first is one thing, fast and productive, another, and that's the point here. As he continues, "the Lift AGVs can carry two containers at a time and shuttle them at a speed of 22km-per-hour from the quay to the container yard using an onboard navigation system that follows a transponder grid. Once the Lift AGV arrives at its programmed destination it lifts the containers into a series of storage racks. Next, one of 26Kuenz Automated Rail-Mounted Gantry (ARMG) cranes arrives to take the container from the rack to its next designated location."

In addition, eight Cargotec Kalmar Monobox-type, super post-Panamax quay cranes will have a reach of 25 containers – more than meeting the aforementioned 23 container reach. Bromma, meanwhile, is supplying 31 high-capacity ship-to-shore spreaders to the APMT terminal, including spreaders that lift two 40 or 45ft containers connected to a single crane hoist, as well as 22 separating twin-lift STS45 crane spreaders.

Also being deployed at Maasvlakte II: two unmanned, remote-controlled barge quay cranes, again by Cargotec, another "industry first" intended to provide "significant improvements" in productivity as well as safety, says Tazelaar. Additionally, Kuenz will be supplying two rail cranes, operated manually as well as automatically, which will service Maasvlakte II's eighttrack, on-dock rail terminal.

Elsewhere, at Dubai, DP World's Jebel Ali Port is expanding its facilities in projects that include cranes supplied by Trans Gulf Port and Zhenhua Port Machinery Company (ZPMC). Both companies will be supplying ship-to-shore and rail-mounted gantry units at the 1,860m Terminal 3 being designed by AECOM to accommodate super post-Panamax traffic.

Back at DP World Southampton, Liebherr Super Post Panamax quay cranes did the honours for the *Marco Polo* in December, with additional Liebherr cranes slated to be deployed at new berths now in the works there. At time of writing, DP World London Gateway, which is expanding, was awaiting the arrival of three 138m-high quay cranes manufactured by ZPMC – the new units, with a reach of 25 rows, will go into service alongside 10 new Cargotec automatic stacking cranes and 18 straddle carriers (see page 5).

Signs point to more of the same in coming years. The vision of scale driving APMT's Maasvlakte II is evident. Liebherr adds: "Due to the clear trend toward bigger and stronger machines, (our company) will continue developing flexible cargo handling solutions according to the market demand."

It's all about bigger things to come. Underscoring the point, those new developments at Jebel Ali Port, adds DP World, will enable the facility to "handle 10 of the next generation 18,000teu mega vessels at the same time". **PH**

Shared box data aids preplanning

Container terminal planning will increasingly take advantage of modern tracking techniques to achieve smarter and more efficient container stacking and onward distribution. Individualised container data will allow terminals to preplan the distribution of import containers. Currently most terminal operators are in ignorance about the contents and destination of the import containers they are about to handle, said Jan Egbertsen, who is in charge of strategic development at the Port of Amsterdam. "Terminal operators still do not know what onward mode import containers will be using and therefore cannot stack boxes to match the onward mode access, so a lot of containers still need excess handling on the land side," he told *P&H*.

The exceptions, he said, are deepsea operators that have also invested in dedicated terminals, such as APM Terminals, owned by the AP Møller-Maersk Group. Since it is also involved in hinterland traffic, Maersk has more readily available data about its containers. At multi-user terminals, individual shippers often regard such container data as business-sensitive and do not want their rivals to know where the cargo is going.

"High-tech sensors attached inside containers can now

transmit data including location, inventory and end-toend supply chain visibility," said Don Miller, director of Global Tracker, a company offering worldwide container tracking technology. This data can be shared by the cargo owner with any operator, including terminal operators and logistics providers.

Miller said tracking technology can reduce unnecessary handling, reducing quayside emissions. "One of the facilities offered by container tracking is clustering, which allows boxes owned by the same company or sharing the same destination to be grouped together electronically," he explained.

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The stress test

¹ New techniques to assess the seismic resilience of port structures should be more widely adopted, *Michael Willford*, Arup fellow tells *P&H*

vents in the past three years alone have shown us how damaging earthquakes and tsunamis can be. The natural disasters in Haiti and Chile in 2010, and Japan and New Zealand 2011, serve as reminders of the continuing vulnerability of port infrastructure to seismic activity. Furthermore, the resulting time that essential port facilities are out of action creates a major impediment to the economic recovery of a region following an earthquake.

Excessive movement of quay walls, leading to the inoperability or collapse of the functional port infrastructure that they support, is a recurring problem following earthquakes. There are three factors that hold the key to understanding, and the future prevention of, these losses.

The importance of ground deformation: The 'displacement based' philosophy is now gaining acceptance in seismic engineering. It promotes the idea that designing primary structures, such as quay walls, simply to survive an earthquake may not be the best approach, especially if that leads to dependent systems, such as container cranes, becoming unusable or irreparable. Therefore quay walls should be flexible so that they satisfy the maximum deformation criteria that would allow the cranes to survive. In many cases this would lead to different and better-performing design solutions.

Prediction and control of liquefaction and lateral spreading: Many ports and harbors are built on, or retain, soft estuarine soil deposits, embankments, or poorly-compacted sediment sourced from dry land. The presence of these poor soils is often the root cause of excessive ground movements. Since the soil level on the quay is higher than that in the harbor, there is always potential for the retaining structure to drift laterally into the harbor during seismic shaking. The displacement tends to increase with each strong pulse of the ground motion in the seaward direction – meaning that the higher the intensity and duration of the tremors, the greater the damage.

Shaking causes loosely packed and water-logged sediments to lose strength and sometimes to completely 'liquefy', leading to very large movements. For example, at Port au Prince, Haiti, the magnitude 7.0 earthquake in 2010 caused the coastline and waterfront infrastructure to slip into the sea, resulting in the total loss of port facilities.

In order to prevent this, a proper assessment of the potential for soil softening and liquefaction is essential. This should be accompanied by solutions such as soil improvement and engineering of retaining structures robust enough to prevent gross movements. As a first step, good records of ground conditions, both natural and man-made should be kept. In Arup's experience most records currently kept do not go into enough detail.

Better design procedures: Seismic design procedures for retaining structures have changed little over the past 60 years and are in need of re-evaluation. Experimental monitoring of soil pressures adjacent to retaining walls during earthquakes has shown that the pressures conventionally used in seismic design are unrealistic, and the dynamic interaction between the soil and the retaining structure itself is important.

Numerical simulation using advanced computer software is a well-established technique used to investigate the likely performance of complex systems, in extreme events, such as road vehicles in crash scenarios. In fact, all road vehicle manufacturers use detailed computer simulation to develop designs to meet international crashworthiness requirements prior to any prototype testing. Despite this, numerical simulation has achieved relatively little traction in civil engineering design even though sufficient capabilities now exist in various software packages to play a highly beneficial role in the design of seismically resilient civil infrastructure.

Before simulation methods are applied to a design, it is important to validate that they realistically predict the physical behaviors that may actually arise. Behaviors relevant to seismic performance of quay structures include:

the transmission of seismic motions through soils

soil softening and liquefaction

 behavior of structural elements, for example and steel and reinforced concrete, under intense dynamic loading
 interaction between soils and structures including piles, walls, and structures supported on the quay

 the gradual movement of a quay wall towards the harbor with each seaward pulse of the seismic motion
 interaction between the wall and habor water.

Large scale physical shake table experiments on quay wall systems, such as those performed at E-Defense in Japan, provide detailed performance data, against which computer simulation software can be validated.

Japanese experiments into soil liquefaction saw

the quay wall fall into the harbor and piles supporting a structure on the quay suffer structural failure. Computer simulation by Arup using the LS-DYNA software was able to replicate all these behaviors, and to predict the movements associated with a number of design alternatives. This is an important step in building the confidence to test out the seismic performance of a proposed quay wall at the design stage and, if necessary, to then improve the design to reduce movement in a real earthquake. If adopted, this approach would reflect modern design philosophies of producing and demonstrating simulated safety scenarios before a single physical prototype is tested.

Although improved data records of actual soil conditions are important, it makes sense to apply the most reliable modern techniques to achieve the desired balance between infrastructure cost and longterm availability.

Even though the exact result of every single action cannot be predicted with absolute certainty, we now live in a world where post-earthquake disruption to business is increasingly undesirable and costly. Therefore, taking every opportunity to mitigate against such interruption should be a priority. **PH**

Arup is an independent engineering and consultancy company. More info: www.arup.com

An example of lateral spreading at Port au Prince, Haiti, following the 2010 earthquake. Shaking causes loosely-packed and water-logged sediments to lose strength and liquefy



After the earthquake in Port au Prince, subsidence caused the port and its equipment to slide into the sea



Seeing is believing

The world's bridge system suppliers have joined forces to back a pioneering e-navigation project to improve vessel route planning. *Stephen Cousins* considers the impact on safety and efficiency for ports

espite the many advances in maritime technology, it is unsettling to realise the lack of information on the movement of ships currently available to ports. A ship's master can research and plan his voyage to meticulous detail, but ports en route are often left unaware of when the vessel is likely arrive, if delays or deviations have affected its journey, or, once berthed, when the ship is likely to leave.

In an effort to address this situation, improve safety and scheduling, and bring the disciplined flight path approach seen in aviation to sea lanes across Europe, the European Union (EU)-funded MONALISA project (Motorways and Electronic Navigation by Intelligence at Sea) was set up to develop a more efficient system to communicate important e-navigation information in real-time between ship-and-shore and from ship-to-ship.

The research project began in January 2011 and is led by the Swedish Maritime Administration (SMA) and incorporates technology from Saab Transpondertech. It is one of several schemes co-funded by the EU under its Motorways of the Sea initiative, which was set up to cut carbon emissions and get more freight transported by sea. MONALISA comprises four elements: Dynamic and Proactive Route planning (DPRp: the most important element); Verification System for Officers Certificates; Hydrography Data; and Global Sharing of Maritime Information.

Following successful trials of DPRp in the Baltic, MONALISA reached a critical landmark in January 2013

when 15 of the world's biggest e-navigation systems manufacturers, including SAM Electronics, Kongsberg, Transas, and Jeppesen, agreed to work together to develop an open standard to allow the system to interoperate across their respective hardware, paving the way for the system's possible implementation by 2018.

"It is a momentous agreement that will transform the future path of navigation," said Ulf Svedberg, senior co-ordinator of research and development projects at SMA and leader of DPRp. "Up until now, information could only be exchanged between companies and ships using the same brand of equipment, but effective sea traffic management requires all manufacturers to agree on a common protocol, which now looks certain," he said.

MONALISA aims to establish a common system of route planning information, dubbed the Maritime Federation of Information, that can be accessed and updated online and in real-time by all stakeholders, including vessels and ports. Information would be updated and transmitted by the AIS, using either satellite, or 3G/4G cellular networks depending on which is more readily available in the region being travelled.

It can also run on a port's vessel traffic management (VTM) system. Svedberg explained that they have all the necessary software up and running at a port VTM simulator centre and on board 'real' ships, and so in theory it could "go to real VTS [vessel traffic system] today". Using a combination of electronic nautical charts (ENC) and AIS, a vessel's preplanned route would be made visible to other vessels and onshore monitoring centres, with an estimated best route and speed plan agreed between captains and the Sea Transport Control Centres (STCCs).

For ports, the system will enable better scheduling and operational efficiency. They will be able to receive a vessel's exact time of arrival as soon as it has left a previous port. If, for example, a berth is occupied, or a pilot is unavailable, the port can relay that information to the incoming vessel's master who can reduce his speed and so adjust his arrival time.

The system could also drastically cut ship journey times by allowing vessels to navigate in traditionally prohibited areas when traffic levels are reduced. "Current shipping lanes are inefficient and they force ships to travel in restricted lanes drawn on maps that can take them many miles away from a more direct route. MONALISA would introduce a dynamic separation of areas, and allow ships to 'cut corners' and sail more direct routes when less shipping traffic is recorded," said Svedberg.

If implemented, MONALISA will introduce Sea Transport Management with STCCs intended to collate all this route information and carry out similar functions to air traffic control centres used in the aviation industry.

In a typical scenario, a master would transmit details of his route, plus departure and arrival times by AIS to the region's STCC, which will then assess it and either approve it or send him suggested voyage improvements.

"We're looking at the idea of housing STCCs in existing Ship Reporting System [SRS] centres, which are already distributed in convenient locations around Europe, near Sweden, in the Finnish Gulf, and in Poland, etc. Rather than just report ship movements, as SRSs do now, staff would be trained in specific sea traffic management tasks and co-ordination," said Svedberg.

The STCC would also assist throughout the vessel's voyage by providing continuously updated data on phenomena such as weather, closed shipping lanes, or accidents, ultimately helping save the vessel fuel, reduce fees through control of the shipping flow, and enable just-in-time arrival in port.

However, the concept of assisted navigation is a controversial one, which raises legal and operational issues. The new technology may place new demands on ports, which will have to put more resources into recording and uploading the relevant information.

It is also unclear what place shore-based navigational advice from an STCC has in a world where the ship's master is supposed to retain ultimate responsibility for navigation.

"Proponents of MONALISA say the master still has overall control and the STCC is only offering advice, but this argument is disingenuous," says John Murray, director of marine at the International Chamber of Shipping. "If a state or administration advises you, they are effectively telling you to do something, so what will their liability be if something goes wrong? Also, what is the competence of the person sitting at that desk in the STCC, these are obvious questions that still need answering."

Others have raised doubts about the system's overall impact on safety. If bridge officers are sent instructions and directions from shore it could, in the long term cause them to over-rely on this support, perhaps leading to accidents in the same way that car drivers' over reliance on satellite navigation can reduce situational awareness and cause accidents.

In response to these concerns, the SMA insists that such situations are farfetched and that the master will not need to relinquish any of his responsibility. "Some people have totally misunderstood our intention, which is simply to assist the master, not undermine him," said Svedberg.

SMA is has been carrying out tests of the DPRp system on ships in the Baltic and on simulators at partner Chalmer's University of Technology in Gothenburg. "On board the ships we tested signal quality and how many hours a day vessels might be outside transmission areas. The system is working and we have successfully transmitted routes from sea-to-land and ship-to-ship," said Svedberg.

The project is currently awaiting approval for a second round of EU funding for a second phase - MONALISA 2.0 - which will run from 2014-15 and likely involve a larger trial of 15 ships run by Italian cruise company Costa Crociere. Bridge navigation system manufacturers will act as advisors during this phase, develop a common protocol, and help bring the project towards full implementation scheduled for 2018. PH

More info: www.sjofartsverket.se/ pages/34099/Concept_of_Act1.pdf





Critics of MONALISA are concerned that shore-based personnel will wrest control of navigation away from the master

The captain sends his planned route (left) to the STCC, using AIS. The STCC then sends back its proposed route (right), highlighed in green below the original planned route, also in green above



oto: Trancac

Directing traffic

Planning, technology, outside dynamics and staff training are crucial aspects to consider in a vessel traffic service, reports *Scott Berman*

ecision-makers looking at acquiring or augmenting VTS (vessel traffic service) systems do so in a changing scene. Advancing technologies and logistical developments can complicate the process of implementing a VTS. But some things remain the same: the crucial nature of such systems, and the importance of finding one that's fit for purpose.

Planning is essential. A comprehensive risk assessment should come early in the process, believes Bob Hockham, business development manager for consultant BMT Isis. He explains that doing so "provides and reveals much of the information that is influential" when considering the purpose of the VTS, whether it be the level of information required, if it's being used as an aid to navigation assistance, or for traffic organisation.

VTS risk assessment should cover a range of aspects as broad as they are relevant. Take the nature and placement of VTS radar sites, for example. What are the risks associated with getting crews out to support and maintain that radar hardware? Or should a port deploy microlink or fibre optics? That depends on many factors. As Hockham explained, weather conditions such as heavy snow, hail, even sea spray and wave effects, can affect microlink line of sight. There may also be sensitivity about effects of microwave transmissions on bird and animal life and the local community.

Wind farm turbines may affect radar, according to Hockham. "Ten years ago there were locations where you wouldn't even think about this," he said. No longer. And it's an issue likely to come up with more frequency as increasing numbers of offshore



An operator workstation in Malta... well-trained operators are seen as the essential link in VTS operations wind farms come on line in the coming years.

Such factors may steer ports towards VTS radar arrays that use fibre-optic cables. If so, there are other things to consider. As Hockham points out, if cable systems run from VTS radar sites through zones with heavy traffic, what is the risk that anchors will be dropped on the cable?

When considering VTS hardware, port and terminal operators should think about equipment that is not only fit for purpose now, but is also upgradable. It should be future-proofed against changes in legislation and port operational trends, said Hockham. Additionally, the VTS system should include redundancy, "in terms of both equipment and personnel back-up", to reduce the possibility of downtime, he explained. Redundancy would be provided through "back-up power systems, emergency VTS control stations and backup radar/AIS receivers, as well as VTS-qualified pilots and harbor officials to cover absences."

Needs can be independent of scale, Hockham noted, referring to different sizes of port and terminal facilities and operations. But what about inland facilities? In his view, the key up-front considerations should include difficult access routes and channels, and "traffic monitoring services [that] will require specialised radar and other monitoring equipment, to minimise interference and blind sectors because of close proximity to buildings, structures and other vessels."

Inland behemoths aside, smaller inland ports must address fundamentals when planning VTS, but often with more modest budgets than bigger maritime operations. In such instances there are alternatives such as "lower-cost automatic identification system [AIS]-based services paired with marine radio and other off-the-shelf components," said Jason Tieman, director of maritime solutions for supplier PortVision.

He explained that such systems, which are webbased, can have capabilities such as:

Predictive ETA to help shore-side personnel with resource planning and dock optimisation

■ Real-time alerts that indicate when there are dock arrivals and departures, and vessels proceeding past key points of interest

Managing and sharing documents and information with stakeholders, and integrating weather data.

He added that such AIS-based systems could also augment larger ports' VTS, and are doing so, for example with PortVision services at the ports of New Orleans and Houston.

Advancing VTS-related technologies bring new capabilities to a widening range of products. And with new capabilities come new responsibilities, explained Dmitry Rostopshin, senior product manager for shorebased systems at Transas Marine. "Operators of modern VTS systems are faced with new tasks when they have to monitor larger areas" and significantly more vessels, he explained. "In such circumstances processes automation in VTS plays a very important role. Today, VTS is not just a radar screen: it consists of many

Business at Barcelona

Port of Barcelona augmented its VTS in 2011. Its initiative speaks of how VTS systems have grown to encompass and integrate a wide array of crucial tasks and functions.

The impetus at Barcelona was to boost efficiency and competitiveness. Schneider Electric, brought in by the port to provide a solution, elaborated. "The port's size and intense activity, coupled with the increase in vessel traffic . . . necessitated a management system enabling optimisation of port facilities in order to streamline teu flow," it said. The bigger goal was "to put the port at the cutting edge of maritime and port management efficiency in the Mediterranean".

Accordingly, Schneider Electric worked with officials at the Barcelona Port Authority (BPA) to implement a high-level vessel traffic management and information system (VTMIS) called Smart Mobility, which interweaves traffic management and port management operations, co-ordinating and recording communications across the board, from radar trajectories to related AIS (automatic identification system) information and more. The VTMIS essentially provides "a standardised tool to facilitate maritime and port management, facility security, and improved efficiency", the supplier indicated, in addition to "empowering the BPA through a substantially higher level of competitiveness".

It's a sign of changing times for VTS. As Baldomero Ortega, maritime solutions product manager at Schneider Electric, put it, VTSs "are composed of several tools and software helping controllers to avoid accidents and organise maritime traffic. But the port and terminal traffic are also associated with business. Our system is a response to this need."



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A VTMIS control

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software and hardware components integrated in one large and complex system that not only provides an operator with raw sensor data, but also supports the decision-making process."

IMO guidelines spell out standards for qualifications and training in its Guidelines for Vessel Traffic Services, IMO Resolution A.857 (20). Rostopshin pointed out that under the resolution "candidates are not required to have [a] nautical education. In this case, it is recommended to provide additional lectures to let trainees acquire minimal nautical knowledge" in areas such as navigation, vessel construction and control, and port operations. "Together with professional knowledge," he added, "it is very important to take into account [the] personal skills and psychological portrait of the person."

Hockham, meanwhile, recommends on-the-job training under the guidance of experienced operators and advocates producing a detailed VTS trainee workbook that "clearly identifies tasks, deadlines and responsible officers who will sign-off on completed tasks". He told *P&H* he was noticing a general trend in terms of VTS-related personnel training: "a growing awareness that there should be more communication between VTS operating authorities to encourage the sharing of expertise and experience."

He added that operators were becoming more aware of the possibility of failures and accidents in complex systems. "Considering the huge number of variables involved in vessel traffic management, ports and harbors certainly qualify as 'complex systems."

The scope of the technologies, their integration, and their strategic application is broad, complex and expanding. Still, as the points about training amplify, proper operation of a VTS is a crucial human dimension. Finally and importantly, Rostopshin added: "Even the latest generation of VTS is useless if nobody knows how to use it, and all available functionality." PH

The experts say...

Dmitry Rostopshin, senior product manager for shorebased systems at Transas Marine:

- Think about flexibility. It should be possible to expand the system in the future, for example by adding new sensors, an operator's workstation, or to carry out a system upgrade. None of these additions should require the total rebuilding of a VTS.
- Map out a maintenance programme. Regular maintenance saves time and money in the long term.
- Remember that the stability of a VTS system is very
- important, so determine the most critical components and ensure they are redundant.

Bob Hockham, business development manager for consultant BMT Isis:

- Include VTS planning in your port's master plan.
- Consult with every stakeholder, inside and outside the port.
- Invest in pre-deployment traffic and risk management studies to clearly understand the needs of the sailing areas to be monitored, risks and required mitigations.
- Share experiences. Visit and keep up dialogues with ports operating their own VTS.
- Encourage the input of pilots in terms of effective VTS operations.
- Consider ways of working with VTS suppliers on methods of procuring equipment, such as leasing or outright purchase.
- Consider ongoing system maintenance requirements and the need for dedicated in-house support.



Khalifa's next step

This young port is a key part of Abu Dhabi's future vision. *P&H* visits the offshore construction to understand how it all fits together

The existing quayside currently being used for bulk cargoes could be used to double the port's container capacity to 5M teu a year halifa Port has been designed to grow with the region as it diversifies its interests away from oil and looks to industry and tourism. The emirate of Abu Dhabi has developed an economic vision for 2030 that provides a blueprint for its development, both from a construction and a social perspective. According to Abu Dhabi Ports Company's (ADPC) 2012/13 handbook, 60% of its economy currently depends on oil and gas and 40% on non-oil and gas. "By 2030 the plan is to reverse this," it said.

Since it opened on 1 September the port has handled more than 200,000teu and all container traffic has moved from Mina Zayed "three months earlier than planned", ADPC told *P&H*.

There are many telltale signs that the port has been designed to allow for growth and sustainability. Khalifa Port has a current container capacity of 2.5M teu a year but this is forecast to reach 15M teu by 2030. The number for bulk/break cargo is likely to triple – its current capacity is 12M tonnes³ a year with the potential for 35M tonnes³ by 2030. The port island's located 4.6km offshore linked by a causeway. The 16m-deep approach channel and 18m-deep basin allow for the largest ships currently at sea to call at the port, *P&H* was told by a member of the project team

during its visit. ADPC added: "The dredging is not the only factor in receiving these types of ships" and it has equipped the port with ship-to-shore cranes to accommodate those ships. "The outreach is for 22 containers and can be extended further as and when required." The largest vessel to call so far is the 14,000teu *MSC Bari*.

The quayside has been built to offer flexibility. ADPC explained that "in phase one of operations, 1.2km of quayside has been set aside for an initial capacity of 2.5M teu per year, with a further 1.2km set aside for another potential container terminal that would boost or double capacity to 5M teu a year." The space allocated for the second container terminal is currently being used for general cargo.

But where will the other 10M teu a year come from as per the 2030 plan? The offshore port's shape and proximity to the shore were likened to a 'finger' during *P&H*'s visit, and can therefore be expanded in 'fingers'. Once the existing terminal is at capacity, another finger can be added, and so on, the team member explained. "You would need to dredge alongside each finger plus the turning basins," she said, but in theory there is plenty of space to add additional quayside.



The container terminal currently has six post-Panamax cranes and has ordered three more, together with 12 automatic stacking cranes, for delivery in 2014.

Its focus on the environment is also a testament to its focus on sustainability. The project team member cited ecological restrictions as one of the main challenges of the project. The island port is situated 4.6km away from a water desalination plant - the main supplier of drinking water to Abu Dhabi - and a power station. In addition, the EMAL (Emirates Aluminium) facility is located nearby on the 8km environmental breakwater. It was important that water temperature remained within +/-1°C as it could affect the water cooling system used at the facility. Water temperature was monitored during the construction phase of the port island and a trestle was built on the causeway to allow free flow of water on an ongoing basis. The breakwater was built first to protect the shore from development of the quay and all dredging work was carried out behind silt curtains, P&H was told. The breakwater is also there to protect the 35km² Ras Ghanada Reef situated about 2km from the EMAL terminal.

It seems impossible to talk about Khalifa Port without mentioning Kizad (Khalifa Industrial Zone Abu Dhabi). Ask a question about the port and the answer will be found in Kizad. The port and the industrial zone have been developed to complement each other. By 2030 it is forecast that Kizad will create 150,000 jobs, directly and indirectly, and contribute 15% to Abu Dhabi's nonoil GDP. At the time of writing, Kizad had more than 40 companies signed up, and one of its anchors is EMAL. Khaled Salmeen, EVP for industrial zones at ADPC, told P&H its main competitive advantages were its status as a tax-free zone and its location in relation to the port. "The quality of the industrial infrastructure and the proximity to the port have been major attractions for our clients," he said. "Kizad offers a key cost advantage," and zero taxes on both companies and individuals. Its other selling points are its infrastructure and transport links (see box).

It is early days for the young port, and when *P&H* saw it late last year there was very little activity. But this is a project for the long-term benefit of the emirate and its people, and its actions now will position it for the post-oil years to come. **PH**

Linking up the emirates

Khalifa Port and the Kizad industrial zone will eventually be linked by rail, which will also extend beyond the port, linking the emirates and neighbouring countries. A key part of this is the gulf rail line, which is due to be completed in 2018, and each emirate is building its own section.

Phase one in the western region, which will service oil and gas, is under construction, and phase two will connect Khalifa Port with Etihad Rail's freight network. It is due for completion in 2016. "We have already built the infrastructure [which runs the length of the causeway] for the rail line onto the port," commented ADPC's Khaled Salmeen. The final phase will connect all the emirates.

Rail will also be used inside Kizad and link with the port. Salmeen said they examined the issue from a business perspective. If one food company produces one container a minute, "you can imagine the congestion that company would create if it used Kizad roads," he commented.

Congestion on the roads outside Abu Dhabi is already a reality. The project team member who spoke with *P&H* said that although big they still "suffer from congestion. The railway will offer clients choice". She added that there were a number of truck-only roads but these too were already congested.

These rail links "will eventually form part of a regional rail network totalling more than 2,000km", Ken Harris, editor of *IHS Jane's World Railway*, told *P&H*. It will link systems in Bahrain, Kuwait, Oman, Qatar, and Saudi Arabia, as well as the United Arab Emirates, and will transform freight transport in those countries, he said. Currently, only Saudi Arabia has a main line rail network. "The concept of a regional network was developed by the Gulf Cooperation Council, of which all six states are members. The GCC is overseeing development of the network and addressing issues such as common technical standards, interoperability, and commercial relationships between individual railway companies."

It's a project that is not without challenges, Harris said. "Building a railway in remote locations in high temperatures is difficult in itself. In addition, sand is a problem as the movement of dunes can interfere with construction of the line and rapidly block it when it's completed. Locomotives also need to be adapted to prevent the ingress of sand particles into their propulsion systems and other equipment. Etihad Rail engineers have been drawing on global experience in tackling such challenges," he explained. PH

Khalifa Port and Kizad in October 2012. The EMAL facility sits on the breakwater above and left of the cranes

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KAITAK

Kai Tak cruises forward

Hong Kong's new terminal in Kowloon is nearly ready to prove its worth, reports *Scott Berman*

Sleek and sophisticated

y June this year the first berth of Hong Kong's new cruise terminal should be ready for business. The 143,600m³ and 850m-long terminal will be part of a 320ha construction area projected to take 12 years to complete. It broke ground in 2009 and has a price tag of HKD130Bn (\$16.8Bn).

Hong Kong already has three facilities where cruise ships can berth – its Ocean Terminal in the heart of Hong Kong's shopping district, China Merchant's Wharf on the western side of the island, and the Container Terminals in Kowloon. But according to architect Foster+Partners, the new terminal will have plenty to offer. "Kai Tak Cruise Terminal will greatly exceed the existing terminal facilities in Hong Kong and become the only purpose-built terminal for large international cruise liners visiting Hong Kong. It will be able to accommodate the world's largest cruise ships."

The terminal, a key component of the city's new master plan, will be able to handle as many as 8,400 passengers simultaneously and more than 1,000 crew members arriving and departing from Victoria Harbour. The building's purpose – and the goal of Kai Tak's operator, Worldwide Cruise Terminals Consortium

Kai Tak's design is intended to stand out



 is to conveniently accommodate many more sea travellers each year than the 702,017 inbound cruise visitors who reportedly arrived in 2011.

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The site is at the southern end of a former runway of what was once Kai Tak airport, which was closed and replaced in 1998. The new marine centre is the lynchpin of a scheme to bring not only a boosted international cruise industry profile to Hong Kong but also new economic vibrancy and development to Hong Kong's Kowloon City, Wong Tai Sin, and Kwun Tong districts. The scheme calls for a rail link, hospitals, a park, and public housing units to be constructed in addition to the terminal.

Construction of the actual terminal began in May 2010 and is expected to open its first berth in mid-2013, with the second coming into operation a year later. Opinion is generally positive about the project, although a cautionary note was sounded as work on the terminal started: a 2010 column in the *South China Morning Post* contended that the massive design-and-build project would not generate sufficient economic returns to justify itself, as cruise passengers tend to spend most of their money on board the kind of massive, all-inclusive liners that such terminals are designed to attract rather than in ports of call.

On the other hand, regional tourism officials are reportedly promoting what the new terminal signifies, what it will bring to Hong Kong, and its role in the cruise industry. Among the benefits: being able to accommodate the world's largest cruise vessels – a feature that one reporter said would end "embarrassing logistical snarls" caused by facilities too diminutive for gargantuan cruise vessels.

A promotional animation of the new terminal – highlighting the issue of whether cruise passengers stay and spend on board – depicts Kai Tak as a bustling complex with nightclubs, restaurants, car exhibition spaces, and programmable light shows. The building will also boast 5,600m² of retail space.

Overall, there is a sense of blurring the boundaries between ship and terminal as the facilities will entice local residents as well as passengers to enjoy the amenities. It is the responsibility of architect

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Energy efficient

Kai Tak Cruise Terminal is set to boast a number of green design elements, including photovoltaic and solar hot water systems, and will be able to recycle rain water and air-conditioning condensation to irrigate the green roof. It has also been designed to conserve energy in a number of other ways, including heat wheels or rotary heat exchangers to reclaim heat from the building's exhaust air system, energy-efficient lighting and an energy-management system.

In another feature, according to the website of the Hong Kong government's Building Service Department: "The building will be connected to the district cooling system, which provides chilled water to [Kai Tak's] air-conditioning system to achieve energy-efficient air-conditioning." These and other sustainable features have brought the project local environmental recognition by way of an award from the Hong Kong Green Building Council.

Above: Two artist's impressions of the interior of the new light and airy cruise terminal at Kai Tak

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Cross section of the three-storey terminal

Foster+Partners to create a space that will offer all these attractions.

The London-based firm – and its 22-member Kai Tak project team – together with the construction capabilities of Dragages Hong Kong and design, planning and engineering firms, provides not only high-level expertise but also design kudos for the client: the government of Hong Kong Special Administrative Region's architectural services department.

Foster+Partners' vision is "to produce an international world-class cruise terminal facility. The design



development of the project has remained faithful to that vision". The design features a number of pragmatic options. For example, "there has been a conscious effort to provide flexibility to the building, which is essential to make the facilities financially sustainable. It can function as a banquet hall, an exhibition hall, and a venue for large gatherings."

Kai Tak will be a three-storey, 40m-high concrete structure clad in aluminium panels and double glazing, with a 675m concourse sitting on an 850m apron. The design of the building is essentially a long bar accented with an enormous arch, along with a high radome tower at one end. One of its signature features is a roof garden offering areas for events, lounging, and dining, and grand concourse spaces running the length of the building.

When *P&H* visited the construction site in June last year, it was told that Chinese president Hu Jintao said the project was very significant. Whether the new terminal will provide the platform for an evolving regional cruise industry remains to be seen, but Kai Tak is shaping up to be an iconic example of marinerelated architecture showing potential for the urban landscapes of today and tomorrow. A significant project, indeed. **PH**

More info: www.kaitakcruiseterminal.com.hk



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Competitors must co-operate

For several years, IAPH's World Ports Climate Initiative has supported a project aimed at improving intermodal transport, which allows cargo to be moved more efficiently, reducing transport costs, road congestion and air emissions. Project leader and senior advisor at Port of Amsterdam, Jan Egbertsen, gave *P&H* an update.

Egbertsen spoke about recent developments in the region he knows best – northern Europe – but he also made it clear that many of the issues were equally relevant to ports and logistics providers in other areas of the world that were seeking to improve their intermodal offerings.

"Transport operators tend to operate with one modality and

At multi-user terminals, individual shippers often do not want their rivals to know where the cargo is going

Jan Egbertsen Senior advisor, Port of Amsterdam have not been looking to offer other options," he said. "On the other hand, cargo shippers don't want to be restricted to one mode, but want flexible options. So we have to give shippers the possibility to choose their own modalities and to do that you need a good ICT (Information and Communication Technology) planning system and that's where neutral information platforms come in."

He explained that such platforms were already being developed at single-user terminals linked to major deepsea liner companies, such as the AP Møller-Maersk Group. "But at multi-user terminals, individual shippers often do not want their rivals to know where the cargo is going. That's why the Netherlands is developing a neutral information platform that guarantees that business-sensitive data will not be available to competitors yet can be used to decide on the most efficient hinterland transport mode," he said.

He also believes the way forward is for large carriers to work together in the hinterland to consolidate train or shortsea shipping loads. This is already happening with large companies that share transport or warehouses to reduce costs.

"In terms of corporate social responsibility there is a lot to be achieved by co-operation, also in terms of how companies are seen by consumers. It's crazy that currently three trucks can visit the same supermarket with

part loads that return empty," Egbertsen pointed out.

Co-operation is not only hampered by competition but also depends on whether logistical patterns fit together and whether potential partners are ready to



make changes in order to use intermodal transport. Egbertsen said that a recent attempt to ship flowers by rail from Italy to Amsterdam had limited success because the transport company experienced difficulties finding a suitable cargo for the return leg.

"But customers are increasingly interested in the size of carbon footprints so it could be that changes will be imposed on industries and transport companies by consumer pressure. The Global Responsibility Index has not focused hitherto on logistics and this will be something that will increasingly impact on decisionmaking by industries and shippers," he predicted.

A particular area the intermodal working group is currently looking at is supply-chain finance. "Each of the parties involved in cargo flows has to secure its own credit and insurance, resulting in a lot of money tied up in the logistics chain doing nothing. If you financed the whole chain as one operation, you would need less money," Egbertsen said.

However, he was cautious about progress on this issue in the current economic climate: "Banks are very conservative at the moment, whereas the new products that are needed will require less credit. Since banks live on credit, it's currently not in their interest to create a product that requires less credit," he said. *More info: wpci.iaphworldports.org*

36

Notable numbers

the amount the EU plans to inves in LNG refuelling stations

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EU agrees solutions needed to meet sulphur rules

The controversial European Union directive introducing new limits on the sulphur content of marine fuels came into force officially on 17 December, marking a "clear step forward in protection of people's health and the environment", according to the European Commission. The directive, which is based on regulations adopted by the IMO in 2008, gives EU member states until 17 April 2014 to bring their national legislations into compliance.

The revised directive provides for the reduction of sulphur content in marine fuels in the EU, from 3.5% at present to 0.5% by 2020, but also introduces a much stricter 0.1% limit in 2015 in the North Sea, Baltic Sea and English Channel.

It is this latter provision that has provoked protests from the shipping industry, which argues that it will be impossible to meet the 1 January 2015 deadline in the absence of suitable alternative fuels or proven exhaust gas cleaning techniques. Later in December, EU transport ministers agreed to hold talks this year in an attempt to find solutions to help the industry meet the deadline.

The EU Transport Council made this decision after the French delegation told the meeting that it was concerned that acceptably priced fuels that complied with the new limit would not be available in time to meet the deadline set by EU and IMO regulations.

It called on the commission and member states to work together to find solutions to its concerns. The council agreed that efforts should be made under the upcoming Irish



EU invests in LNG

EU transport commissioner Siim Kallas presented plans on 24 January to develop LNGrefuelling stations in all 139 sea and inland water ports situated within the EU's core TEN-T transport network by 2025. Seaport LNG refuelling stations will get priority, with the target programme completion date set for 2020, followed by inland waterway ports in 2025.

The programme, which will make installation of the refuelling stations obligatory, will cost \$2.8Bn according to the European Commission, and will cover about 10% of all EU seaand-inland water ports.

The commission said that, despite the fact that stricter marine fuel sulphur limits were due into force in 2015, the development of LNG fuelling infrastructure was still at a very early stage. Only Norway and Sweden currently offered terminals for bunkering purposes and these were small.

presidency of the EU.

The European Community Ship owners' Associations (ECSA) immediately welcomed the council's decision, saying that it supported restrictions on sulphur emissions, but that no study of the impact of the introduction of the new 0.1% limit had been carried out.

It recalled that studies carried out by individual countries and universities had indicated that up to 30% of freight could be driven back on to the roads on some routes as a result of the limit.

At the same time, it said, shipping industry studies indicated that "compliant" marine fuel would not be available in time for the

deadline and that exhaust gas cleaning systems and alternative LNG fuel would not be ready for use by 2015. "We hope that the discussions in the working group will take all above points into account," said secretary general Alfons Guinier. "ECSA is fully prepared to contribute in order to eventually find solutions to this long outstanding problem."

Despite this uncertainty, ship owners and ports are forging ahead with plans to order LNGpowered vessels and create bunkering facilities in an effort to reduce emissions in time for the 2015 deadline. Liquefied natural gas is regarded as a compliant and

cost-effective alternative to conventional fuels. Norway claims to have launched 27 ships in the past 12 years that are either LNGpowered or with hybrid propulsion, including domestic ferries and offshore supply vessels. Now Viking Line has launched what it claims is the world's largest LNG-powered passenger ship on its main Finland-Sweden service. The Viking Grace made its maiden voyage from Turku to Stockholm on 15 January (see *P&H*, Jan/Feb 2013, page 40).

Plans to convert a conventional bunkering ship to fuel the Viking Grace have been delayed, and for the time being it will be refuelled by a quavside tanker. However, having sub-zero fuel pipes on busy quaysides is not the optimal safety solution, so the race is on to develop the first LNG bunker new building, with the first prototypes expected to be trialled before the 2015 deadline.

In the meantime, ports are pooling their efforts to make quayside bunkering as safe as possible. Rotterdam and the Swedish port of Gothenburg have announced they will co-operate on creating safe and efficient bunkering facilities. The ports said in a joint statement they would need to make rapid progress in a number of areas to achieve their objective of having LNG-bunkering facilities available for 2015. Apart from building the necessary infrastructure for the provision of LNG for ships, they said, new safety rules would need to be drawn up for LNG handling.

There are also plans to create LNG-bunkering stations in German, Polish and Belgian ports. In view of the global 2020 deadline, both Singapore and South Korean ports have announced feasibility studies for LNG-bunkering stations, with Singapore planning to offer LNG bunkering by late 2014.

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Singapore counters piracy

Piracy in and around Indonesian coastal waters surged in 2012, and Dr Dave Sloggett explained to P&H why that pattern of behaviour did not cross the maritime boundary into Singapore's territorial waters. Sloggett referred to an attack on a tug boat in the Singapore Strait on 8 January, as detailed in an International Maritime Bureau (IMB) report. The speedboat carrying the pirates arrived quickly. The duty bosun was overpowered and held at knife point until the crew mustered under the direction of the master. Once confronted, the pirates left the vessel empty-handed.

This attack is typical of a number of similar events that occurred in the same area last year, he explained, adding that these types of vessels are particularly vulnerable even if the reward for the pirates of conducting such an attack is minimal.

Pirate attacks around the long coastline of Indonesia surged by 48% in 2012. "The majority of these attacks occurred in a series of clusters located close to a number of Indonesian harbors. With the Indonesian Coastguard still under development and a navy, the resources of which are in need of modernisation, there is little to deter pirates from boarding vessels and stealing valuables from the crews," Sloggett explained.

However, Sloggett pointed out that if you looked closely at the detailed figures derived from reports to the IMB in 2012, no attacks took place in Singapore's territorial waters.

Several Indonesian pirate groups were active off the nearby waters of Indonesia "but it was clear that they avoided conducting any attacks on vessels at anchor or in the main port area," Sloggett said.

"One possible explanation for the pirates' behaviour is the level of investment the Singaporean authorities have made in the development of their recognised maritime picture," he said. In July 2011 the minister for transport and second minister for foreign affairs, Lui Tuck Yew, officially commissioned the new Port Operations Control Centre (POCC-Changi) and its new vessel traffic information system (VTIS). "This provides the authorities with an excellent view of movements in and around the territorial waters," Sloggett explained. This information is also fed into a wider regional maritime information system, also hosted by Singapore, which enables Malaysia and Indonesia to work together with Singapore to combat the impact of piracy in the Strait of Malacca.

This arose from the signing of the Regional Co-operation Agreement on Anti-Piracy in Asia (ReCAAP), which came into force in September 2006 at a time when piracy in the Strait of Malacca was a severe problem, Sloggett explained. Singapore hosts the **ReCAAP** Information Sharing Centre (ISC) and recently committed to continuing to host the ISC for a further five years. "The impact of this integrated information sharing has been considerable, with piracy virtually eliminated from the Strait of Malacca in recent years. To counter this impact the pirates have moved inshore," said Sloggett.

To back up the maritime domain awareness that these systems provide, the Maritime and Port Authority of Singapore (MPA) has invested \$15M in six new patrol craft. Differential Global Positioning System (DGPS) on board the vessels can plot the pirate vessels' positions with very high accuracy, and so any developing maritime threat in the area can quickly be appreciated, he said.

Indonesia's plans to develop its coastguard should in time result in downward pressure on piracy it is currently experiencing around its harbors, explained Sloggett.

In Asia, 120 incidents were reported to ReCAAP ISC in 2012, compared with 155 in 2011, representing an 18% drop. It also reported eight attempted attacks last year, with 22 the year before. "The decrease was the largest year on year improvement since 2010," highlighted ReCAAP ISC executive director, Yoshihisa Endo, during the Fourth Nautical Forum in Singapore on 10 January 2013. He further noted that piracy incidents had been trending down in Asia since 2010. Endo attributed the drop to the co-operation between stakeholders, including government agencies and industrial partners.

Notable numbers

the amount that pirate attacks increased along Indonesia's coastline in 2012



the amount of teu a new terminal at Corozal, Panama, could handle

38

MARITIME UPDATE



IMB's 2012 report

Piracy is at a five-year low, the International Chamber of Commerce (ICC) International Maritime Bureau (IMB) global piracy report revealed in January. In 2012, 297 ships were attacked, compared with 439 in 2011, its report revealed. The ICC attributed this drop in number to a reduction of Somali piracy, although "east and west Africa remain the worst hit areas, with 150 attacks in 2012," it said.

Worldwide, 174 ships were boarded by pirates last year, while 28 were hijacked and 28 were fired on. The reporting centre also recorded 67 attempted attacks. In 2012, 585 people were taken hostage onboard, down from 802 in 2011, and a further 26 were kidnapped for ransom in Nigeria. Six crew members were killed and 32 were injured or assaulted, the report revealed.

In the regions:

In Somalia and the Gulf of Aden, 75 ships reported attacks in 2012, compared with 237 in 2011;

In the Gulf of Guinea, 58 incidents were recorded in 2012, including 10 hijackings, while 207 crew members were taken hostage;

In Benin, there were two incidents, including one hijacking, in 2012, compared to 20 incidents, including eight hijackings in 2011;

Nigeria experienced 27 incidents in 2012, with four vessels hijacked, 13 vessels boarded, eight fired on and two attempted attacks. However, only 10 incidents were reported in 2011, including two hijackings;

■ Togo's figures have increased with 15 reports, including, two hijackings in 2012, from five in 2011;

- In Ivory Coast, five incidents were reported in 2012, up from one in 2011;
- In southeast Asia four vessels were hijacked in 2012;

Across the Indonesian archipelago, there were 81 reports of petty theft. This figure accounts for "more than a quarter of global incidents in 2012," said the ICC.



P&O Ferries has installed an eLoran receiver on its vessel Spirit of Britain

eLoran backs up satnav in UK

The world's busiest shipping route, the English Channel, has deployed eLoran radio navigation technology as backup to satellite navigation (satnav) systems such as GPS and Galileo.

The move, announced by UK lighthouse authority Trinity House, will help safeguard shipping satnav against jammers and the effects of space weather. eLoran, which is ground-based, provides shipping with alternative position and timing signals to bolster navigational safety.

Initially, the system is being deployed in the Dover area, the world's busiest shipping lane and the first region globally to attain this capability. It marks the first of up to seven eLoran installations to be implemented along the eastern coast of the UK. Installations are planned in the Thames Estuary and its approaches to Tilbury, the Humber Estuary and its approaches, and in the ports of Middlesbrough, Grangemouth and Aberdeen, while the prototype service at Harwich and Felixstowe will be upgraded. Dr Paul Williams, principal development engineer of the Research and Radionavigation Directorate, explained that there were receivers currently available from UrsaNav and Reelektronika, but "as the market expands they

2.500kV

will be manufactured in greater numbers, which will make the receivers more widely available and cheaper".

Although primarily intended as an aid to maritime navigation, the benefits of eLoran potentially extend beyond shipping, Trinity House chief executive Captain Ian McNaught explained: "Signals from eLoran transmitters could also provide essential backup to telecommunications, smart grid and high frequency trading systems vulnerable to jamming by natural or deliberate means."

Williams warned: "Jammers can be bought for a few pounds on the internet, and they are used regularly on Britain's roads by van drivers determined to defeat the vehicle-tracking systems installed by their employers, and by criminal gangs transporting stolen cars over to the continent. It is a matter of when, not if, one of these jammers affects a ship's navigation system to a dangerous level."

One company that has already has installed an eLoran receiver is P&O Ferries, on its new cross-Channel vessel *Spirit of Britain*. P&O Ferries head of safety management Capt Simon Richardson commented: "Satellite navigation systems are vulnerable to degradation of signal strength and our ships have also experienced occasional loss of signal".

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number of e-navigation ystems manufacturers hat have agreed to an open standard the amount of power ultra-large containership crane require for operatio

IAPH INFO



The Trade Facilitation and PCS committee convenes

The committee met on 18 December last year in Barcelona, where it reviewed the work programme that it agreed in May

Frédéric Dagnet, chairman of the Committee on Trade Facilitation and Port Community Systems (TF&PCS) and head of the strategy and development department at Port of Marseille, took the meeting through a review of the progress that has been made on the committee's work programme since it was agreed in Jerusalem.

The work programme consists of six items:

To monitor and report developments of trade facilitation and PCS discussed and resolved in international organisations such as the WCO and UN/CEFACT. Members agreed to update the present version of the trade facilitation terminology by May in time for the Los Angeles conference. It was agreed that definitions of PCS and Cargo Community Systems should be included and that this would be discussed in forthcoming meetings. Olivier Jean-Degauchy, head of product at Soget, highlighted the fact that definitions for both systems should be broad and encompass the different systems used



Barcelona's Park Güell. The TF&PCS committee met in the city in December

across the continents. To complete the PCS benchmark study, including those outstanding, and extend it to African and South American ports. The budget is being discussed with the IAPH Secretariat. Maite Roman, from Port of Barcelona and member of the committee's secretariat, gave an update of the next stage of the project and explained that 22 ports had been approached by the IAPH Secretariat, but only three responses had been received. It was decided that a different tactic was required and that individual ports should be approached personally by members of the committee so that the objectives and scope of the project could be explained fully. It was agreed that the conference in LA was an ideal opportunity to do this.

To launch a study into possible co-operation between ports regarding PCS standards and interoperability. Dagnet suggested – and attendees agreed – that there be an exchange of emails in the forthcoming weeks to clarify the budget and scope of the study.
 To propose a full working

■ To propose a full working session about PCS for the May conference in Los Angeles. Five



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Do you have strong views about any of the articles in *Ports & Harbors?* Are there other industry issues that you would like to tell us about? **We would be pleased to hear from you so email your views to ph@iaphworldports.org**



speakers were proposed at the meeting.

To monitor and study the impact of maritime regulation on the evolution of PCS, including regulations from IMO and UN directives. It was suggested that this item be developed within the framework of a memorandum of understanding and signed by IAPH and the European Port Community Systems Association (EPCSA). This would "establish a regulatory programme for the development of a technical co-operation programme", said Dagnet. The meeting was divided as to whether the MoU was necessary: some felt it was not needed; others believed a 'symbolic' MoU would be beneficial. A vote by all members of the committee via email was agreed.

To discuss the IT Award 2013. Members were reminded that the deadline had been extended by one month to encourage more entries. At the time of the meeting 13 entries had been received. The award's selection committee is made up of the committee's chair and vice-chair, as well as the IAPH SG. Dagnet called for further volunteers and a number of members put themselves forward. Ole Krebs, office manager for Maritime Cargo Processing Plc, Felixstowe, United Kingdom, was selected to bring geographical balance to the selection committee.

IAPH meets in the Congo

Past president calls for active participation from members in IAPH committees

Past president and MD of Kenya Ports Authority Gichiri Ndua and IAPH managing director for Europe Fer van de Laar co-chaired the Africa & Europe regional meeting on 12 December in Brazzaville, Republic of the Congo.

Ndua reminded delegates of IAPH's new mission statement adopted in May, which promotes ports through information sharing and collaboration. He called for active participation in the technical committees as they play an important role in achieving this goal.

Van de Laar gave an update on WPCI and spoke of the wealth of material that is available on the WPCI website. He noted there was no lead port for the Lease Agreement Template project yet. Ndua commented that this was an important area of work that should interest all members. Van der Laar said the Environmental Ship Index (ESI) currently had about 20 ports participating as incentive providers, including, Hamburg, Le Havre, Los Angeles, New York, and Ashdod, Israel. About 1,500 vessels are participating in ESI, and more are joining, he added. He said the Intermodal Transport project would end following a final session planned for this year.

The election results for the region's VP and executive committee (EXCO) member were discussed. Santiago Milà, from Port of Barcelona, Spain, is currently IAPH's second VP since his election for the term of 2011-13 at the IAPH Busan Conference in May 2011. He is expected to be elected first VP during the LA conference in May, pending final confirmation by the full board at the conference. Javier Gesé Aperte, deputy director of presidency at Puertos del Estado, Spain, was elected as the new EXCO member in August 2012.

It was noted that preparation for the 28th IAPH World Ports Conference in LA in May was well under way. Members should have received electronic newsletters from the port since November. Ndua once again called for active participation in the committees, which will meet on 6 May in LA.

The essay contest was discussed, along with the decision to extend the deadline.

The next Africa & Europe regional meeting will return to Europe in 2013. The venue is likely to be decided during the LA meeting.

Finally, Ndua highlighted the important role IAPH plays in facilitating the sharing of best practices between ports worldwide. He asked that members encourage other ports to join.

The minutes were taken by Henri van der Weide, policy advisor for safety, security, and the environment at Port of Amsterdam.

IAPH's three new VPs

Santiago Milà of the Port of Barcelona, Spain, the incumbent second VP of the Africa & Europe region, and Bill Johnson of the Port of Miami, United States, the current third VP of the Americas region, were endorsed in October 2012 by the regular members in the respective regions to continue with their vice-presidency into the next term of 2013-15.

Priyath Wickrama, chairman of the Sri Lanka Ports Authority, was unanimously elected by the Asia & Oceania region's regular members in December 2012. He will succeed Grant Gilfillan, CEO of Sydney Ports Corporation, Australia, currently serving as the first VP representing the region, who is expected to be nominated and elected as IAPH president at the forthcoming conference in Los Angeles in May.

Wickrama said: "Let me offer my profuse thanks to the honourable president and the members of the

I deeply sense the great obligations of this position Priyath Wickrama New third vice-president of JAPH

Selection Committee of the IAPH, who have unanimously elected me to the high office of IAPH's third VP of [the] Asia/ & Oceania Region. It is a great honour that has been bestowed upon me. I am keenly aware of the magnitude of this office and will do my utmost to perform my duties with credit to you who have reposed confidence in me. I deeply sense the great obligations of this position and shall regard it a



duty and privilege to advance the policies of our association with the greatest vigour. I shall devote myself to the attainment of our objectives and perform the responsibilities entrusted to me to the best of my ability."

At the plenary session of the conference, Milà, Johnson, and Wickrama will be officially installed as first, second, and third VPs of IAPH for 2013/15.



Downtown LA, where the port will be hosting IAPH's event

The final countdown

IAPH's 28th World Ports Conference will focus on delivering fresh perspectives to current industry trends and challenges

When IAPH delegates and guests gather in Los Angeles this May for the International Association of Ports and Harbor's 28th World Ports Conference, a new mission statement – to solve common problems, advance sustainable practices, and improve how ports serve the maritime industry – will drive the agenda.

"This conference will be a milestone in IAPH history," said Geraldine Knatz, executive director of the Port of LA and president of IAPH. "As we reset our compass to navigate a new era as a global organisation representing the voice of ports worldwide, this conference will pave the way for IAPH to broaden its horizons, sharpen its focus, and strengthen its role as an advocate for safe, secure, progressive, and sustainable international trade policies."

Under the banner theme "Working on Today. Focusing on Tomorrow", IAPH delegates will examine key issues facing the international maritime community right now and those emerging on the landscape in the coming months and years, said conference VP Arley Baker.



"The Los Angeles conference will be the venue for sharing expertise and insights on the most pressing port-related issues, and the event will offer delegates new perspectives for tackling the challenges shaping our industry," said Baker. "Our sessions will explore the latest global economic trends, the far-reaching dynamics of climate change, and the future of logistics and port development."

Outside experts and maritime leaders will lead sessions on

New logo, new awards

Capturing the spirit of IAPH's new direction for a new era, a new IAPH logo is expected to be unveiled at the 28th Worlds Port's Conference in Los Angeles. IAPH will also announce the first winners of the Port Communications Award, the Port Environmental Award, and the Los Angeles Open Award. All three are new, and the latter is an essay contest on current and future challenges facing ports.

"We welcome our delegates and their guests to Los Angeles to usher in this new chapter in our history," said Geraldine Knatz, executive director of the Port of Los Angeles and president of IAPH. The new awards build on IAPH's tradition of honouring excellence through its Akiyama Award for the best essay on ports in developing nations and its Information Technology Award for innovation. changing weather patterns, rising sea levels, shifting trade routes, piracy, LNG bunkering and transport, and related policy and infrastructure ramifications.

"This conference is the place to take the pulse of the port industry worldwide and gain a deeper understanding of our most pressing issues," Baker said.

A more in-depth focus on finance will emerge from a new technical committee on Port Finance and Economics, established at the mid-term conference in Jerusalem last May. The committee will provide a forum for sharing best practices, just as IAPH's Port Environment Committee is the organisation's catalyst for developing and promoting sustainable operations through the IAPH World Ports Climate Initiative and other programmes.

For the first time at a biennial World Ports Conference, the LA conference will feature a cruise business forum and a women's forum. At the 2012 mid-term conference in Jerusalem, IAPH established the latter to build awareness on the tremendous human capital women bring to the industry and to develop initiatives to promote their success.

The 28th World Ports Conference takes place from 5-10 May in downtown LA, with the main conference beginning on 7 May. *More info and registration: www.iaph2013.org*

Membership notes

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

Temporary member

Complexe Industrialo Portuaire de Kribi

Address:	BP 1450 Yaounde, Cameroon
Telephone:	+237-2265-3033
Fax:	+237-2214-0214
Website:	www.kribiport.cm
Representative:	Melom Patrice Barthélémy, co-ordinator

New membership directory

The 2013 edition of the IAPH Membership Directory has been published and was sent to members in early February. The IAPH Secretariat in Tokyo has expressed its thanks to all members who helped to keep the contents up to date. It is also grateful to the sponsors who supported the publication by placing advertisements. The directory is available exclusively to members as a benefit of their IAPH membership and is not for sale to non-members. For additional copies or any other enquiries, please contact the IAPH Secretariat at directory@iaphworldports.org.

New Finance Committee vice-chairperson appointed

Molly Campbell, deputy executive director of the Finance and Administration group at the Port of Los Angeles, United States, has been appointed vice-chairperson of the IAPH Port Finance and Economics Committee by president Geraldine Knatz. It is a new committee that was formed in Jerusalem, Israel, in May 2012, when the association met for its Mid-term Ports Conference and Board Meeting.

Chairman Dov Frohlinger, chief operating officer at Israel Ports Company welcomed Campbell to the committee. If you are a member of IAPH and are interested in joining the committee, especially if you are a financial director or senior economist, please contact info@iaphworldports.org. The committee has started planning its

Molly Campbell, from Port of Los Angeles, is the new vicechairperson of the Port Finance and Economics Committee

agenda for its upcoming meeting at the IAPH 2013 conference in LA and welcomes suggestions for presentations at the meeting.



Dates for your diary

A selection of forthcoming maritime courses and conferences

Mayala

Marc	n
12–14:	TOC Container Supply Chain: Asia – Hong Kong www.tocevents-asia.com
18–19:	AAPA Spring Conference – Washington DC, USA www.aapa-ports.org
18–20:	Asia/Oceania Regional Meeting – Abu Dhabi, UAE www.iaphworldports.org
27–28:	11th Intermodal Africa North – Dakar, Senegal www.transportevents.com
April	
- 7–12:	Singapore Maritime Week 2013 – Singapore www.smw.sg
9 onwards:	Fundamentals of Maritime Trade & Transport – distance learning <i>www.ibc-academy.com</i>
11–12:	Port & Terminal Technology USA 2013 – Norfolk, USA www.millenniumconferences.com
15–19:	Seminar on Dredging and Reclamation – Sao Paulo, Brazil www.iadc-dredging.com
22-3 May:	Integrated Coastal Zone Management – Delft, Netherlands <i>www.unesco-ihe.org</i>
22–10 May:	International Port Seminar – Delft, Netherlands www.unesco-ihe.org
23–24:	1st MED Ports – Alexandria, Egypt www.transportevents.com
May	
6–10:	28th IAPH World Ports Conference – Los Angeles, USA www.iaph2013.org
13–24:	IT & EDI in Port Business – Antwerp, Belgium www.portofantwerp.com/apec
17–19:	1st International Seaport Festival 2013 – Vung Tau province, Vietnam <i>http://seaportfestival.net</i>
21–22:	PIANC AGA 2013 – Marseilles, France www.pianc.org

- 23-24: PIANC Mediterranean Days, 3rd edition -Marseilles, France www.pianc.org
- 30-31: ESPO 2013 Conference Varna, Bulgaria www.espo.be



▲ The 28th conference will offer varying perspectives about piracy mitigation

IAPH's evolving agenda

The World Ports Conference in Los Angeles will shine a spotlight on the organisation's important work, says **Arley Baker**, VP of the 28th World Ports Conference and co-chair of the IAPH Communications and Community Relations Committee

One of the most impressive aspects of IAPH is that it is an organisation that never stands still or rests on its laurels. It is dynamic in every sense of the word, and through its various technical committees IAPH members are keen to look across the horizon to see what is next and how ports around the world can work together to advance common objectives, voice concerns, and make a difference in the global community.

To this end, the biennial 28th World Ports Conference is the optimal venue for IAPH delegates to re-convene, hear technical committee updates, gain fresh perspectives on the trends and issues that ports and harbors face worldwide, and take necessary actions to remain at the forefront of issues that affect our ports and the industries we serve.

The conference in Los Angeles this May will be no exception in terms of evolving our agenda as an organisation. For example, IAPH took a stance of concern on piracy two years ago at the 27th World Ports Conference in Busan, South Korea. Although we now endeavour to do more, it is a complex issue. The 28th conference will offer varying perspectives on piracy mitigation in order for IAPH to formulate appropriate next steps in terms of advocating for more to be done to protect lives, cargo, and the flow of seaborne trade through pirate-infested zones.

The transport and handling of LNG is also an emerging trend for ports – and one being closely tracked by a project team within the World Ports Climate Initiative (WPCI). In May, we will hear the business case for using LNG-powered cargo vessels. This will be part of a broader discussion about the emerging regulatory standards that will shape LNG bunkering, cargo handling, and storage in ports. Conference delegates will also gain a solid understanding of how IAPH is working as a voice for ports to shape LNG-related policies pertaining to port authorities.

Disaster recovery and analysis, rising trends in extreme weather events, and varying approaches driving 'zero emission' strategies will also be among the wide variety of topics discussed in Los Angeles. Other sessions will examine ways to support the advancement of women in the port industry, how ports can manage the land-side – and bottom line – of cruise operations, and approaches to analysing the economic justifications of port projects.

In support of an organisation that is on the move as "the global ports forum for industry collaboration and excellence", we have a truly exciting programme of working sessions and social events planned for the 28th World Ports Conference in Los Angeles and we look forward to your visit and participation in these important discussions. Our programme is quickly firming up, and session updates will be posted frequently in the coming weeks at www.iaph2013.org. See you in May!



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