



May/June 2013 Vol 58 No 3

PORTS & HARBORS

Official Journal of the International Association of Ports and Harbors

Running to keep up

Tight competition for concessions in Africa

Double take

Tandem lifts make light work of box ships

Destination: Seychelles

Port Victoria's campaign to bring back cruises

Hungry for more

African ports see capacity increase



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8308 Capellen | Grand Duchy of Luxembourg

T +352 39 89 11 F +352 39 96 43 | info@jandenulgroup.com

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A pelican, a bird found in Africa, enjoys a fish. Many of Africa's ports are operating at capacity and some are considering their options to increase it

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PUBLISHER

Susumu Naruse
Secretary General, IAPH
info@iaphworldports.org

EDITOR

Penny Thomas
penny.thomas@ihs.com

SENIOR REPORTER

Jem Newton
jem.newton@ihs.com

CHIEF SUB-EDITOR

Jonathan Maynard

HEAD OF SALES

Adam Foster
adam.foster@ihs.com

DESIGN

**Roberto Filistad, Hannah Kidd,
Tim Harrison, Jeff Pye, Matt
Ramsdale, Carolina Lorenzo**

PRODUCTION

**Sarah Treacy, Kriss Holliday and
Martyn Buchanan**

IMAGE SERVICES MANAGER

Jo Agius

EDITOR-IN-CHIEF

Tony Slinn
tony.slinn@ihs.com

ASSOCIATE EDITOR

Aya Fujinami
IAPH
ph@iaphworldports.org

EDITORIAL & PRODUCTION

IHS Fairplay
Sentinel House, 163 Brighton Road,
Coulsons, Surrey CR5 2YH, UK
Tel: +44 (0)203 253 2100
Web: www.ihsfairplay.com

SUBSCRIPTIONS

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contact the IAPH at:
7th Floor, South Tower,
New Pier Takeshiba
1-16-1 Kaigan, Minato-ku
Tokyo 105-0022, Japan
Tel: +81-3-5403-2770
Fax: +81-3-5403-7651
Email: ph@iaphworldports.org
Web: www.iaphworldports.org

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Future connections

Secretary General Naruse contemplates the massive project that will link Europe with Asia

Susumu Naruse

Secretary General – The International Association of Ports and Harbors



I visited Khalifa Port while in Abu Dhabi to attend the Asia/Oceania regional meeting, and was impressed by the goals of the project, which includes not only a 15M teu capacity container port but also a 430km² industrial zone around it. Unlike the Port of Jebel Ali 40km south, which handles a lot of transshipment containers, Khalifa is mainly aimed at handling cargo generated by a variety of industries in its industrial zone, Kizad, thus transforming the economy of Abu Dhabi from being hugely oil-dependent to multifocused. By doing this, it can reportedly create 100,000 jobs.

The most intriguing element of this project is the plan to link Khalifa Port with Europe via a rail system. The intention is to transfer goods by rail to Europe directly from the port. A 10-year timeframe has been set, with construction of the purpose-built and double-stacked rail network across the UAE already under way. The construction is likely to face a number of challenges,

particularly as the rail system needs to cross war-devastated Syria. This is an ambitious plan, which I would say is far from possible, but given the vast amounts of oil money at its disposal I believe that one day it will be complete. If this is the case, it could dramatically change the trade pattern between Asia and Europe.

The regional Asia/Oceania meeting was attended by some 40

members from 15 countries. It was decided that the 30th IAPH World Ports Conference in 2017 would take place in Bali, Indonesia, and be jointly hosted by Indonesia Port Corporations I, II, III, and IV. It was also confirmed that the IAPH Mid-term Ports Conference would take place in Sydney, Australia, on 6-10 April 2014.

Finally, it was confirmed that Priyath Wickrama, chairman of Sri Lanka Ports Authority, who was unanimously elected as the region's vice-president by the regular members last year, succeed Grant Gilfillan as VP. At the time of writing, Gilfillan was to be elected as president in Los Angeles. With by far the largest membership among the three IAPH regions, the Asia/Oceania region cannot be said to be very active in technical committee activities and discussions about IAPH policies. I would like to see this change under the leadership of their new vice-president. **PH**

“The plan is to link
Khalifa Port with Europe
via a rail system”

Port updates

MITSUMI WINS IN INDONESIA

Mitsui has won the bid to operate one of three box terminals at Kalibaru North Container Terminal at the Indonesian Port of Tanjung Priok. IPC II CEO Richard Joost Lino said it would construct, finance, and operate one Kalibaru container terminal, enabling operations to commence by September 2014. IPC II is still looking for partners for the other two box terminals and two oil and gas terminals at Kalibaru – an expansion of the existing Tanjung Priok Port.

GATEWAY GREETES CRANES

DP World London Gateway received its first delivery of cranes in March. The cranes are 138m high, weigh 2,000 tonnes each, can lift four cranes at once, and will be able to service the largest vessels. The ZPMC cranes left Shanghai on 7 January and arrived in London after a two-month journey.

CANAL COSTS INCREASE

Germany's Kiel Canal upgrade is facing further delays and cost increases, according to German media reports. Newspapers reported that the infrastructure project would require €360M (\$473M) in funding – €60M more than was planned. The German transport ministry further told reporters that the canal modernisation would take two years longer than forecast, with completion of the project now expected in 2020 instead of 2018.

APMT TO OPERATE AGT

APM Terminals has agreed a 28-year concession with Turkish petroleum manufacturer Petkim to operate Aegean Gateway Terminal (AGT), said APMT in a statement. Operations are due to start in 2015. Under the agreement, APM Terminals will assume full operational responsibility for the container terminal and general cargo operations in AGT. The terminal's construction is being carried out by an APM Terminals' partner but under APM Terminals' technical and operational specifications, and initial investment is said to be about \$400M.



Photo: Sydney Ports

“I think they paid the right price”

Grant Gilfillan

CEO, Sydney Ports Corporation

Australian ports fetch \$5Bn

A consortium has acquired two of Australia's major ports for AUS\$5.07Bn (US\$5.3Bn) and is now eyeing international port assets. NSW Ports, which made the successful bid for Port Botany Sydney and Port Kembla on the south coast, brings together Industry Funds Management (IFM), Australian Super, QSuper, and Tawreed Investments, a wholly owned subsidiary of the Abu Dhabi Investment Authority. IFM, which heads the consortium, also holds a stake in the Port of Brisbane. “We’ve now got three ports in Australia and we will be looking for port assets overseas as well,” Michael Hanna, head of infrastructure – Australia at IFM,

told *P&H*. “If we find the right port for the right price, we’ll bid.”

Australian superannuation funds traditionally invested in stocks, but with high market volatility the trend in infrastructure investments is growing.

The consortium holds stakes in airports, including Manchester, as well as European and North American infrastructure. “With infrastructure there’s less volatility and the returns are more robust,” said Hanna.

State treasurer Mike Baird announced the winning bid on 12 April, calling it “the largest-ever NSW government asset transaction in terms of net proceeds”. Port Botany container terminal alone

went for AUS\$4.31Bn.

Opposition parties in the state, however, warned that privatising the facilities would lead to higher port charges. “We are very conscious of the need to be fair,” said Hanna. “We don’t expect any dramatic change in the short term.”

Patrick Stevedores at Port Botany also raised concerns regarding the terms of the contract. “We’ll meet with all stakeholders to understand their views and requirements before we do anything. That’s what we did in Brisbane,” said Hanna.

Sydney Ports Corporation retains all regulatory functions at Port Botany, including pilotage, navigation, vessel traffic, and emergency response. It also keeps the Sydney Harbour ports, dry bulk, and the new cruise terminal at White Bay, which received its first ship, *Pacific Pearl*, in April.

“The winning bidder definitely wanted the assets,” said Grant Gilfillan, CEO of Sydney Ports Corporation and IAPH 1st vice president. “I understand there was not much difference in the bids. Having run the business for five years I think they paid the right price.” He also said he was pleased that the 3.2M cap on container traffic at Port Botany was lifted.

Most of the money raised from the lease will go towards roads, including improved access to the terminal. At the time of writing, the transaction is expected to close on 31 May 2013.

Antwerp champions re-search into sediment re-use

Port of Antwerp is marketing the dredged sediment that is processed as part of its AMORAS project in the hope that it will be put to good use. It is trying to ‘valorise’ the sediment by turning it into something worthwhile. By adding a ‘v’ the project became known as VAMORAS.

About 500,000 tonnes of dry matter is dredged on a yearly basis

at the port to maintain the required depths in its navigation channels and harbor docks. With the traditional storage facilities on land as well as in underwater cells being almost completely used and with no possibilities to extend them, the treatment and storage facility AMORAS was realised by the Flemish government between 2008 and 2011.

The AMORAS installation is based on three main activities (see *Ports & Harbors* May/June 2012) and results in filter cakes. Storage of these cakes takes place on a site near the AMORAS treatment facility, where they can be stacked up to a height of about 50m. Both non-contaminated and contaminated material – the latter representing about 20% – can be stored in this way and it is estimated that the storage facility can accommodate all the sludge from the Port of Antwerp for at least the next 30 years.



Photo: Port of Virginia

The port authority will restructure VIT into a limited liability corporation

Port of Virginia rejects privatisation

Virginia is abandoning plans to privatise its box terminals and will instead overhaul its own operations. In March the Virginia Port Authority (VPA) Board of Commissioners voted to reject two unsolicited proposals submitted last year by APM Terminals and JP Morgan. The proposals were seeking long-term public-private partnerships to become VPA's terminal operating

company by taking over Virginia International Terminals (VIT), VPA's operating company.

Instead, VPA will restructure VIT from a non-stock corporation to a limited liability corporation under more direct control of the VPA, the port affirmed. VPA proposed its restructure plan last year and considered it in parallel to the privatisation offers.

The Flemish government is also considering the re-use of the non-contaminated filter cakes and so increase the lifetime of the storage facility. Seven partners are participating in this project with the government.

Three are from the industrial sector: Argex, Gebr De Rycke, and Wienerberger; three are research institutions: VITO, WTCB, and BRRC; and the Port of Antwerp is the stakeholder and co-ordinator.

The project includes research into the feasibility of re-using the dredged materials, as well as its

market potential for several high-value applications, such as in the production of concrete products, bricks or lightweight aggregates, or in foundations and road works. Applications being considered include use in clay granules, bricks, or as filler in concrete.

Obtaining the necessary certificates to prove the sediment is not harmful and is fit for purpose is one of the main focuses of VAMORAS. It also intends to dispel the current negative image of dredged sludge through a dedicated campaign to take away the

The decision to reject the proposals and to restructure alone was based on several factors, the port stated, including analysis showing that continuing as a public operation would provide more cash flow compared with the APM and JP Morgan schemes.

The revenue and cargo volume forecasts by the two proposals were comparable to VPA's plan, according to the port, which believes it will be able to generate sufficient revenue over time to allow the VPA to service its existing debt and fund the capital expenditures described in VPA's updated 2040 strategic plan.

The board pointed out that VPA's container business was improving after several years of slow growth, and that 2012 was the port's second-best year for cargo volume. Also, with the expansion of the Panama Canal in 2015, increased use of the Suez Canal, and the move to larger cargo vessels, "now is not the optimal time to concession operations at the Port of Virginia," the board noted.

VPA is part of the Commonwealth of Virginia and reports its operations and finances to the governor. The new long-term strategic plan will focus on advancing major capital improvements, reducing debt levels, and attracting new distribution centres and manufacturers to help drive increased cargo and economic development, the port said. "We will move forward as a stronger, leaner organisation that is better positioned to serve the ocean carriers and port customers, attract cargo, and be more accountable to taxpayers," said VPA chairman William Fralin.

obstacles that hinder its introduction to the market.

Argex and Wienerberger have used the filter cake material on a semi-industrial scale in their products including lightweight expanded aggregates and bricks. In both cases, 10% of the traditional raw material (clay) has been substituted by the residual material from the AMORAS facility. Other applications for the sediment will also be researched as part of project. The VAMORAS project is scheduled to run until the end of September this year.

Port updates

BERTH EXPANSION AT ACT

Aqaba Container Terminal (ACT) in Jordan completed the first part of its berth expansion in March, adding 200m of new quay, two new STS cranes, and four rubber tyre gantry cranes, representing an investment of \$140M. ACT saw a 16% increase in container throughput in 2012 to 833,000teu.

CHINA IN ZEEBRUGGE

China Shipping Terminal signed an MoU in March with APM Terminals, stating the intention to purchase a 24% share of APM Terminals Zeebrugge. The transaction is scheduled to be finalised by the end of June 2013.

ICTSI EXPANSION

Philippines port operator ICTSI is conducting a feasibility study on the possible expansion of the Mindanao Container Terminal at Tagoloan, Misamis Oriental, in southern Philippines. The state-owned Phividec Industrial Authority told local reporters it had agreed in principle with ICTSI for the expansion of MCT after it handled volumes close to full capacity in 2012. MCT's annual capacity stands at 270,000teu.

LOW SULPHUR FOR VENICE

Cruise lines whose ships call at the Port of Venice agreed in March to use 'green' fuel while in the lagoon. The agreement, known as Venice Blue Flag II, requires that cruise ships' main and auxiliary engines contain fuel with a sulphur content of no more than 0.1%, Venezia Terminal Passeggeri, the company managing cruise traffic at the Venice port, said in a statement.

DOUBLE BOOM

Container cranes have been designed for the pier at Nemrut Bay in Turkey by Grup TCB and Liebherr, where Grup TCB operates its container terminal TCEEGE. Mobile harbor cranes were previously used to service container ships from both sides of the jetty. But the new STS cranes have a double boom to simultaneously operate on both sides of the pier and handle two vessels at the same time.

Bought and sold

MSC SELLS STAKE

Container line MSC has agreed to sell 35% of its terminal operations to a private equity fund for \$1.9Bn. Global Infrastructure Partners (GIP) will purchase the stake in Terminal Investment Limited, MSC's terminal division. The deal is expected to close by mid-year. The sale will allow MSC to "reinforce" its terminal business and provide growth opportunities, the company stated. "This will complement MSC's strategy to maintain a leading position in the industry," said MSC VP Diego Aponte.

VENEZUELA'S ORDER

Cargotec's Kalmar said in March it had secured a large order for port equipment to Venezuela's government-owned port operator Bolivariana de Puertos (Bolipuertos), scheduled for delivery in May 2013. The order includes 30 Kalmar reachstackers, 4 empty container handlers, 8 heavy forklifts, 9 light forklifts, 7 heavy terminal tractors, 41 medium terminal tractors, and 1 zero-emission rubber-tyred gantry crane.

CRANES FOR INDONESIA

Konecranes signed an agreement in March to deliver container handling equipment to state-owned terminal operator PT Pelabuhan Indonesia III. The order includes 10 STS cranes, 20 automatic stacking cranes, and 5 straddle carriers. The equipment is scheduled for delivery in 2014 and 2016.

ORDERS FROM DALIAN

MacGregor has received an order from Dalian Shipbuilding Industry Co Ltd in China for 32 variable frequency drive (VFD) electric cranes, the company said in March. The cranes will feature on eight 3,900teu container vessels being built at the yard for Pacific International Lines (PIL). The deliveries are planned for 2014 and 2015. This order builds on a previous contract for 16 electric cranes for the first four in the series, also under construction at Dalian.



Ports should see recyclables as an opportunity

Photo: Shutterstock

Recycling slow to gather momentum

Major ports, especially those visited by cruise ships, have been caught out by regulations that since January ban the dumping of nearly all kinds of waste at sea. Although cruise companies say most ports are equipped to process large quantities of standard garbage, they complain that too many have inadequate facilities for handling not only hazardous waste but also recyclables. And even when there are such facilities, the ports are charging "sky-high tariffs" to do so, pointed out Francesco Balbi,

environmental co-ordinator at MSC Cruises.

At certain ports, cruise ships are forced to hire outside contractors with recycling facilities at considerable extra cost. Most ports accept only a specific amount of waste per ship on an 'indirect cost' basis – volumes surplus to these limits must be disposed of at additional cost to the vessel. As Balbi pointed out: "Ports are not taking the opportunity to collect our recyclables properly and make money with them. On the other

hand, we are not rewarded in any way for our efforts to sort and dispose of recyclables."

The cruise ship industry has made considerable efforts to comply with the regulations drawn up by the EU, IMO, Maritime and Coastguard, and other agencies. As a result, cruise ships may no longer dump even processed food waste. This means an extra 5-10% of their garbage must be disposed of at port reception facilities.

But ports are catching up. For instance, Barcelona-based Tradebe, a specialist in the treatment of contaminated waters, will open a terminal this year at China's Ningbo port with a storage capacity of over 450,000m³. "Demand for our services has followed a consistent trend," said a spokeswoman.

And Nature, a company that specialises in processing maritime garbage, will open new waste reception facilities in Panama, the Middle East, and Singapore in the next three years. That's in addition to existing facilities in Gibraltar, the Netherlands, and Norway.

Associated British Ports – who makes arrangements for the disposal of about 50,000 tonnes of ship-generated general solid waste and 6M litres of oily waste a year from across its 21 ports – is working on methods of minimising waste. Port of Southampton is helping to fund the conversion of certain kinds of waste into energy. "One company's waste might be another company's value resource," it pointed out.

New SG at PMAESA

Franklin Mziray has been appointed secretary-general of the Port Management Association of Eastern and Southern Africa (PMAESA), which took effect from March 2013. Mziray stepped into the role with the promise to reposition PMAESA as a vehicle to promote Africa's economic integration. He will do this by sharing information and experiences on port operations and performance among PMAESA's member states, to help improve productivity and promote best practice.

At the top of his agenda is a nine-point deliverable performance indicator set by the board. These

include coming up with a five-year business plan to boost the secretariat's performance; to formulate an organisational structure in line with PMAESA constitution; to create a sustainable funding strategy that will in turn inform the business plan; and to re-brand PMAESA.

This last point includes a new logo that will be launched at the annual conference in Durban in November this year, and will be created via a competition championed by the association. He has also been tasked to raise PMAESA's profile in the media, for which the board has marketing strategy support.

Mziray is also responsible for the Durban conference, which will also mark PMAESA's 40th anniversary celebrations.

Thank you for the honor of hosting
the 28th World Ports Conference.



We hope you enjoyed the event
as much as we enjoyed your visit.



Cash & cargo

BILBAO SEES BOX HIGH

Port of Bilbao handled a new record of 610,131 teu in 2012, representing 22% of the port's total traffic. Exports grew by 4% due to more export activity in Spain. Total traffic in 2012 was 29.5M tonnes, down 7.8% as a result of less demand for certain hydrocarbons. Solid bulk saw a 6.5% growth due to an increase in coal and coke.

HAMBURG DOWN

Port of Hamburg's total throughput in 2012 was 131M tonnes, slightly below the previous year, said the port. Its seaborne cargo throughput reached 130.9M tonnes, down 1%. General cargo throughput at 91.5M tonnes was 1.2% below that of 2011. Bulk cargo throughput also remained just below the 2011 total at 39.4M tonnes, and in 2012 8.9M teu was handled, 1.7% less than the previous year.

FEWER FERRIES

Fewer sea-going ships visited the Port of Rotterdam in 2012, said the port in February. Departures fell by 2,347 to 32,057 ship visits, which the port said was due in part to a reduced number of ferry visits. Throughput in 2012 increased by 1.7% to 442M tonnes.

ICTSI UP

Philippine ports operator ICTSI posted a 10% growth in net profits for the full year 2012, which is mainly attributed to growth in international and domestic trades. It reported profits of \$143.2M last year against profits of \$130.5M in 2011. Volumes handled across its ports last year increased by 8% to 5.6M teu from 5.2M teu handled in 2011. The company said it was mainly due to growth in international and domestic trade, new shipping line customers and routes, and the continuous containerisation of break bulk cargoes.

BOX EXPORTS UP

Global containerised trade in January rose by 156,124 teu, or 1.5%, compared with January 2011, the latest aggregated volume data survey of UK-based consultancy Container Trade Statistics (CTS) shows. Containerised exports in January fell to 10,494,30 teu compared with December, down 2.27%.

Port of Baltimore is one of just two US east coast ports that have a 15.2m depth

Photo: Maryland Ports Authority



US budget reveals shortfall for logistics

Obama's reduced budget for the 2014 financial year could mean US ports will miss out on the predicted surge in cargo flowing through the Panama Canal after it is widened in 2014. The administration's proposal, released on 10 April, slashes by 28% the funding for the US Army Corps' Coastal Navigation Construction programme – used to deepen channels and harbors to accommodate post-Panamax vessels – from \$151M proposed for FY13 to \$108M in FY14.

While the \$890M Obama proposes to set aside next year to maintain current draught levels is \$42M more than 2013, it falls far short of the level of spending recommended by Congress. Last year Capitol Hill lawmakers advised that the administration pay for maintenance by getting full use of the \$1.6Bn collected from shippers through the Harbor Maintenance Tax.

"On the one hand, we're pleased the administration has bumped up its budget request for vital navigation channel maintenance projects," said AAPA president, Kurt Nagle.

"On the other hand, we're disappointed the president's budget request is still hundreds of millions shy of what Congress called for," he added.

On the same day that Obama released his budget, the American

Society of Civil Engineers (ASCE) submitted testimony to a US Senate hearing on what the expanded Panama Canal means for freight infrastructure. A big reason why ports are seeking help from the federal government to deepen their channels is so they can take advantage of the widening of the Panama Canal, which is scheduled to be completed by 2015.

While several ports are ready to accommodate post-Panamax vessels, only two ports on the US east coast – Baltimore and Norfolk, Virginia – currently have 15.2m channels, the depth considered necessary to take advantage of the economies of scale offered by the larger post-Panamax fleet. That places many ports at a disadvantage. ASCE gave the port industry an unremarkable 'C' grade (on an A-F scale) in its 2103 annual Report Card for American Infrastructure. It noted that while port authorities and their private partners have over \$46Bn in capital improvements planned from now until 2016, "federal funding has declined for both navigable waterways and the landside freight connections that are needed to move goods to and from ports."

One of the biggest challenges to moving post-Panamax goods to the market will be inadequate

connections from the port terminals to roads and rail lines, ASCE said in its testimony. It found that roads that connect the national interstate highway system to the ports are in greater need of surface repair work than non-interstate routes.

ASCE also noted that roads connecting to rail terminals have 50% more deficient route miles. Non-existent shoulders and narrow road widths and turn lanes are critical barriers for intermodal trucks delivering ocean containers from ports to inland destinations. Containers are typically driven from ships to rail yards as much as 5 miles (8km) away, ASCE explained, so extending and upgrading the tracks that connect ports to the rail main lines can save time and fuel. For example, improving a rail connection at the Port of Mobile, Alabama, is expected to cut transport costs by about \$25/container, ASCE pointed out.

To remain competitive on a global scale, US marine ports and inland waterways will require investment in the coming decades beyond the annual \$14.4Bn currently expected. ASCE reports that with an additional investment of \$15.8Bn between now and 2020, the United States can eliminate the drag on economic growth and protect \$270Bn in US exports.

Waterfront fight

The New York waterfront is in the middle of an environmental row pitting the residents of the Brooklyn neighbourhood of Red Hook against US regulators looking to dredge a waterway overloaded with decades of pollution.

The Gowanus Canal, a 2.4km waterway dating from the mid-1800s, was once a major industrial route connecting terminals along the waterfront to the paper mills, tanneries, and chemical plants that once operated along the canal. But years of discharges, including raw sewage overflows and industrial pollutants, left the canal one of the nation's most seriously

contaminated waterways.

The US Environmental Protection agency has drawn up a 10-year plan to dredge 460,000m³ of contaminated material at a cost of \$500M. The problem lies in where to put the dredged material. EPA has proposed storing some of the material, after treating it, in a confined disposal facility on privately owned property at the Gowanus Bay Terminal in Red Hook, within an existing berthing slip.

The agency is also proposing that combined sewer overflow from two discharge areas in the upper portion of the canal be outfitted

with controls to reduce the total volume of discharges by 58-74%.

After holding several community outreach meetings in February and March, EPA found that residents of the neighbourhood were overwhelmingly against the plan, however, fearing that more than a dozen toxic contaminants that have been identified in the material could be re-released over time.

EPA said the opposition could require it to consider more expensive alternatives involving transporting the material to another area. "If there's no acceptance of the plan by the community we will weigh that significantly" in determining the final plan, an EPA spokesman told *P&H*. A public comment period on EPA's proposal ended on 27 April.

Neighbours support industrial clusters

The ports of Antwerp and Rotterdam have joined forces to map a route and create a joint cost estimate to build a set of pipelines. The ports will use this information to draw up business proposals for potential investors in their individual ports. Both ports are at the centre of two large industrial clusters and so pipelines are of vital importance to these businesses, said the ports in a statement released in March.

Antwerp Port Authority told *P&H*: "The European chemical industry has to compete against industries from across the world, often located in regions that have a significant advantage on feedstock costs and energy prices. Clustering and integration is Europe's strength. As cornerstones in what is still the world's foremost chemical region, Antwerp and Rotterdam decided to explore whether collaboration and further integration through pipelines would lead to an improved competitive position of both ports and industrial clusters in a global scheme."

The study considered a group of four pipelines to carry oil products, chemicals, industrial gases, and carbon dioxide, respectively. The proposed route runs 130km from the centre of the Port of Antwerp to the Maasvlakte area of the Port of Rotterdam. Part of this route will follow the existing 75km pipeline corridor. There are already pipelines that link the various companies totalling more than 1000km.

Port of Rotterdam told *P&H* that it "decided to collaborate because some established customers showed a basic interest in new pipelines to both of us".

Pipeline systems are a safe, sustainable alternative to transport by road, rail or barge, said Antwerp Port Authority in a statement. It added that if any potential investors or users "show interest in developing pipeline infrastructure between the ports and if there



Part of the proposed route for the new pipelines will follow the existing pipelines

is a clear win-win for both port communities, then a detailed plan for construction of the pipeline bundle can be developed jointly with investors and other market players later this year."

Cash & cargo

BIODIESEL FUELS FIGURES

Port of Rotterdam's biofuels throughput increased by 24% in 2012 to 5.9M tonnes compared with 2011. This can mainly be attributed to biodiesel, said the port in a statement. Import and export volumes of biodiesels both increased by a total of 1.5M tonnes. Throughput of ethanol dropped 17% to 1.4M tonnes and that of ETBE dropped 8% to 0.6M tonnes.

VOLUMES DOWN IN LA

Port of LA's cargo volumes fell in March this year, following a 17% surge in February, said the port in a statement. March volumes decreased by 22.6% compared with the same month the previous year. Imports dropped 28.7%, from 324,758teu in March 2012 to 231,396teu in March this year. Exports decreased by 17.9%, from 188,155teu in March 2012 to 154,428teu in March 2013.

ORE PRICES TO DROP

The price of iron ore imported to China is expected to drop by \$10-15 per tonne in 2013, Xiaoqi Wang, vice-chairman of the China Iron & Steel Association, said at the 2013 International Iron Ore Market Seminar in April. The main reason is the predicted oversupply in China's iron ore market in 2H13, which would see 770M tonnes of iron ore imported in 2013, up 3.5% from 744M tonnes in 2012, he said. Production of steel in China increased by more than 9% in 2Q13 year on year, while consumption grew by 3.1%.

LNG IN PERSPECTIVE

Prospects for LNG demand appear bright, but caution is needed before shipowners invest in newbuildings, shipbroker Banchemo Costa warned in April. Like other areas of shipping, the LNG market has experienced the usual cycles of over-ordering and depressed rates in the past 40 years. "It is important not to get carried away and be aware of the right timing," he said. LNG shipping may also have to compete with pipelines as Western Europe and China can receive piped gas from Russia and Central Asia. China imports more piped gas from Turkmenistan and its new pipeline from eastern Siberia will be commissioned around 2018.

Photo: Antwerp Port Authority

Anticipating Africa's next move

International Container Terminal Services Inc's (ICTSI's) chief financial officer and head of investments for the Africa region, **Gagan Seksaria**, has developed a picture of the investment challenges and patterns during his travels around some of Africa's ports

When Alice meets the Red Queen during a game of chess in Lewis Carroll's *Through the Looking-Glass*, she is told: "Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

I think this quote describes the African infrastructure investment environment rather well. The maritime and port infrastructure sector in Africa represents a wealth of opportunities and I wish I were the only one to know it. But as this is not the case, it is becoming an increasingly competitive landscape.

At the risk of being old-fashioned by making sweeping generalisations about the African business landscape, it is clear that the opportunity is vast. Let us consider a few broad measures that bring out the latent potential of the African

container shipping market and illustrate the gap between its current state and its full potential. Most African markets are only about half-way, compared with the global containerisation average of about two-thirds of 'containerisable' cargo, but this is rapidly changing. As an example, statistics made available by the Nigerian Ports Authority indicate that while dry bulk cargo volume in Nigeria grew by 9% between 2006 and 2011, container volume increased by 104% during the same period.

Another broad but interesting measure of this consumption-driven, trade growth-led market's potential is to compare a country's container volume in teu as a percentage of its population. Figures from the International Finance Corporation reveal this to be 0.9% for Nigeria and 1.8% for Kenya compared with 8.1% for South Africa and 12.4% for the United

States. This measure is broad and not without flaws but does give a good sense of a country's level of consumption and industrialisation compared with its potential.

It is also interesting to consider the impact of the high cost of importing a laden container in most of Africa that must render a large proportion of potential business or trade transactions – especially those dealing with price-competitive or low-value products – uncompetitive and therefore absent. According to a World Bank study, the average cost of importing a 20ft container into sub-Saharan Africa stands at \$2,567, compared with \$1,200 for India and \$1,315 for the United States. Herein lies the potential. Improved transport infrastructure and, in turn, overall supply chain efficiency will inject at least 4-6% additional container volume growth currently absent



Alice runs with the Red Queen in *Through the Looking Glass*... Gagan Seksaria believes you have to run twice as fast in Africa, as business competition is tight

from all calculations and projections.

These inefficiencies are directly or indirectly related to the lack of quality port capacity across most of Africa. The process for creating additional capacity is slower than ideal and intertwined with inefficiencies either usual in the global port infrastructure business or unique to Africa. Let us consider some of these inefficiencies.

As I travel around the continent I notice that some parts of the coast are fragmented into a number of small economies. This could be due to weak strategic regional co-operation as well as a resistance to accessible border operations. Whatever the reason, it has resulted in each country developing its own expensive national port infrastructure, which has suppressed the emergence of a regional port and transport system. Existing port infrastructure is creaking, especially in some of the smaller economies, but it would still be a challenge to justify brownfield or greenfield investments given the relatively small local volumes these facilities would handle, even though demand may be growing.

To justify these investments, companies are relying on transshipment opportunities. But with many transshipment hubs at various stages of development, overcapacity looms. For instance, there are at least four transshipment-focussed terminals either under construction or imminently planned in West Africa alone. Those that will prove successful will be able to efficiently handle large volumes of local and container traffic at each ship call. ICTSI's 2.5M teu Lekki project in Nigeria, due for completion in 2016, is well-positioned to do this. In other scenarios, if projected transshipment volumes are not met, the burden of payback on the investment will be solely shouldered by the local cargo owners in the form of higher tariffs.

Over the past 15 years we have seen the first wave of existing state-run terminals across Africa being handed over to private operators. This wave mainly represents investment in the refurbishment of existing infrastructure, replacement of aged and unproductive equipment, and introduction of human and technological expertise. Results have been positive, such as in the case of the ICTSI project in Toamasina, Madagascar. Since 2005, when ICTSI took over, berth productivity has improved from 5-6 moves/hour to 40, and vessel waiting time has declined from an average of 96 hours to 0, allowing the volume to double.

Capacity and productivity at these ports have been squeezed as much as possible within existing constraints, and is now down to the last trickle. The second wave, therefore, should see operators create modern, quality, and planned capacity away from urban populations, with deep draughts, more quayside, and greater operation flexibility. This second wave is moving



“ Limited opportunities and intense competition leave little to no margin for slower growth in volume or tariff ”

Gagan Seksaria, chief financial officer and head of investments, ICTSI

slowly, and so there are only a limited number of opportunities available at any one time. This, combined with intense competition, is heating the market, leaving little to no margin for slower growth in volume or tariff than assumed. I worry that in some cases this might result in unsustainable public-private structures, which are especially dangerous in this context of large and long-term investments. I therefore recommend sensible investment frameworks and good financial structuring.

Fortunately, this is something that those looking to invest can control and it is usually a matter of ensuring that all stakeholders understand the risks involved. The ultimate test of any structure is whether a commercial bank is willing to finance the project. Fair deal structures are also essential to protect the authorities and trade from monopolistic practices. Private operators can bring this level of competition, which is especially important in Africa, where most of the economies are reliant on a single port system and are therefore particularly vulnerable.

Ports constitute just a part of a much wider

challenge. It is all very well to develop waterside capacity, but hinterland links in the form of hinterland road and rail links also need to keep up. Waterside capacity is hardly useful without landside capacity, and where the former is developed without attention to the latter, it will have a significant adverse effect on port operational productivity, overall supply chain efficiency, landed cost of goods, and the environment, before eventually making the waterside investment at least partly redundant.

I am immensely excited about the prospects of the port industry in Africa. Opportunities in India, my home country, continue to soar and, although they are complex, we have managed to address many of them. Africa, however, has its own set of challenges that we will tackle together. These challenges are the reason why I moved here. **PH**

Gagan Seksaria has over 10 years of experience with Indian and African port and related infrastructure investments.

More info: gseksaria@ictsi.com; www.ictsi.com



Lekki container terminal should be operational by 2016



Vision for central Africa's go-to port

Obstacles hindering the development of Douala's river port have prompted Cameroon to start building two deepwater ports on its Atlantic coast, reports **Jem Newton**

Several landlocked countries in central Africa are dependent for their international trade on the main Cameroon port of Douala, strategically located in the Gulf of Guinea. Cameroon has set out a 20-year vision to develop at least two new deepwater ports to serve both coastwise and inland trade with its neighbours in the next decade.

"Douala plays a vital role for the economies of landlocked countries, including 95% of the import and export trade of Chad and the Central African Republic, which represents about 11% of the port's cargo throughput," Douala port authority's environmental

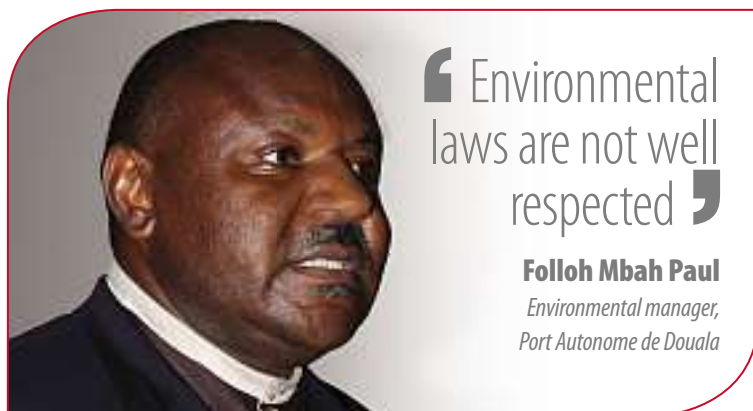
manager, Folloh Mbah Paul, told a logistics conference in Accra, Ghana, in March.

Cameroon also has plans to expand its rail network to connect with its landlocked neighbours and the countries it flanks – Nigeria to the northwest and Equatorial Guinea, Gabon, and Congo to the south.

Folloh Mbah said the Cameroon government's main ambitions were to promote relations within the CEMAC central African economic community and intensify trade with Nigeria. Cameroon shares a 1,700km border with Nigeria, a regional economic power with a thriving consumer market of 150M people. The government also wants to improve access to the wider community of central African states, some of which have markets with a high development potential, such as the Democratic Republic of Congo and Angola, comprising about 120M inhabitants.

The proposed deepwater ports of Kribi and Limbe (see 'Ports for tomorrow') are still at an early stage of development and the port authority of Douala is taking steps to increase the efficiency of its cargo handling operations to keep pace with the region's booming markets.

Besides container handling, trades include wood products, oil and fresh produce. Annual traffic at Douala is estimated at 7.9M tonnes plus 11M tonnes warehousing capacity. The international container



Environmental laws are not well respected

Folloh Mbah Paul
Environmental manager,
Port Autonome de Douala

Photo: Jan Newton

in total but some of these are poorly maintained and in some cases unusable. A major cause of inoperability is various physical obstructions, of which the chief ones mentioned by Folloh Mbah are wrecks and beds of water hyacinth.

"There are almost 80 wrecks in the port estuary, some of which hinder operations at some of the quays, reducing capacity by up to 40–50%," he said. "Wrecks also cause problems for security and navigation."

For a number of years the port authority has been trying to identify a salvage company to start clearing the most obstructive wrecks. "The contract was given to a foreign salvage company in 2010 but has not been carried out due to a lack of suitable equipment and know-how," Folloh Mbah told the Accra conference. "Two months ago the minister responsible for maritime affairs cancelled the contract and we are still looking for a salvage company able to clear wrecks efficiently."

The problem of vast vegetation beds is linked to some extent to that of the wrecks, which offer suitable conditions for water hyacinth, an invasive species, to establish itself and expand. A 2012 study of hyacinth infestation in Cameroon by the World Maritime University confirmed that many of Douala's quays were severely infested. "The quay that is [most] heavily affected is the fishing port, due to the presence of wrecks that have rendered a huge portion of the quay non-functional, hence an opportunity for the proliferation of water hyacinth," the study observed.

In response to delegates' questions, Folloh Mbah said Cameroon had ratified many of the international laws that governed such issues as maritime pollution and disposal of wrecks but too many of them had not yet been implemented.

"Environmental laws are not well respected in African countries," he told the conference. "There is a need for a synergy to work hard and make sure all these laws are observed." **PH**

terminal has been fully modernised by its operator, APM Terminals, with a 660m berth, 11.5m depth alongside and a total handling capacity of 5,000teu. The ro-ro terminal has a ramp and two gantry cranes with a capacity of 40 tonnes each.

What are the challenges restricting Douala's efficiency? It is an estuary port beyond comparison. The River Wouri and its tributaries constitute the main source of water collected from about 20 basins draining into the port channel. But the huge volumes of sediment from such a large catchment area result in heavy silting along much of Douala's 50km access route to the sea – 26km of the lower channel requires permanent dredging, said Folloh Mbah.

Since 2009 that contract has been carried out by Belgian dredging company Jan De Nul, which has ensured a draught of 7m along the entire channel, with a medium-term goal of increasing that depth to 7.5m, permitting a 10m clearance at high tide. But building deepwater ports on the Atlantic coast is the government's long-term solution to the anticipated regional trade boom.

Potentially, Douala has an estimated 10km of quays

Ports for tomorrow

The Cameroon government is pressing ahead with two deepwater ports to accommodate the larger container vessels that are expected to dominate sub-Saharan liner routes during the next decade.

Breakwater construction is continuing at the southern deepwater Port of Kribi and about half of the 1,355m protective dyke has been completed. Preparation work for two first-phase terminals – for containers and dry bulk – on this greenfield site will be carried out in the second half of the year. A port spokesman told *P&H* that Kribi anticipated receiving its first large cargo ship by the end of 2014.

Initially there will be two 600m container berths with space to double the container quay capacity to four berths. Dredging is well under way and depth alongside will be 15m when the terminal is operational. It will be able to accommodate vessels up to 12,500teu.

The priorities for the next five years will focus on the construction of railways and highways, telecommunications infrastructure and the development of industrial and residential zones.

In later phases of construction the port will host an aluminum terminal and plant, an oil terminal and storage facility, an LNG terminal and natural gas liquefaction plant, a grain terminal and a rail terminal.

Meanwhile, at the Port of Limbé, near the mouth of the Wouri estuary, construction of the quay wall by Dutch engineering company BAM International began in early 2013. The 320m wall is due to be completed by mid-2014. A 700m breakwater has already been completed. Once operational, Limbé could absorb much of the deepsea container trade denied to nearby Douala because of its shallow draught.



Construction work on Kribi's breakwater

Photo: Port of Kribi



Eastern gateway to Nigeria

With the ports at Lagos saturated, a \$2Bn deepsea port and associated infrastructure project in the east of Nigeria is preparing to take a bite out of the growing market, reports ***Savahna Nightingale***

Nigeria's Akwa Ibom State has big plans. With fertile oil and gas reserves and an eye on neighbouring competition, work has started on a state-of-the-art port to make the region a destination hub for countries around the Gulf of Guinea.

The development of the deepsea Port of Ibaka, triggered by the private sector, is set to become the new gateway to Nigeria, according to Dr Patrick Uyttendaele of consultancy Maritime and Transport Business Solutions, a speaker at the 11th Intermodal North Africa Conference in Dakar. "Ibaka will become a major location for deepsea shipping and a catalyst for regional growth," he said.

With a population of 5M, the state of Akwa Ibom is an economic stronghold in the east of Nigeria and the country's third-largest state in terms of GDP. Port of Ibaka is due to be completed in 2016 and will play a major role in the economic growth of the state. It will be the only deepsea port in eastern Nigeria and will be accompanied by a free trade zone and the new Ibom Industrial City, covering 14,000ha.

"Our vision is to be the economic engine in western Africa and we expect to double the GDP here in the next three years," Uyttendaele said.

The project couldn't be more perfectly timed, according to Nigeria's Ministry of Transport. Dikko T Bala, special adviser at the ministry, said: "Nigeria's maritime sector is yet to fully harness the potential of its lucrative coastline. The existing ports in the country were designed to handle 60M tonnes annually and are now overstretched".

"Today Nigeria's ports handle more than 100M tonnes annually and cannot cope with the current

demand. Development of the additional seaports is imperative," he added, noting that Africa is understood to have an infrastructure gap of \$48Bn.

The project in Akwa Ibom is being steered by Nigeria's federal Ministry of Transport, together with the Akwa Ibom state government, and is in line with President Goodluck Jonathan's Transformation Agenda, which addresses the maritime sector. Ibaka will create private sector opportunities to handle containers, general cargo, vehicles, and dry bulk. Exports will include cocoa, rubber, and crude oil, while planned imports are grain and other agricultural products, as well as petrochemical products, for which it will be a distribution centre. It will also provide facilities for LNG.

The project is a 60:40 private-public partnership, with 20% of its investment from the federal government, 20% from the state of Akwa Ibom, and 60% private investment. A pre-qualified private bidder will, it is hoped, be named in 3Q/2013.

The new port is expected to serve both the domestic and international markets and, when open, it will operate 24 hours a day to maximise productivity. But creating port-side capacity is only half the story. "It's no use releasing a bottleneck in port and then moving it inland," said Uyttendaele, who explained that an inter-state road investment programme connecting the port to the distant hinterland for regional and national trade was also part of the agenda.

With brisk consumer growth seen in Africa, especially the in west, port capacity is expected to reach 80% over the next 10 years as global terminal operators continue to grab opportunities to participate. Port throughput is forecast to increase by 12.4M teu by 2016. **PH**

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European Commission sets LNG bunkering target

The European Union's executive body wants to oblige leading ports to develop LNG bunkering facilities by 2020, reports **Andrew Spurrier**

European Union ports that are still hesitating about developing liquefied natural gas (LNG) bunkering facilities have been given a clear signal by the European Commission that the time for action has come.

The proposed Clean Power for Transport package presented by transport commissioner Siim Kallas on 24 January seeks to oblige leading ports to develop LNG bunkering facilities by 2020. The aim is to constitute an EU network capable of meeting expected strong growth in demand for LNG from the shipping industry.

The commission wants the measure to apply to all 83 seaports that figure in the European Union's strategic TEN-T core transport network. Kallas told journalists in Brussels that although the commission intended the requirement to be mandatory, it did not expect to have to take punitive measures to enforce what he said was intended above all as a stimulus to development.

The commission indicated that its main concern was to end the current 'chicken and egg' situation:

owners were prevented from investing in LNG-powered ships because of the absence of bunkering infrastructure, while ports could not invest in bunkering facilities because there were not yet enough LNG-powered ships to justify them doing so.

In an internal working document officials say: "Many shipowners and ship operators have stated their interest in switching to LNG fuel but withhold their investment and conversion plans because of missing LNG supply at their preferred ports of call."

The commission estimates the cost of developing a basic LNG refuelling infrastructure for waterborne transport in the European Union at €2.1Bn (\$2.7Bn). As well as the 83 TEN-T seaports, this estimate takes account of the cost of setting up LNG refuelling stations at about 50 inland waterway ports, which, under the terms of the strategy announced on 24 January, would need to be in operation by 2025.

It expects financing to come mainly from the private sector, with EU funding used to prime that investment. Development would be virtually from scratch, according to the commission, which said Norway was the only country that had begun developing a national LNG bunkering network.

Elsewhere, it said, LNG technology for ships was in its infancy, with just a few "pioneering" ports carrying out trials on an individual basis. One of the advantages of its strategy, it suggested, was that it would lead to the establishment of an EU framework for LNG bunkering based on best practice, which would speed up the process of bringing both bunkering facilities and LNG-powered ships into service.

The commission wants to bring the strategy into effect via a directive and accompanying action plan for the development of LNG as a fuel for ships. Before this can happen, however, it will need to win the approval of the European Parliament and European Council, and this promises to be by no means automatic.

EU transport ministers took a preliminary look at the commission's plan, which sets out an alternative fuels strategy for road as well as waterborne transport, at a meeting on 11 March.

They welcomed the initiative but expressed concern about its targets and deadlines, as well as the likely cost of its implementation. "It was stressed that member states needed flexibility for implementation," they said in a communiqué issued after the meeting. **PH**

“I don't see that there will be such resistance that we will need to take punitive action”

Siim Kallas

European transport commissioner



Photo: EC

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EU backs African port infrastructure development

The European Union takes a specific interest in infrastructure development in sub-Saharan Africa, where several ports have already benefited from EU funding for their upgrading plans

The European Union plays a discreet but very real role in the development of port and related transport infrastructure in sub-Saharan Africa. Two years after the adoption of its new Strategy for Africa in December 2005, the European Union followed it up with the creation of the EU-Africa Partnership for Infrastructure.

The partnership between the African Union and the European Union recognises the importance of infrastructure development for wider economic growth, and is backed by the European Development Fund but also by a dedicated financial instrument – the EU-Africa Infrastructure Trust Fund.

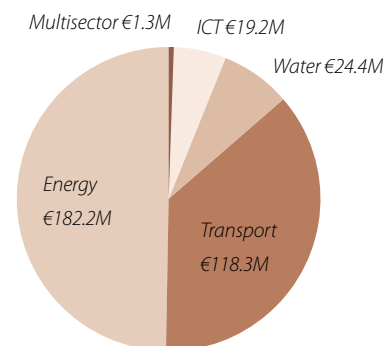
The fund, which aims to promote investment in regional infrastructure in Africa, provides grants drawn from funding made available by the European Commission and a number of individual EU member states. The fund's resources are limited in relation to the scale of funding required for the infrastructure projects it supports. The level of funding it had been pledged from its inception to the end of September last year amounted to €392.7M (\$513.3M), of which €308.7M was from the European Commission and €84M was from 12 EU member states. Approved grants over the same period totalled €345.4M but these went towards projects costing 10 times more in total at about €3.5Bn.

Not all these grants went to the port and wider transport sectors. The fund also provides grants for the energy, water, and information and communication technologies sectors. Energy projects took the biggest share of grant funding from the trust, with a total €182.2M awarded, but transport projects took the second-biggest share, with grants totalling €118.3M.

A handful of port projects obtained a share of this latter total. The biggest of them was the Beira Corridor Project in Mozambique, which involved restoration work on Port of Beira's access channel and rehabilitation of the strategic Sena railway line, which links the port to coal mines in Tete province. The fund awarded a grant of €29M towards a total project cost of €190M.

It has also provided a €6.6M grant towards the €128M cost of a rehabilitation project currently in progress at the Port of Pointe Noire in the Republic of the Congo. A €3M grant went to the Mauritius Ports Authority for a €93.7M extension of the Mauritius Container Terminal in Port-Louis, while a €257,000

Grants approved by sector



Source: EU-Africa Infrastructure Trust Fund

grant went to the Tanzanian Ports Authority for a €9.5M upgrade of rail facilities at the Port of Dar es Salaam in Tanzania.

Projects that qualify for grants from the fund must be identified as priority projects by the African Union or relevant regional bodies that have a demonstrable impact in the region. They also have to be shown to be sustainable.

The European Investment Bank, which manages the fund, says grants are often provided to assist in the preparation of projects for presentation to donors. Technical assistance has accounted for grants totalling €80M, moreover, although the bulk of the grant money (€218.4M) went towards reducing interest rates on project loans to help get projects off the ground.

Private, public, or mixed capital ventures are all eligible, according to the trust, but a bank official pointed out that many projects that were funded by external private sector investors did not require input from the trust fund. For example, companies operating a port as a concession bring their own private money with them. He explained: "In the port sector, if there is a big global operator coming in, they don't really need us to help them with external support. But if, going back to the Mozambique example, it is a local body, then one can imagine that in a post-conflict area support is needed." **PH**

More info: www.eu-africa-infrastructure-tf.net



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Dredging with benefits

Port of Brisbane is using its dredged material for land reclamation that may prove handy in the future. **Bert Visser** visits the port to find out more

Ports that have to carry out maintenance dredging in their harbors and navigation channels must accept they will have to dispose of the dredged material one way or another. The most common and cost-efficient method is to use disposal sites at sea. However, in cases where environmental issues forbid this, alternative techniques for ridding some or all of a port's dredged material need to be considered.

A variety of solutions have been developed over the years, including the construction of large-scale disposal facilities on land and the application of treatment techniques to reduce the volume of the material. Co-operation agreements with neighbouring local authorities have also needed to be developed to identify dedicated landside locations where the dredged material can be deposited.



Land reclamation around the port uses the suitable dredged material for the bunds and the sandier material in the middle

Photo: Port of Brisbane

Finding a cost-effective and beneficial way to deal with dredged material unsuitable for disposing of at sea has been an ongoing challenge for ports and dredging companies. Port of Brisbane in Queensland, Australia, has turned the disposal of dredged material into an opportunity with a high degree of beneficial potential. By making use of an inventive dredging and filling strategy, as well as applying a combination of consolidation techniques, the port succeeds in not only using sandy material for reclamations, but also soil that has been earmarked as unsuitable, such as silt and mud.

Port of Brisbane is mainly situated at the mouth of the Brisbane River as a result of an expansion plan in 1976. It had previously been located further upriver and around the city of Brisbane, but the then government realised that if the port was to expand, it would need a change of location and facility. The area chosen for its new home was the Fisherman Islands, named as such after a series of small islands located there.

Today, the privately-operated Port of Brisbane houses 12 berths, of which nine handle container traffic and the remainder general cargo, with further berths upriver.

The work that started in 1977 is progressing, Peter Nella, senior manager Marine at Port of Brisbane Pty Ltd, told *P&H*. He explained that the Fisherman Islands reclamation area – known as the Future Port Expansion – is an ongoing process, and it is here that the dredged material is being put to beneficial use. On the topic of where the dredged material comes from, Nella said the port's 90km-long access channel has to be maintained, as well as the Brisbane River as far upstream as Hamilton. In an average year, around 300,000m³ of material is dredged as part of the port's maintenance programme, and the State of Queensland considers the disposal of this material its own responsibility.

It is the port's specific geographical location that makes disposing of this material at sea extremely challenging. The port is located on Moreton Bay, which is almost entirely surrounded by islands, including



Photo: Bert Visser

HPH's Brisbane Container terminals – berths 11 and 12



Photo: Bert Visser

Land reclamation is under way at Port of Brisbane

North Stradbroke Island and Moreton Island. Ships access the port via the 90km-access channel running between Bribie Island and Moreton Island.

Material dredged from this channel and the Brisbane River is relatively clean, but is still tested for contaminants each year. These tests reveal whether

Brisbane dredges Queensland

The high level of maintenance dredging necessary on a yearly basis has led the port to invest in its own trailing suction hopper dredger (TSHD). The *Brisbane* has a hopper capacity of 2,900m³.

As there is not a continuous presence of dredgers in this part of the world, the mobilisation of vessels can make dredging operations very costly. The climate in Queensland can make the weather unpredictable, with heavy rainfall causing extreme amounts of silt and mud to reach the coastline, more than quadrupling the amount of material to be dredged from the port's navigation channels in one year.

This is highlighted by the Queensland floods, which created 1.3M³ of material that needed to be dredged in January 2011. The certainty of having a dredger in the vicinity at all times to be able to deal with such unforeseen events is cited as a major positive for investing. The Government of Queensland acquired its first TSHD, the *Sir Thomas Hiley*, in the 1960s, which was replaced by the *Brisbane* in

2000. Port of Brisbane was selected to manage and operate the dredger, not only to carry out maintenance dredging in its own port, but also in other ports along Queensland's coast, including Cairns, Weipa, Townsville, Mackay, Gladstone and Bundaberg. Following privatisation of the port in 2010, the government transferred all equipment and machinery, including the dredging fleet, to the newly-established Port of Brisbane Pty Ltd.

The *Brisbane* is usually occupied for around six weeks per year in its home port – longer if capital works are carried out – and is therefore available for dredging projects in ports beyond Queensland. To date, the dredger has been active as far north as Karumba in the Gulf of Carpentaria, and as far south as Devonport in Tasmania. The *Brisbane* was recently selected to participate in maintenance at the Port of Melbourne as part of a contract largely run by Royal Boskalis Westminster.



the material contains slightly elevated levels of contaminants than desired, and if so it is not disposed of in the environmentally sensitive bay. Additional testing on the dredged material can be undertaken to determine whether the sediment is suitable for ocean disposal, but the port has adopted a conservative approach to sediment management, and the material is currently re-used for land reclamation in line with ocean disposal guidelines. Using the material for these reclamation purposes, however, is said to be environmentally sound.

It is the physical characteristics of the material that are problematic, and much of it is considered geotechnically inappropriate to be used in reclamation. Luckily, material suitable for reclamation is also found, mainly far out in the access channel in sections known as the Spitfire Channel and the North West Channel.

By opting for a well-balanced strategy of dredging and filling, the port's dredging engineers have successfully reclaimed new land using both the suitable and the geotechnically unsuitable material. The sandier and more stable material is used for the bunds and bund-stability berms, while the softer material is placed in the remainder of the reclamation's compartments. Sandy material is then placed on top

of the area, when the softer materials have dried out sufficiently, to create a working surface.

The final weapon in this strategy is the application of several consolidation techniques, including vertical drainage, vacuum drainage systems and surcharge, either individually or combined.

Nella stated that the port's strategy to expand in this way is not driven by demand for new land, but more to accommodate the supply of dredged material. He added that there are many advantages to being ahead of demand and having land reserved for future use. The port has also estimated that this land reclamation strategy can continue until 2040.

Demand for additional space may not be the driver, but so far it is the port's experience that this new land does not stay unoccupied for long. One of the most recent sections of the reclamation is being utilised by Hutchinson Port Holdings (HPH) for its new Brisbane Container Terminals (BCT), a wholly-owned subsidiary. The new terminal covers a total area of 26 hectares, and has a total quay length of 660m and a depth alongside of 14m.

The first berth (berth 11) is now ready for business, marking the entry of HPH into the Australian market, with berth 12 scheduled to follow in 2014. **PH**



Photo: Van Oord

Dredging in the Baltic

The self-propelled split hopper barge *Jan Blanken* was used in both projects at Port of Klaipėda

Dredging work being carried out in the Baltic will enable one port to receive bigger vessels and pursue its plans for a LNG terminal. Van Oord and Port of Klaipėda explain the project

Klaipėda, Lithuania's only commercial seaport, is located about 300km from its capital, Vilnius. Klaipėda links various sea, land, and railway routes and is used for transport within the European Union and to Russia, Belarus, and Ukraine. It is the northernmost ice-free seaport on the eastern coast of the Baltic Sea and important to the economies of Lithuania and the European Union.

Harbor master Adomas Alekna explained to *P&H* that previously it could receive Panamax and post-Panamax vessels, but only if not fully loaded. It awarded a dredging contract to Van Oord to enable the docking of fully loaded Panamax ships. The project comprised two goals: to deepen and widen the access channel; and to dredge the Smelte Turning Circle. Klaipėda Port Authority's director general, Arvydas Vaitkus, told *P&H* that it is the biggest project the port has ever undertaken in terms of scope and cost.

The first contract, which began in April 2012, was to widen the 6km access channel from 120m to 150m and deepen it to 14.5m. A total of 4.5M m³ of hard, moraine soil was dredged. Although the port is always ice-free, it was challenging work at temperatures of -25°C in winter, said Van Oord's regional manager, Cyrille Schroten. "Special facilities, such as special clothing and adapted working methods and procedures, are required to guarantee safe working conditions. Although [these] conditions influenced our progress,

we were still able to complete the dredging a month and a half ahead of schedule," he said.

The sediment that had to be removed included moraine – a glacially formed mass of soil and rock. To carry out this work Van Oord modified backhoe dredger *Goliath* at Western Shipyard in Klaipėda. Three split hopper barges were also used to transport the dredged material to a dumping spot 30km offshore. The trailer suction hopper dredger *Utrecht* was used to dredge the hard moraine in the existing shipping lane.

The second project, awarded in January 2013, involved capital dredging works to enable the Smelte turning circle to accommodate larger vessels. This increase in depth will also allow Klaipėda to launch works related to the construction of an LNG terminal. About 1.5M m³ of soil will be dredged using the same vessels used in the previous contract, plus an additional cutter suction dredger. This capital dredging project is worth USD27.5M, according to Vaitkus, who added that it is the "first step towards energy independence". The facility will include a floating ship with a regasification unit, which is currently under construction and is due for delivery at the port in either 3Q or 4Q14. It will have an annual capacity of 3-4Bn m³.

Alekna told *P&H* that Klaipėda is already reaping the benefits of the first contract as it has seen an increase in throughput following the completion of the deepening work on the access channels. **PH**



The monitoring debate: can we do it smarter?

IADC secretary-general **René Kolman** considers whether adaptive monitoring can help save money and time

Monitoring at dredging sites for port expansion and maintenance is a necessary element in the planning and development process. It provides invaluable data for both the client and the contractor to minimise environmental impacts while simultaneously optimising the design. It also helps in communicating accurately with regulators, the public, and other stakeholders who may doubt the dredging process. But what and how to monitor continues to be debated, often to the detriment of gathering useful data.

In practice, a great deal of time is spent on compliance monitoring, far from the actual dredging site. Day after day data is assembled and the result of all this effort is vast amounts of information with little value.

Compliance monitoring will always be needed but it should be conducted in a smarter way, with a focus on relevant issues and uncertainties. 'Adaptive monitoring' can be a management solution that gives better long-term research results and increased credibility among all parties.

The dredging industry understands the need for monitoring and has done so for a long time. As a result it has invested in equipment and research to supply the required data to ensure dredging causes as little disturbance as possible. But how can we avoid monitoring for the sake of monitoring?

For most major dredging projects, five parties are involved: the government that issues permits; the owner, such as the port authority; the stakeholders;

the contractor that will do the work; and in some cases a financier, such as the World Bank. Each has a vested interest in understanding the potential environmental impact.

Monitoring of large projects usually takes place before, during and after dredging and maritime construction. It establishes an environmental baseline, which recognises natural occurrences such as storms, as well as human activities unrelated to dredging, such as shipping and fishing. It takes into account both seasonal and geographical variations. For example, for the Maasvlakte 2 project at the Port of Rotterdam the environmental impact assessment (EIA) ran to 6,500 pages, of which more than half were devoted to dredging-related items.

After many years of unrestrained industrial development, owners and stakeholders are often concerned that dredging may cause more harm than good, and so the facility's owner, environmentalists, the dredging industry, and sometimes the courts, tend to be overly cautious. Furthermore, monitoring can be driven by short-term funding and political motivation rather than scientific enquiry. It can ask the wrong questions or not make use of previous data or predictions.

In contrast, adaptive monitoring tries to pinpoint where potential problems lie by asking defined questions before monitoring begins.

Lindenmayer and Likens's paper *Adaptive monitoring: a new paradigm for long-term research and monitoring* (2009) describes adaptive monitoring as the "traditional scientific method of posing and then answering questions".

It continues: "Adaptive monitoring provides a framework for incorporating new questions into a monitoring approach for long-term research while maintaining the integrity of the core measures. Initial key steps are the development of critical questions and a robust statistical design."

To the question "what should be monitored?" the response should be: "What is the crucial question?" assert the authors.

The idea is that researchers should pose specific questions that are determined before monitoring begins; the monitoring programme should have a firm statistical design and be founded on a

conceptual model of how the ecosystem might work; and the questions should be motivated by a 'need-to-know'.

The scale of a monitoring programme should reflect the size of the dredging project and aim to be cost-effective. It should be in proportion to the potential impacts caused by the project – be it maintenance dredging or a port expansion. In the case of the Maasvlakte 2 project the monitoring process is 1% of the dredging costs.

It is important to note that not all monitoring methods are applicable to all projects. For smaller projects, radar and satellite-based monitoring or ADCP may be unnecessarily expensive. Monitoring programmes should not be 'over-dimensioned'. Too often, to ensure that all possible instantaneous impacts are detected, monitoring plans contain irrelevant requirements.

Making use of 'old' data is an important feature of adaptive monitoring, but if a project is being carried out on a greenfield site this data may not be available. In principle, though, all available data, including previously obtained data and insights gained on similar projects elsewhere, should be considered.

As the monitoring programme evolves, new questions may be asked, resulting in new methodologies being implemented. Such a programme is responsive to changing circumstances and will be far more economical and achieve better long-term results.

A well-planned monitoring programme can predict what impacts may occur and, if they occur, what mitigating measures can be enacted. These impacts must be considered in view of the benefits of the project and these benefits should be balanced against acceptable and unacceptable impacts.

Adaptive monitoring helps port authorities and contractors to make this evaluation. It helps them prepare a comprehensive dredging plan, respond to a potentially detrimental situation before it becomes a serious threat and weigh the advantages and disadvantages of a port construction project and the financial consequences. It will, it is hoped, give transparency and thus establish a basis of trust and confidence in the project among all stakeholders.

Finally, a well-defined adaptive monitoring programme can be used to fill in the gaps in the knowledge of the ecosystem. In this way, risks can be properly assessed and accumulated data can be used for planning future projects.

Adaptive monitoring can help evaluate when and how much monitoring is appropriate and can help avoid spending money to prove something that previous scientific studies tell us is not really an imminent danger or has no real impact.

Not every dredging project needs the same extent of monitoring. Sometimes less will be more: more efficient, more cost-effective and more accurate. **PH**

IADC is the International Association of Dredging Companies
More info: www.iadc-dredging.com

A silt profiler being placed overboard by a scientist carrying out monitoring

“Adaptive monitoring tries to pinpoint where the potential problems lie”

René Kolman

Secretary-general, IADC



Jim Wilson

Remote control

As vessel size surges, cranes may increasingly be operated remotely. **Michele Labrut** and

John Gallagher learn more

Manzanillo International Terminal (MIT), located at the Atlantic entrance of the Panama Canal, is the first terminal in the world to successfully implement a remote control station for ship-to-shore (STS) crane operations.

The MIT case is just the beginning, with other terminal operators set to adopt the concept over the coming years. "It is not so much new technology but an adaptation of existing technology with appropriate applications," Ken Chang, MIT's director of cranes, engineering and maintenance, told *P&H*. The concept of a stationary cabin for an STS crane was proposed by ABB in 2005. After discussions between MIT and ABB, "we decided to materialise the idea," he said. "We had ordered a series of cranes from China's ZPMC and one of the cranes arrived in 2006 with a stationary cabin attached at the left landside leg at the height of the conventional cabin under the trolley. The control chair was the same unit as in the conventional operator's cabin."

After the stationary cabin concept was proven, the controls were moved from the crane into a modern console in an office environment. At present, the remote system is still operating on one crane at MIT as a research/pilot project. The controller is in an office located in the terminal crane department.

The pilot project has underlined that similar productivity can be obtained via remote control instead of operations using a conventional operator's cabin under the trolley. "Once the tests commenced, we faced a lot of challenges, as well as trial and error," conceded Chang. One of the critical issues was the depth perception on the screen from the camera under the conventional cabin. "It took more than two years to carry out the tests and improvements before it became really successful," he said.

Another obstacle has been weather conditions, which are very harsh on the Atlantic side of Panama. "Once any component survives at MIT-Panama, it can be utilised anywhere in the world," he noted.

Nevertheless, despite such hurdles, the news is good. "Under ideal circumstances we made more than 40 moves per hour and were able to keep up with the productivity of an adjacent conventional crane with the operator's cabin under the trolley," reported Chang.

One advantage of the remote control STS operation is that it improves the social and physical environment

for the crane operator, who can relax in an air-conditioned room and move around easily.

ABB has pointed out that supervising a crane from a control room in a terminal building, rather than on top of the crane, helps reduce stress to the operator's back and neck. The remote control operation also offers many technical benefits. "We can potentially reduce the trolley weight on the crane and reduce the size of the trolley motor, which means a smaller drive and less energy consumption," David Avice, MIT crane project manager, told *P&H*.

"Because there is no human on the crane, we also can accelerate and decelerate the trolley faster, which allows for more aggressive tuning of electronic anti-sway and can make faster cycle times," Avice added.

The remote control experiment has benefitted from the strong relationship MIT maintains with its terminal workers, "who have a positive attitude towards new technologies – something you cannot get in every terminal", Chang noted.

Meanwhile, ABB has been using MIT in Panama as a testing ground for remote control technology elsewhere, and already has other takers. APM Terminals (APMT) announced in September it had awarded ABB a contract to provide a remote control system for STS cranes at its terminal, which is scheduled to open in November 2014 at the Port of Rotterdam expansion, Maasvlakte 2. APMT has announced plans for eight STS cranes to be operated by remote at its Rotterdam terminal. According to ABB, the APMT facility will also be the first in the world to boast STS cranes with no installed driver's cabin.

In addition, the Rotterdam World Gateway terminal located at Maasvlakte 2 has purchased ABB's remote control technology. Rotterdam World Gateway – a consortium of DP World, APL, MOL, HMM and CMA-CGM – is also scheduled to open in 2H14. As a result, Rotterdam will host the first European terminals with remote control STS technology.

The system to be used by APMT in Rotterdam will deploy cameras installed on certain areas of the crane and allow operators to move from the cab near the top of the crane to an enclosed office 1-1.5km away.

Operating cranes by remote wasn't on the agenda when APMT was awarded its Maasvlakte 2 concession in 2006. That was years before today's largest containerships were ordered and before it was known how that scaled-up tonnage – and the higher cranes required to serve it – would affect the company's productivity projections.

APMT had assumed its Maasvlakte 2 facility could increase productivity by 25-50% for container customers compared with conventional terminal designs. However, those bets were off using the





MIT crane project manager David Avice at the remote controls of a ship-to-shore crane in Panama

originally planned crane operating systems. "When the new vessel designs came to the market, we concluded that we would have seen a drop in our original productivity ambitions if we would have stayed with the crane's original design," Frank Tazelaar, managing director for APM Terminals Maasvlakte 2, told *P&H*.

In addition to the advantages cited by Panama's MIT, Tazelaar also noted there are human factors to consider when operating the taller cranes. According to ABB, such cranes require lifting heights of over 50m. "It was obvious to us that it's better for operators not to be exposed to the increased forces that the faster cranes would require," said Tazelaar, explaining how this could cause crane operators to become nauseous or dizzy.

He added that the height of new cranes "means the crane driver's accuracy goes down, and with it the crane's productivity". Thus, the future shift towards remote control STS cranes, which began in Panama and is continuing in Rotterdam, is ultimately being fuelled by container shipping economics. The larger the box ship, the higher the STS crane required to serve it, and subsequently the more advantages to be reaped in the future from remote control. **PH**

Makeover for cargo equipment in US

The equipment that moves and stacks the containers at the largest box ports on the US East and West coasts is in the process of becoming the greenest in the country.

Cargo handling equipment (CHE), which includes yard tractors, container handlers, forklifts, and gantry cranes, is in almost constant motion and is therefore a major source of air pollution in port areas.

To meet increasingly high federal air emissions standards, US ports over the past five years have been retrofitting CHE with emissions control systems, replacing old equipment with new cleaner fuel-burning technology, or eliminating air pollution altogether by going electric.

It is an initiative that forms part of IAPH's World Ports Climate Initiative (WPCI), and the Port of New York and New Jersey (PANYNJ) is championing the project.

"Being a zero-emissions port is the long-term goal here," Kevin Maggay, Port of Los Angeles air quality supervisor, told *P&H*, although he added that "we don't have a specific port policy driving us to that".

Nevertheless, companies in California must still meet the strictest state standards on top of federal regulations, and the Port of Los Angeles requires tenants to comply with the higher standards for CHE as leases are renewed.

At the end of 2012, for example, all China Shipping Container Lines' CHE with less than 750hp, other than yard tractors, rubber tyre gantry cranes, and top-picks, had to meet the US Environmental Protection Agency's federal 'Tier 4' engine standards, which are due to come into force nationwide in 2015.

PANYNJ told *P&H* that CHE upgrades there include electric diesel port quay cranes, new units that meet on-road standards, using ultra-low sulfur fuel in all CHE, and retrofitting yard tractors with air pollution controls.

As an added incentive, PANYNJ's CHE fleet modernisation programme will reimburse port tenants with 20% of the cost for replacing CHE with new equipment that meets federal on-road air emission standards.

More info: <http://wpci.iaphworldports.org>



Port of LA has some of the strictest CHE emissions standards in the US

Photo: Port of Los Angeles

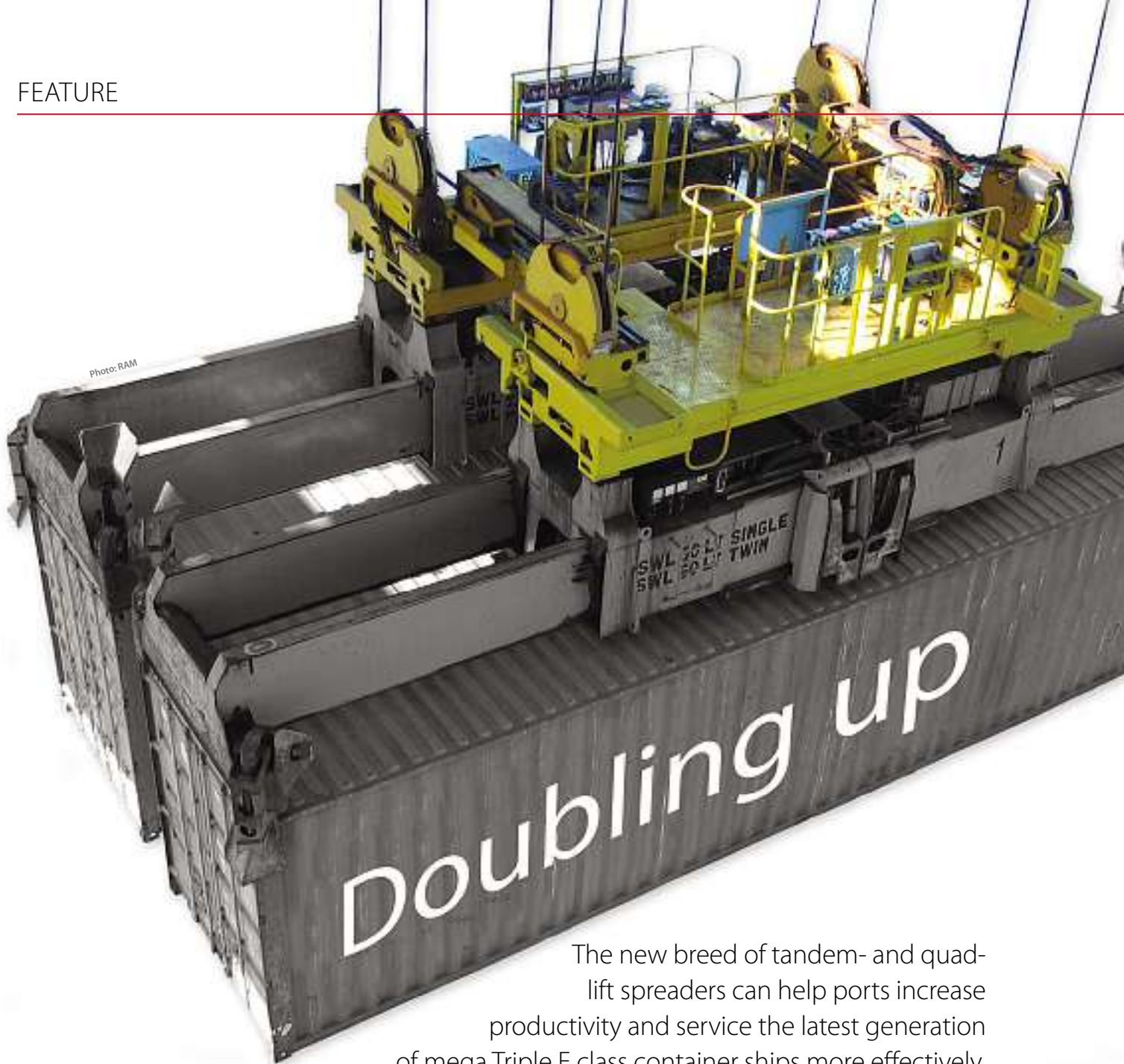


Photo: RAM

Doubling up

The new breed of tandem- and quad-lift spreaders can help ports increase productivity and service the latest generation of mega Triple E class container ships more effectively, reports **Stephen Cousins**

Tandem spreaders, like this RAM Model 3350, can handle two 40ft or 45ft containers at one time and this model can change over from single- to twin-lift mode within three minutes

The shipping industry's drive towards larger container ships able to carry greater volumes is placing increasing pressure on managers of terminals to push more boxes, in the same amount of time, through already tightly packed berths and container yards.

One method of unloading vessels faster is to increase cycle speed, but this raises significant challenges in terms of reducing crane sway and preventing driver control issues related to concentration and fatigue.

Another approach is to boost productivity through the deployment of multi-lift spreaders, such as tandem lifts, able to shift more boxes in a similar amount of time. Studies indicate that, when configured optimally, these systems can improve productivity by as much as 40% per ship-to-shore crane compared with a conventional single-lift set up.

However, the technology raises a number of issues for terminal operators: the type and brand of spreader

could have a major impact on operating efficiency, the increased weight carried by cranes may cause issues with quay deck and rail loading and raises safety concerns; meanwhile, transporting two or four containers at once will impact on the number of traffic lanes available on the quay as well as yard operation logistics support and IT system support.

These issues were at the forefront of APM Terminals' (APMT's) thinking when it decided to place an order for nine Bromma tandem spreaders in 2012 for its new terminal at Maasvlakte 2 in the Port of Rotterdam, explained Ross Clarke, head of design and innovation at APMT: "It's difficult enough to get one container to arrive at the right crane at the right time consistently and much harder with a pair of boxes. For us, the challenge is to match the production rate of a tandem-lift crane with the subsequent yard and horizontal transport of containers. Based on a number of factors, our computer modelling predicted a 25% productivity



increase per crane when using tandem spreaders and a 12.5% improvement across an entire ship exchange. This might sound unimpressive, but it takes longer to lock a spreader onto two containers instead of one, and across a ship not every pair of containers will be suitable for tandem lifting – there will be runs of boxes that can be lifted in tandem and some cells that have to be handled in a single mode,” he said.

Dockside container cranes typically utilise a single hoist with a single spreader and are able to either pick up a single 20ft, 40ft, or 45ft container, or two end-to-end 20ft containers simultaneously.

In contrast, cranes capable of tandem lifting are designed to handle two 40ft or 45ft containers side by side on a single spreader, or a single 40ft or 45ft container in tandem with two 20ft, or alternatively four 20ft containers.

The ability to carry out tandem or quad lifts can either be built into the design of a new quay crane by the crane manufacturer, or into the headblock of a new spreader designed for attachment to an existing crane.

In the latter case, tandem spreaders enable terminal operators to get more out of existing container cranes, since even cranes with limited lift capacity can utilise the tandem mode of operation to handle empties.

Tandem-lift spreaders have only gained in popularity over the past couple of years, said Ashebir Jacob, senior port engineer at coastal and civil engineering consultants Moffatt & Nichol. “As vessel sizes increase, shipping companies still have the same window to complete box discharging and reloading, regardless of whether its 8,000teu or 18,000teu, which puts pressure on the terminals to maximise efficiency at berth as well as match it in the yard,” he said.

Several ports have individual tandem-lift spreaders in operation globally, but the first large-scale deployments will take place in 2014 when major projects including DP World’s London Gateway terminal, APM’s Maasvlakte 2 terminal and DP World’s Rotterdam International Gateway terminal come into operation.

Each of these three terminals has specified tandem-lift spreaders from a separate manufacturer – Bromma at APM Terminals, RAM at London Gateway and Stinis at Rotterdam World Gateway – which will make for an interesting large-scale comparison of productivity when each is in operation.

The nine Bromma tandem spreaders to be installed at Maasvlakte 2 constitute the largest installation of tandem units in the world. Each spreader will be supplied with an automated quick-connect plug interface. Lars Meurling, vice-president of marketing at Bromma, explained: “With [a] conventional unit, dock workers must climb on top of the spreader to disconnect the cable then reconnect it to a new headblock, but our technology will allow the crane operator to switch between modes of operation from inside the crane cabin without any manual interaction on the ground. This eradicates manual handling safety issues and the entire process can be completed in under three minutes”.

DP World operates around 40 quay cranes worldwide capable of tandem lifting and it said the greatest

financial benefits reside in lifting two 40ft boxes, which are in wider circulation than four 20ft boxes.

However, the gain in productivity provided by tandem-lift spreaders cannot happen in isolation and will depend on the simultaneous transformation of associated container transport across the entire terminal operation, including horizontal transport and container stacking systems to ensure the efficient movement of container pairs.

“Terminal managers will need to develop a business case for a specific terminal arrangement rather than simply specifying tandem spreaders and fitting everything else in around that,” explained Moffatt & Nichol’s Jacob. “The productivity gains at the quay end must also be handled in the yard, so you need to ask yourself questions such as: do I start with tandem lifting and then, at the de-coning platform, transfer to single or tandem container movements? Is there enough stacking equipment to handle the peak load coming into the yard from the quay? If transport or stacking is not scaled up appropriately then bottlenecks may occur so it is critical to ensure it all works together,” he added.

This may mean rethinking the use of crane control systems, manufactured by the companies like ABB Crane Systems, to synchronise box movements, and manage spreader coupling and decoupling, for example.

When tandem lifting full 40ft or 45ft boxes, it is necessary to have cranes with ropes that can accommodate a safe working load of around 105 tonnes. For some terminals this may mean investment in new equipment. The higher loads may also require strengthened quays and rails, and since rails are typically laid down in long lengths, simply changing a rail on a 300m berth could necessitate a costly month-long shutdown. “Conversely, a split headblock tandem spreader offers the opportunity to utilise existing lower-capacity quay cranes to handle empties without the need to modify crane, or civil infrastructure designs,” said an engineer spokesperson for DP World.

Meanwhile, there is additional operational expenditure associated with resources such as additional rubber tyred gantries and terminal trucks needed to support a tandem-lift operation.

“We’re still planning our Maasvlakte 2 operation and if we don’t balance all these parameters then the 12.5% productivity gain we anticipate will quickly erode. Spreader units are not cheap, so we have to maximise the potential to justify the investment,” said APM Terminals’ Clarke.


Ultimately, the decision on whether to invest in multi-lift technology will depend on the overall box-handling cost for the terminal and whether it can balance its bottom line against the requirements of the customer.

However, with the world’s largest terminal operators getting behind the technology at several major projects, the future seems certain.

“There are certainly challenges at ‘getting good’ at this, but I’m sure that with practice we will perfect the processes involved and, in future, tandem-lift spreaders will be deployed widely throughout the world,” concluded Clarke. **PH**

Make weather data work for you

Expensive delays can be avoided with the right meteo and hydro information, says retired pilot **Nigel Allen**



Consider the following scenario between a shoreside vessel traffic system (VTS) operator and pilot at sea as the two exchange information in order to safely and efficiently bring a vessel in alongside.

VTS: *The ship on your berth has gone back half an hour and the two tugs from that vessel will come to you.*

Pilot: *My tidal window closes at 0950 hrs and the weather forecast is not looking very helpful either!*

VTS: *OK, the last low water was 0.2m above prediction and the current trend is 0.25m above prediction and the barometer is still dropping. If we skip the swing and go straight alongside port side to, how does that extend your tidal window?*

Pilot: *I'll get back to you.*

This conversation will be familiar to pilots and masters alike, as it is a scenario often repeated in many of the world's ports, large and small. Operational changes that affect planned shipping movements can be disruptive and costly; accidents even more so.

Ships are increasing in size but many ports are not and, as a consequence, the margins for error have increased.

Typically, a large container ship can cost more than \$100M, the value of the cargo many times more, and daily running costs of these vessels are huge, with delays creating complications and rescheduling likely to be expensive.

Everybody in the chain is under pressure to perform. If your customers have such expensive assets sailing in and out of your port it makes sense to offer the best service you can. As the above scenario highlights, hydrological (hydro) and meteorological (meteo) information – the state of

the sea and weather conditions – can have an impact on operations during a vessel's approach to port, manoeuvring alongside and even its cargo handling operations.

A ship's arrival is planned days in advance and changes to that plan are updated frequently. It is in the interests of everybody involved that things run to schedule and, at the sharp end, decisions need to be made that produce a safe outcome. A successful plan has many inputs, including the weather. This is one of the most changeable factors and so it is important that this information is up-to-date and used to its best advantage.

The methods of providing reliable and accurate hydrological/meteorological information based on both actual and predicted conditions have improved and can be more easily shared with relevant parties. These will include harbor authorities, masters, pilots, and other shore-based and ship-based users. It was for this reason that, in December last year, a PIANC (The World Association for Waterborne Transport Infrastructure) working group (WG 117) published its report *Use of Hydro/Meteo Information for Port Access and Operations*.

The group of 13 experts met ten times over the course of four years and were asked to pay special attention to access windows for channels subject to tidal restrictions.

Time is one of the most important factors when considering an up-to-date forecasting system. With the new and more robust monitoring and data communications techniques that are available today, a port should aim to develop a system that can make a forecast and deliver that information to the end users in real time. In this way weather conditions can be pre-empted and operations adjusted to suit these conditions.

A port's requirements should be at the centre of developments for forecast systems. Each has its own specific conditions but in all cases accurate, timely and reliable data is of crucial importance. Hydro/meteo information across the globe is ample and easily obtainable from meteorological institutes running a network of monitoring locations. This information often is in the public domain and can be input into a port's forecast system.

In most cases, however, a port will need more

specific information in addition to this, so it may be necessary to add a dedicated monitoring location in the vicinity of the port. Further data specific to the port, such as waves and currents, may also be needed and, as this is only relevant to that individual port, a dedicated monitoring programme would be required, information from which would be input into the forecast system.

Bringing together all these forms of data – water level, wind speed and direction, wave height, current velocity, and visibility – from the various sources, be they public or bespoke, is the first step towards a comprehensive picture of the hydro and meteo conditions in any port.

A quick search on the internet will reveal the existence of an array of easy-to-understand port websites displaying hydro/meteo information.

Take Port of Rotterdam's Internet Amethyst website, for example, which is periodically fed with data from the monitoring networks in the port area. I can even download free weather information on my iPhone that can be superimposed on to my chart data using an app called Pocketgrib.

There is now a level of information out there that simply wasn't available before. And if I can get up-to-date information on my iPhone, think of the possibilities for a port.

The relative costs of setting up or updating a forecasting system in a port, compared with the value of the assets at risk, are quite small, but vital if a port wants to remain competitive in terms of being efficient and effective.

So, back to our delayed ship:

Pilot: *With the tide running 0.25m over prediction that extends my tidal window by 18 minutes and, as we're not swinging, that reduces the time required to berth by 15 minutes, so despite the delayed vessel sailing we can still safely proceed.*

The master has also advised that he can move some ballast around, which will reduce the maximum draught by 20cm, which will further increase our safety margin by extending my tidal window by another 15 minutes. Further, looking at various 'live' websites, it would appear that the wind will now shift to the northwest a little earlier than originally expected, which will also be helpful while berthing

VTS: *That's great. I'll advise the terminal that you'll now berth port side alongside, so they can make the necessary cargo adjustments.*

The two tugs ordered have just called in and are now confirmed as available. The pass with the outbound ship is scheduled for 0835hrs at the junction buoy. I've just spoken to the meteorological centre and they confirm a wind shift to the northwest around 0900hrs. Presently we have 250° at 27kt, gusting to 33kt, trend steady. PH

More info: Nigel Allen is a retired Southampton pilot. He took part in the PIANC working group on behalf of the International Maritime Pilots' Association (IMPA). The PIANC report is available at: www.pianc.org/technicalreportsbrowseall.php Price €90

“There is a level of information out there that simply wasn't available before”

Nigel Allen

Retired Southampton pilot



Photo: Millie Allen



Photo: Stephen Spark

Victoria draws on its African routes

After pirates undermined its cruise business, SPA joined with tourism bodies to create a strategy that links Indian Ocean islands with African mainland ports. **Stephen Spark** investigates

Resourcefulness is second nature to small island states. It is even more essential for the ports on which those countries depend for the imports that sustain their populations.

It is a quality that the Seychelles Ports Authority (SPA) has needed to draw on constantly over the past five years. The prolonged trade depression has presented all port operators with challenges, but the SPA has additionally had to cope with the damage caused to its business by Somali piracy. Its position south-east of Somalia, well within the reach of mother ships, put Seychelles in the front line in the fight against the sea raiders.

While the country has received plaudits for its willingness to prosecute piracy suspects and to host international anti-piracy forces, these efforts have done little to help the SPA's business, particularly in the cruise realm. The fear of attack in the piracy High Risk Area, the consequent need for onboard security, and higher insurance premiums all but wiped the western Indian Ocean off cruise operators' maps. Steve Pointe,

SPA's business development officer, told *P&H*: "We've gone from 43–47 calls to about five. The cruise tourism business has been hit hard, very hard." SPA confirmed that there were 12 cruise calls in 2012, and eight in 1Q13. Mombasa, Dar es Salaam, and Zanzibar fared even worse, recording no calls at all in the 2011/12 season. Pointe explained: "We've had a lot of bad publicity in the past and this has affected the insurance cover for cruise vessels that want to come in this region."

Seychelles' tourism minister, Alain St Ange, agreed: "We went through a hard patch, especially because the waters of Seychelles are four times the size of France, so we get close to the African mainland. Every time a boat was seized off the coast of Africa the media immediately said it was in the waters of Seychelles, which created a bad perception."

The country reacted quickly on several fronts. Initially as CEO of the Seychelles Tourism Board, and now as minister, St Ange has spearheaded a regional tourism marketing initiative called Vanilla Islands, which aims

Costa Allegra, crippled by a fire last year, was one cruise ship that the SPA was glad to see leave the commercial quay at Port Victoria



to give the diverse countries of western Indian Ocean the global profile long enjoyed by the Caribbean. Closely allied to this are joint SPA/tourism ministry plans to attract cruise back not just to Seychelles but also to the entire region, by working co-operatively with the Indian Ocean islands and countries on the east African mainland.

Pointe revealed: "We are discussing with companies like Hapag-Lloyd to see whether they can put a small cruise vessel here. We are calling it the 'Robinson Crusoe Expedition.'" St Ange explained the concept: "Seychelles has a wild card, which is the Aldabara islands, the most unique and pristine, environmentally friendly islands that have a biodiversity equal to none. We are now trying to work out with cruise companies a cruise within our region to stop at Aldabara." The Aldabara group is famous for its population of giant tortoises, abundant birdlife and unique marine ecology. The draw is proving irresistible, said St Ange: "We have been inundated with requests from America, tour operators wanting space on cruise ships." But, he cautioned, "We don't want to open up Aldabara to everybody. It has to be cruise lines that are working with us and for our region."

Piracy has had the positive effect of creating a new sense of regional identity among the Indian Ocean countries, which historically have been separated by language, culture, and distance. The word on everyone's lips today is "partnership", which finds expression in numerous regional organisations, many of which, such as the Indian Ocean Commission, have a maritime component. Two relatively recent additions are the Port Association of the Indian Ocean (APIOI) and the Cruise Indian Ocean Association (CIOA). Chaired by Gichiri Ndua, of the Kenya Ports Authority and former IAPH president (2009–2011), the CIOA brings together the region's port authorities and tourism organisations with an objective to "jointly promote and market the eastern and southern Africa region and south-west Indian Ocean islands to the world as an attractive and worthwhile cruise destination".

Port Victoria's future as a cruise port is bound up with the development of itineraries that connect the islands to mainland Africa, as foreign minister Jean Paul Adam emphasised to *P&H*: "Africa shouldn't just be about solving problems in Somalia and Madagascar, it's about all the opportunities. Tourism is growing hugely in Africa. Africa's borders don't end at the beach; there are Africa's islands." As a recent report, 'Potential for cruise development in the PMAESA region', pointed out, the best way to see those islands is by cruise ship.

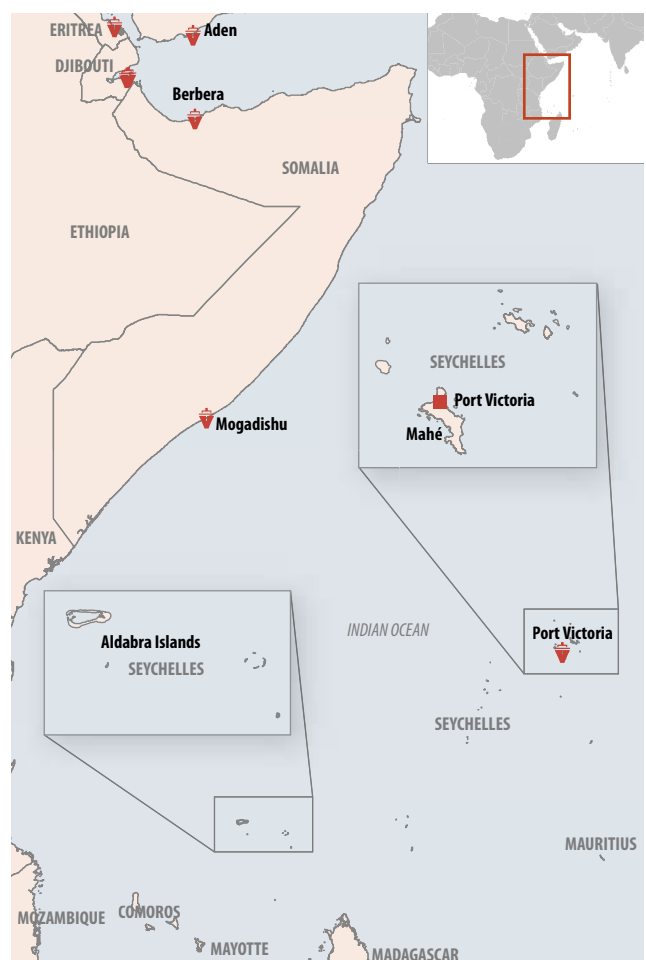


Photo: IHS/Mansdale

St Ange also spoke of an ambition to bring Maldives, Sri Lanka and Zanzibar into the Vanilla Islands fold. That would offer, he said, "a cruising route that is unequalled – a perfect cruising route with unrivalled diversity".

Meanwhile, Port Victoria is preparing to upgrade its facilities by rehabilitating and extending the quay by 420m, making provision for a maximum alongside draught of 15–18m and, in the long term, moving the SPA's offices outside the port area to provide more back-of-quay space for storage. The SPA is also working on a 'Green Port' concept that would include provision of shoreside power to vessels, backing up its already stringent environmental requirements on visiting ships.

Above all, though, the SPA is hungry for new revenue sources. Pointe emphasised: "Our strategy is to find any opportunity for business; we can't just wait for the vessels to come." **PH**

Seychelles in a nutshell

The Seychelles is an archipelago officially of 115 islands, although that number has been increased by the construction of several artificial islands to house the growing population of Victoria, the country's tiny capital. Along with the port, airport, and other major facilities, Victoria is situated on the east coast of the main island of Mahé, home to the majority of the 90,000 Seychellois. The

total land area is tiny – just 451km², making it the smallest country in Africa – yet its exclusive economic zone is the 24th-largest in the world, at 1.3M km².

That demographic means there is a very limited captive market for the port and, unlike other Indian Ocean countries and territories such as Mauritius and Réunion, it has no major export industry apart from fish processing. The Indian Ocean Tuna

Company's Seychelles facility is the second-largest tuna processing and canning plant in the world, employing 2,400 people and accounting for 95% of Seychelles' manufacturing exports.

Tourism contributes more than 25% of GDP and over 60% of foreign exchange earnings, but Seychelles' yachting sector was severely affected by piracy, which restricted both fishing and leisure sailing to the Inner Islands around Mahé.

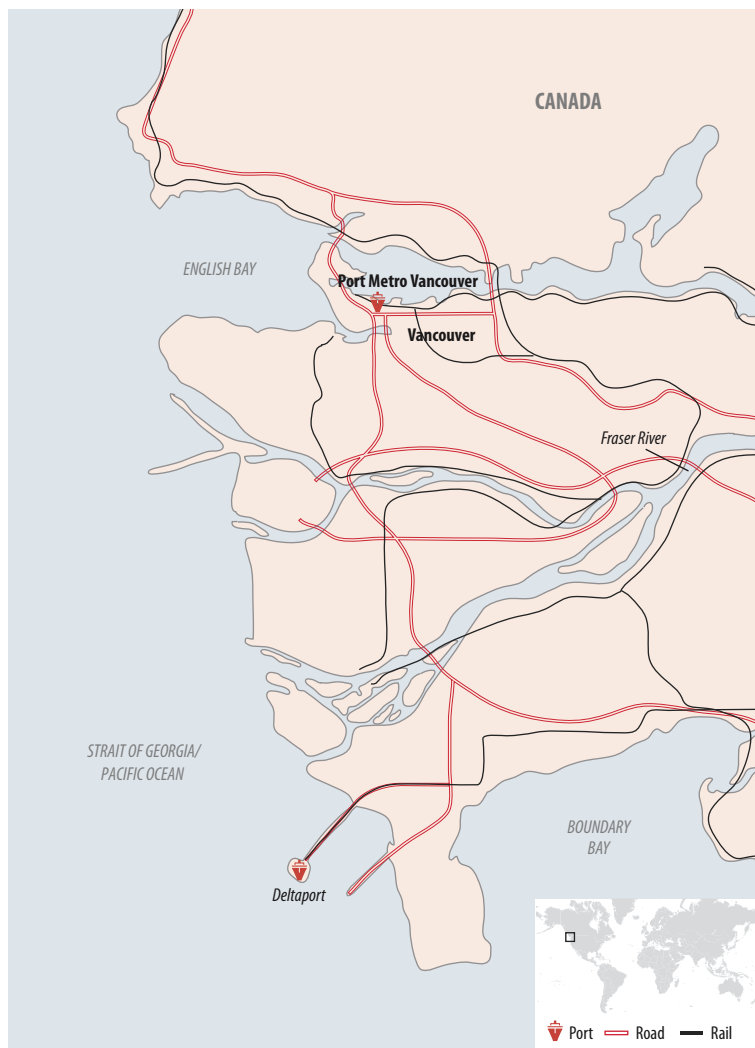


Photo: JHS/Harrison

with it a 180 degree shift in national traffic patterns.

It was this shift which, in 2006, prompted Ottawa to announce that it was contributing CAD591 million (USD575 million) towards a national corridor project and, in the 2007 budget, contributed an additional CAD410 million (USD399) to improve transport links.

These funds attracted contributions from the provinces, including the Province of British Columbia, and industries such as the railways and terminal operators. Of these, CAD658 million (USD640 million) was provided for construction of the South Fraser Perimeter Road; a 40 km-long, four-lane, 80 km/hr route stretching along the south side of the Fraser River that would eliminate bottlenecks and provide container truckers with fast access to Deltaport. The highway is expected to be completed in 2013.

A variety of projects involving road and rail overpasses and interchanges are also being completed across western Canada and British Columbia's Lower Mainland and Rocky Mountain area. These should relieve congestion on truck routes to not only Deltaport, but to Vancouver's inner-city container terminals located on the north and south shores of Burrard Inlet, including: DP World-operated Centerm, and Terminal Systems Inc-operated Vanterm.

Projects underway in the Vancouver area include: the South Shore Corridor Project in Vancouver, the Low Level Road Project in the north Vancouver region, the Deltaport Terminal Road and Rail Improvement Project in Delta, and Roberts Bank Rail Corridor Projects in the Lower Mainland.

In northern British Columbia, a planned expansion of Fairview Terminal, which opened in 2007 with federal, provincial and industry funding, is in the planning stage. The expansion will increase box handling from last years' 750,000 teu per annum to approximately 1,250,000 teu per annum. The second phase of the expansion will increase the terminal capacity to over 2,000,000 teu per annum.

A road, rail and utility access corridor to nearby Ridley Island has also been approved that will lead to the development of a logistics park providing shippers with roads, a loop rail track and serviced sites, transload facilities, a customs inspection building, major potash loading facility, at least one LNG terminal, a wood pellet loading terminal (already underway), and a possible break bulk terminal. The Prince Rupert Port Authority recently issued a call for the 65 to 90 workers needed to fill construction jobs over the two-year construction period starting this summer.

What is most interesting about the corridor initiative is the unusual amount of co-operation that now exists between all levels of government, the port authorities, industry and unions. As Denis Lebel, Canada's Minister of Transport, said recently to a University of Calgary audience: "Our track record shows we've reached across traditional jurisdictional boundaries to find solutions to not only transportation, but also to the infrastructure that supports it.

He added: "For too long, private industry has been ignored when it came to discussing solutions. We're changing that." **PH**

Container corridor

Canada's Asia Pacific initiative is joining up the logistics links and has got people talking, reports **Leo Quigley**

The backbone to western Canada's Asia-Pacific Gateway and Corridor Initiative is the construction of an east-west inter-urban highway that will eliminate congestion and speed truck traffic to Port Metro Vancouver and, particularly, to Deltaport, Canada's largest container terminal.

The initiative was launched based on estimates that container traffic through Canada's Pacific Gateway is expected to double over the next 10 to 15 years and nearly triple by 2030. Projections indicate approximately four million teu of additional rail, truck and terminal capacity will be needed at by 2030.

For Canada, where the bulk of exports were historically shipped through the St. Lawrence Seaway, the rise of China as an industrial powerhouse brought

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To apply for membership please email info@iaphworldports.org or visit www.iaphworldports.org



'The Global Ports' Forum for Industry Collaboration and Excellence'

First LNG bunkering at sea



The world's largest LNG passenger vessel, the 59,000gt *Viking Grace*, now has its own – and the world's first – dedicated bunkering vessel, which started refuelling the 218m ferry on 24 March. MV *Seagas* is a collaborative foray into shipping by Linde Group businesses AGA and Gas Cryo, as operator and fuel provider, and replaces the tanker trucks used until now, bringing the LNG from AGA's Nynäshamn terminal 60km south of Stockholm at a seadrate 12kt.

Although it is the standard-bearer for a new generation of environment-friendly vessel, *Seagas* is no new or technological marvel. It was built by the Löland shipyard in Norway as a small local car ferry in 1974. The former *M/F Fjalir*, *Seagas* is gleaming and clean after a refurbishment and rebuild at Norway's Fiskerstrand BLRT yard.

The cost, like its June 2012 purchase price, has not been disclosed. However, the European Union contributed €261,000 (\$334,000) under its TEN-T programme, which encourages more use of maritime transport in

its Motorways of the Seas policy.

A little surprisingly, the retrofit did not include a new engine that could burn the LNG it carries for its state-of-the-art (and so far only) customer.

Viking Grace started operations from Turku in Finland to Stockholm on 13 January and its four Wärtsilä 8L50DF main engines will now run nearly totally on LNG.

The 49m *Seagas* will refuel the ferry five or six times a week – although the ferry carries enough fuel for three days doing its daily 11-hour return voyage – loading 60–70 tonnes in just 60 minutes.

This choice of refuelling is because, like the other three ships on the Turku-Stockholm service, *Viking Grace* is only in port for an hour at the end of each trip.

The environment-friendly fuel must be kept at -162°C in a single special cryogenic tank of 170m³ supplied by AGA associate Cryo.

In a statement highlighting the importance of LNG in the Baltic and Europe in general, the TEN-T agency said: "*Seagas* will be a flexible alternative to other state-of-the-art technologies and

larger-scale land-based fuelling infrastructure and will later provide fuel for other ships."

Many ship operators regard bunkering at sea as preferable to refuelling on the quayside because of safety considerations when in the vicinity of the general public. LNG's cryogenic temperatures can cause brittle fractures to ship steel and is flammable in a 5–15% mixture with air.

However, safety specialists drawing up bunkering guidelines stress that both landside and seaborne bunkering are safe. DNV classification manager Martin Crawford-Brunt told *P&H*: "It depends how you conduct the bunkering operation. Operations either at sea or on land can be done safely if done responsibly. It depends on the equipment used

and the safety measures in place."

His DNV colleague Henning Mohn said there were efficiency reasons why bunkering at sea might be preferable. "Safety is set at the same high level in both [bunkering at sea and on the quayside]. The reasons [for bunkering at sea] are mainly linked to logistics and commercial factors. By bringing fuel to the ship you are shortening the turnaround time.

"And larger ships require more LNG in one fill than, for instance, a tank truck can deliver. A solution based on multiple truck loads for one ship bunkering is impractical," he told *P&H*.

Nynäshamn is the first LNG terminal in the Baltic, but other ports are planning such terminals as the deadline for Tier III limits in the very-low sulphur and nitrogen emission control areas approaches in 2015 and 2016 – limits that LNG meets comfortably (see page 16).

Seagas, the world's first LNG bunkering vessel

Photo: John Pagni



Notable numbers

1hr

time it will take new LNG bunkering vessel to refuel ferry

\$31M

amount granted by EU for MONALISA 2.0

Working group updates industry

The WPCI LNG Fuelled Vessels Working Group promoted its activities in March and highlighted the movement towards using LNG as a fuel.

Port of Antwerp noted in a statement: "It is generally expected that by 2015 a number of progressive shipping lines will lead the way and will have LNG-powered vessels in their fleet" and this will present challenges for shipping lines and ports globally. Like the passenger vessel *Viking Grace* (see 'First LNG bunkering at sea'), some vessels are already LNG-powered and "more are on order", noted the statement.

It refers to a Danish Maritime Authority study that believes the current use of LNG within the

sulphur emission control zones (in the North Sea, Baltic Sea and off California's coast) will increase by 140% by 2020. That study said: "LNG offers substantial environmental benefits in comparison with conventional fuels. Sulphur and particle emissions would be reduced to almost zero, nitrogen oxide emissions by 85–90% and net greenhouse gases by 15–20%."

It went on to note that the fuel would meet the IMO sulphur regulations due to come into force in 2015.

The WPCI working group is tasked with developing guidelines on safe procedures for LNG bunkering operations, and Antwerp is working with the ports

of Bremerhaven, Brunsbüttel, Gothenburg, Hamburg, Le Havre, Los Angeles, Long Beach, Rotterdam, Stockholm, and Zeebrugge. The working group consists of three sub-groups, focusing on: an LNG bunkering checklist; LNG bunkering risk perimeters; and public awareness.

The working group is keen to recruit other ports and stakeholders – either IAPH members or non-members. They can contact Tessa Major, chair of



develop procedures for bunkering operations. In March last year it put out a tender for the design and construction of an LNG

‘Sulphur and particle emissions would be reduced to almost zero’

the WPCI LNG Working Group, at tessa.major@portofantwerp.com.

Port of Antwerp has already taken steps to offer LNG as a fuel to ships by 2015. In March the port announced it had partnered with classification society DNV to

bunkering vessel for seagoing ships. That should be operational by 2015. Late last year Port of Antwerp carried out a truck-to-ship bunker of LNG fuel.

More info: <http://wpci.iaphworldports.org/>

Australia takes Norway's lead

A DNV-led study has highlighted the 10 Australian ports that are the most suitable locations to establish LNG bunkering infrastructure.

DNV leads a joint industry project exploring the feasibility of LNG bunkering. This has identified Melbourne, Darwin, Brisbane, Gladstone, Onslow, Dampier, Barry Beach Marine Terminal, Hedland, Sydney, and Newcastle as strong candidates.

Australia is looking to follow the Norwegian model and establish LNG bunkering facilities for domestic shipping. It hopes to have the infrastructure in place at these ports by 2016. Norway has led the world with a 12-year track record of using LNG for its domestic shipping.

Key selection criteria included vessel traffic, current vessel profile, proximity to an LNG source and to population, the port's profile and ownership, regional expansion plans, natural conditions, and available governing documents.

Ports Australia CEO David Anderson said the project dovetailed with the national ports strategy, which envisages 50-year master plans. "There's a lot of enthusiasm about short-route shipping on the coast moving to LNG," he said. "Gas-powered ships already visit our ports, so it's on the way and we need to have a handle on regulatory requirements." Start-up would focus on offshore support vessels and tugs. Australia already has the relevant experience in building LNG-fuelled vessels. "[We] will watch with interest this development in the design and operation of vessels."

Gary Webb, chief executive officer of Newcastle Port Corporation, said LNG would help address environmental and commercial challenges facing the shipping industry.

The Australian maritime industry is also subject to a carbon tax – a further incentive for local shipowners to make the switch. "The global order book shows that the current fleet of about 37 LNG-fuelled vessels will grow to about 65 worldwide within a couple of years," DNV found.

It noted that when establishing LNG bunkering, the critical business phase is the first four years, when LNG suppliers rely on "a few brave shipowners willing to be industry forerunners".

Australia could be the world's largest producer of LNG by 2020, according to government projections. It makes sense to use its own resources rather than import fuel, Anderson said.

Established in August 2012, the project partners behind the DNV report are the Australian Maritime Safety Authority, BOC (Linde Group), Farstad Shipping, Ports Australia, Rolls-Royce Marine, SVITZER Australia, Swire Pacific Offshore Operations, Teekay Shipping (Australia) and Woodside Energy.



\$26.5M

estimated annual cost to comply with proposed TWIC security requirements

80

approximate number of wrecks in Douala's port estuary

Piracy: the anchorage challenge

The arrival of private security companies aboard vessels moving through the dangerous waters of the Gulf of Aden, the Arabian Sea and the Indian Ocean has had a decisive effect on the level of piracy in the region. But while Somali piracy may now be in terminal decline, Dr Dave Sloggett told *P&H*, the shipping industry is turning its attention to the perennial problem of piracy inside territorial waters.

The pattern of piracy attacks around the world shifted in 2012. It is a pattern that is being repeated at the start of 2013 and those vessels most vulnerable are those at anchorage, Sloggett asserted. On 14 March this year at 04.02 at Adang Bay 25nm SSW of Balikpapan Port in Indonesia, three robbers armed with long knives boarded a bulk carrier. As soon as the duty officer sounded the foghorn to assemble the crew the robbers fled the scene.

This was the third such incident off the coast of Indonesia that month, the seventh in 2013 off Balikpapan, and continues a pattern that has been emerging over the past few years in the area, Sloggett explained. Only the immediate waters off Port

Harcourt in Nigeria come close to the spate of attacks in Indonesian territorial waters.

International law is written on the assumption that states are able to provide comprehensive maritime security off of their coastal waters, said Sloggett. Where local navies do not have the ability to mount sufficient security patrols to deter attacks, the onus then falls back on the master and the crew to try to protect the vessel and their personal belongings.

Article 101 of the United Nations Convention on the Law of the Sea has been interpreted to mean piracy only exists outside territorial waters. Once inside the 12nm limit, any criminal act is subject to state sanctions, in whatever form the state chooses, Sloggett explained.

For masters of vessels at anchor, their scope to defend themselves against such acts of robbery is not totally clear, for a range of reasons, he continued. Members of the crew defending their lives and property do not wish to be arrested should a robber be injured or die in the course of a robbery. Insurance cover is also an issue and rules issued by flag states are another

factor to consider.

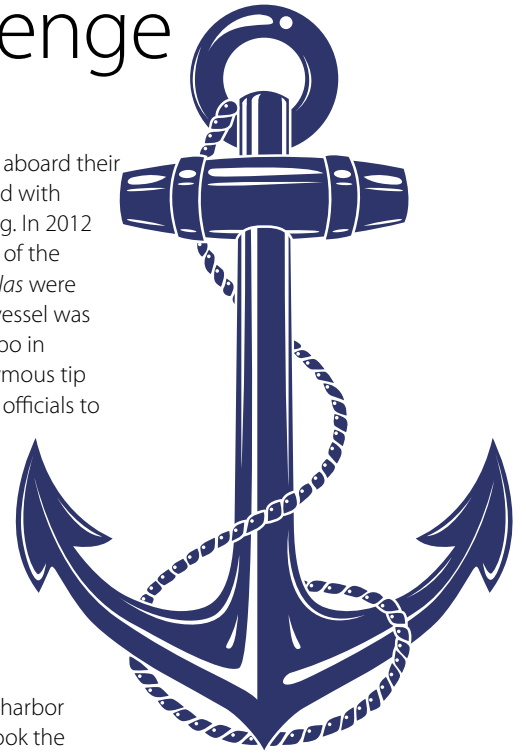
Masters with arms aboard their vessel can be charged with attempted smuggling. In 2012 the master and crew of the US-flagged *Ocean Atlas* were arrested while their vessel was at anchor at Maracaibo in Venezuela. An anonymous tip had alerted customs officials to an alleged haul of drugs being smuggled. During the search of the vessel weapons were discovered.

The master had apparently declared the weapons aboard when arriving at the harbor but the authorities took the view they were being illegally imported. Within a matter of hours the matter was resolved and the crew released, but this is not an isolated incident, said Sloggett.

The incident highlights the complexities surrounding the issue of having weapons aboard ships. International attempts at creating guidelines have not yet seen the equivalent of the best management practice developed to address Somali piracy providing a similar solution for

robberies in territorial waters, asserted Sloggett.

Flag states such as the UK do provide guidance on the hiring of private security companies, but their position on the master and crew having access to weapons to defend themselves is ambiguous. With piracy at anchorage now clearly the greatest threat to vessels at sea, the need to clarify the situation is urgent, he concluded.



Singapore sounds alert on collisions

Singapore authorities have issued a 'safe navigation' warning to all ships calling at the port, following a spate of collisions in March.

The Maritime and Port Authority of Singapore reminded masters and watchkeeping officers through a circular to "fully comply"

with the International Regulations for Preventing Collisions at Sea 1972 to ensure safety of navigation.

MPA highlighted "the importance of keeping proper lookouts and proceeding at safe speeds when navigating" and "to conduct master/pilot exchange of information and

passage plan for the safe conduct of vessel movement".

Singapore is one of the busiest ports and the Singapore Strait among the busiest and most important waterways in the world, so "safe and smooth movement of ships in our port

waters and the Singapore Strait is a top priority", MPA said.

Singapore currently has two port operations control centres (POCCs) "to ensure navigational safety, efficient management of vessel movements and protection of the marine environment". The two centres are manned 24/7 and are fully integrated to function as mutual back-up.

Notable numbers

25%

predicted activity increase per crane when using tandem spreaders

\$640M

amount allocated to build Canada's South Fraser Perimeter Road

Green light for MONALISA 2.0

A pioneering e-navigation project has been granted €24M (\$31M) of new funding by the European Commission. MONALISA 2.0 (Motorways and Electronic Navigation by Intelligence at Sea 2.0) will run until 2015 and has been set up by the Swedish Maritime Administration (SMA) in conjunction with a consortium of public, private, and academic partners from across the European Union to develop and test new technologies intended to improve vessel safety and scheduling.

The project will build on results gathered during MONALISA 1.0 (see *P&H* March/April, p24), which ran from 2010-12, and will be financed by the European Commission's Trans-European Transport network (TEN-T) as part of the Motorways of the Sea project, which aims to strengthen sea transport networks between EU candidate countries and existing member states.

Key activities will include:

- The integration of route planning tools with environmental information and maritime spatial planning to improve maritime safety and environmental protection



Photo: Swedish Maritime Administration

- Concrete demonstrations of new technology designed to improve the efficiency of search and rescue and mass evacuations

- Apply the results of previous EU air traffic management safety programmes, including the TEN-T-supported SESAR (European air traffic control infrastructure modernisation) programme, to the maritime domain.

Most important will be the finalisation of an new internet-based system for vessel traffic management and information

sharing, similar to a system already used in aviation, said Ulf Svedberg, a project leader at the SMA. "At the moment ships can only send and receive information on delays, the number of crew members on board, when pilots are ready to engage from point to point, to a port VTS for example, but the new system will enable this information to be shared between all authorised stakeholders."

The transmission technology for the system was successful in trials by equipment supplier Saab

Transpondertech under MONALISA 1.0 and now other equipment firms, including Kongsberg, SAM Electronics and Transas, have agreed to work together to expand the concept to work across all their bridge systems.

"We are working with 10-15 manufacturers that understand the potential for this and have agreed to co-operate to devise a common technical data protocol to allow data to be sent between any ship's bridge system and any shore centre," said Svedberg.

US targets high-risk vessels for security upgrades

Vessel owners transporting certain high-risk cargoes will be required to purchase electronic readers for their crew's security card credentials, the US government has proposed.

A long-awaited notice of the proposed rule from the US Coast Guard (USCG), released in March, would require vessels transporting those cargoes in bulk – as well as the terminals that handle them – to purchase the readers to check fingerprints embedded on crew ID cards prior to them being granted unescorted access to secure areas at US ports.

Vessels that are certified to carry more than 1,000 passengers would also be required to purchase the readers. The cards, known as the Transportation Worker Identification Credential (TWIC), have been required at US ports since 2007.

High-risk cargoes identified by the proposal are those considered most likely to present a terrorist threat. They include "materials poisonous by inhalation", such as liquefied chlorine gas, and bulk solids such as ammonium nitrate.

Vessels and terminals that handle hazardous materials other than high-risk bulk cargoes, as well as those that carry non-hazardous materials, will be able to continue to visually inspect TWICs, according to the proposal.

Of the 13,825 vessels and 3,270 facilities that the USCG regulates, 38 vessels and 532 facilities would be affected by the electronic reader requirement. The USCG estimated it would cost that group of vessels and facilities a total of \$26.5M/year to comply with the proposed rule.

40

remote-control
box moves
hourly at MIT

300,000m³

amount of sediment
dredged every year in
Brisbane maintenance
programme

IAPH gathers in UAE

Members from the Asia and Oceania regions came together to select the host for 2017 World Ports Conference

IAPH took the opportunity to hold its annual Asia/Oceania Regional meeting on 18 March – the day before the three-day World Ports and Trade Summit 2013 in Abu Dhabi. Secretary-general Naruse, Fer van der Laar, and Hiro Nagai from the IAPH secretariat, along with 40 members from 15 countries, attended the meeting. It was chaired by IAPH first vice-president Grant Gilfillan from Sydney Ports Corporation, Australia.

Abu Dhabi Ports Company (ADPC) hosted the meeting and members were welcomed by Mohamed Al Shamisi, executive vice-president ports at ADPC. This was followed by a presentation from Captain Al Diwani, director of the UAE Marine Inspection and Survey Department at the National Transport Authority, who gave members an introduction to the United Arab Emirates – its role as a maritime nation and the current maritime scene in the Middle East.

At the top of the meeting's agenda was the selection of hosts for the 30th IAPH World Ports Conference to be held in the Asia/Oceania region in 2017. Indonesia Port Corporations I, II,

III, and IV offered to take on this responsibility and after considering the offer, the meeting unanimously accepted and supported it, pending the final decision, which was to be made by the IAPH Board of Directors meeting in Los Angeles in May 2013. The corporation's representative, Mulyono of Indonesia Port Corporation II, made a brief speech inviting all to Bali, Indonesia, in 2017.

The meeting also confirmed that Sydney Ports Corporation would host the IAPH Mid-term Ports Conference and Board Meeting in Sydney, Australia, from 6-10 April next year, and that the Asia/Oceania Regional meeting for 2014 would be held in conjunction with it.

SG Naruse reported that Priyath Wickrama, chairman of Sri Lanka Ports Authority, had been elected in October 2012 by the region's regular members to succeed Grant Gilfillan as the region's vice-president and, further, that Gilfillan and Wickrama would officially be installed as IAPH president and 3rd vice-president respectively at the upcoming IAPH World Ports Conference in Los Angeles.



IAPH 2nd VP Santiago Garcia-Milà talks to delegates during a coffee break



IAPH 1st VP Grant Gilfillan with Mohamed Al Shamisi and AW Al Diwani of ADPC

Members then attended the two-day conference, which differed to usual conferences as it was an 'open' style discussion, rather than a presentation-based format, to encourage debate and sharing of ideas. Topics discussed included global changes, and the challenges and pressures that arise as a result of those changes, in relation to international and regional trade patterns and economic realities over the short, medium and long term. On day two, delegates considered the impact of the Panama Canal expansion and its affect on emerging markets, and considered Africa and its relationship with China.

Conversation then took a more technical focus as it considered the latest in port technology, and looked at some industry case studies in port automation and cargo handling. The United Arab Emirates and its increased activity in construction, development, and the regions interest in industries such as oil, gas, petrochemicals, and aluminium, were on the agenda.

Finally, cruise tourism in the Middle East was discussed, and the business case for a super yacht marina in the region was analysed. On the third and final day of the conference, delegates enjoyed a site visit to Khalifa Port. **PH**

Background photo: Penny Thomas

The Abu Dhabi skyline, as seen from the water. The city was the location for the IAPH Asia/Oceania Regional meeting



Dr Priyath Wickrama (left) talks to Secretary General Naruse



Mohamed Al Shamisi, executive VP, Ports, at ADPC welcomed IAPH members to the Asia/Oceania Regional meeting

Photo: Abu Dhabi Ports Company

Photo: Abu Dhabi Ports Company

At the secretariat...

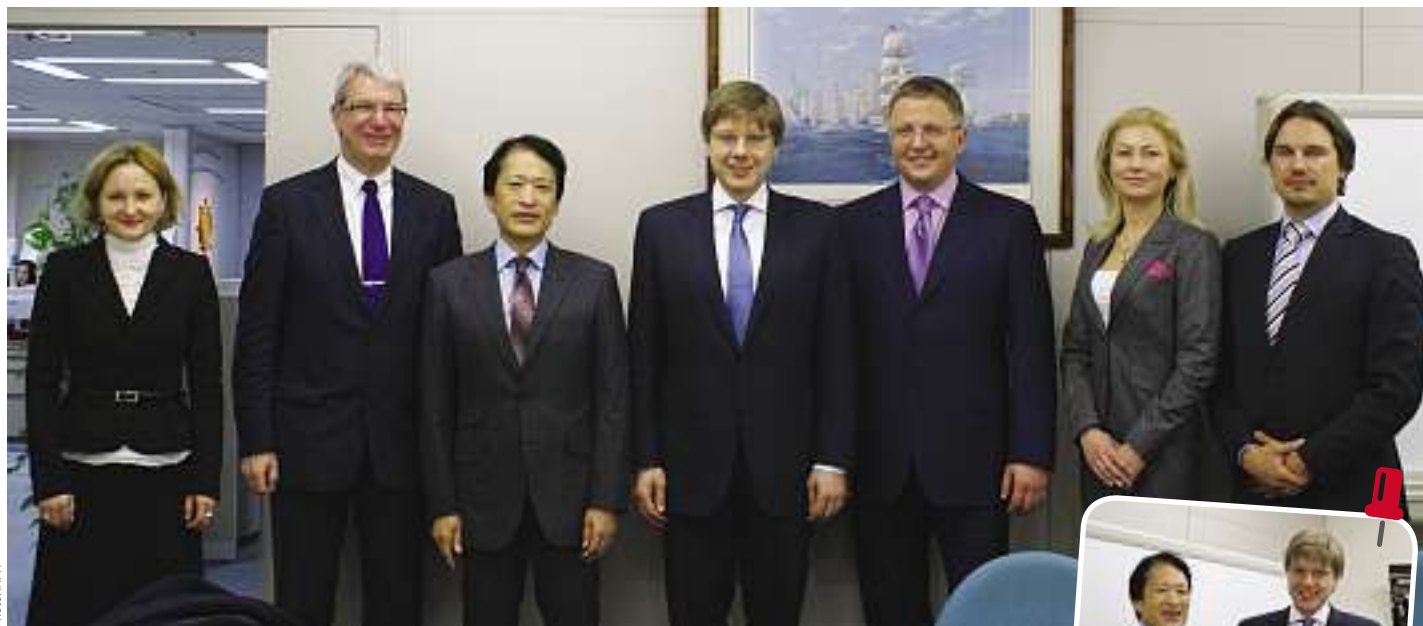


Photo: IAPH

The delegates of City of Riga, Latvia, headed by Nils Usakovs, mayor of Riga, visited the IAPH Head Office in

Tokyo on 27 February. Their visit was part of City of Riga's promotion in Japan. They exchanged their views

on various topics with Secretary General Susumu Naruse and his staff.

Photo: IAPH



We value your opinions

Do you have strong views about any of the articles in *Ports & Harbors*?

Are there other industry issues you feel strongly about?

Email your views to ph@iaphworldports.org and we'll be happy to include them

Membership notes

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

Regular member

Port Authority of Thailand

Address 444 Tarua Road, Klongtoey Bangkok 10110, Thailand
 Telephone +662-269-3000
 Fax +662-672-7156
 Email info@port.co.th / theerakarn@port.co.th
 Website www.port.co.th
 Representative Ittichai Supanakoon, RTN, deputy director-general of human resources management and finance

Email
 Website
 Representative

gekalhagen@portoflongview.com
www.portoflongview.com
 Geir-Eilif Kalhagen, CEO/managing director

Associate member

Stephen Ip The International Society of Logistics, Hong Kong
 Address Flat B43/F Block 3 Florient Rise 38 Cherry Street, Tai Kok Tsui, Hong Kong, China
 Telephone +852-92753097
 Email stephenkmp@gmail.com
 Website Xxx
 Representative Stephen Ip, secretary
 Nature of Business Activities: Training and research for maritime and port industry

Temporary member

Port of Longview

Address 10 Port Way, PO Box 1258, Longview WA 98632-7739, USA
 Telephone +1-360-425-3305
 Fax +1-360-557-8122



Tell us about your port's plans

Ports & Harbors is part of your IAPH membership and provides articles of interest to port professionals, keeps members abreast of IAPH activities, and offers them the chance to share their experiences and insight with other ports.

The editorial team is pleased to consider any article ideas that you may have. Perhaps you can provide a case study on a recent port development or training initiative. Or maybe your port is working with government to extend its hinterland links, or has been privatised or merged with another company. If so, please tell us about it.

For September/October and November/December issues, we have a mixture of technical and

managerial themes planned:

September/October issue

- Cover feature: Asia/Oceania regional focus
- Feature: Port software
- Feature: Port maintenance and new infrastructure

November/December issue

- Cover feature: Personnel training
- Feature: Container and bulk handling equipment
- Feature: Port safety and security

If you have any ideas for articles that you would like to discuss with the editor, please email Penny Thomas at penny.thomas@ihs.com

Knatz honoured by university



Photos: Port of Los Angeles

IAPH president Geraldine Knatz received an alumni merit award from the University of Southern California (USC) at the award's 80th ceremony on 27 March. She holds two degrees from USC – a master of science in environmental engineering and a doctorate in biological science. Knatz has been executive director at Port of Los

Angeles since 2006, but prior to that she was managing director at Port of Long Beach. Her career began in 1977, however, at Port of Los Angeles as an environmental scientist. The award is given to those whose accomplishments speak well as to the range and quality of USC's education, the university says on its website.

Dates for your diary

A selection of forthcoming maritime courses and conferences



May

17–19: 1st International Seaport Festival 2013 – Vung Tau province, Vietnam
<http://seaportfestival.net>

From 22: Fundamentals of Container Terminals – distance learning
www.ibc-academy.com/FLR2377IAPH

21–22: PIANC AGA 2013 – Marseilles, France
www.pianc.org

23–24: PIANC Mediterranean Days, 3rd edition – Marseille, France
www.pianc.org

26–28: Perspectives of Shipping – Paris, France
<http://agm.bimco.org>

29–30: 9th Trans Middle East Beirut 2013 – Beirut, Lebanon
www.transportevents.com

30–31: ESPO 2013 Conference – Varna, Bulgaria
www.espo-conference.com

June

3–7: WODCON XX – Brussels, Belgium
<http://cedaconferences.org/wodcon>

3–14: Nautical Accessibility & Maritime Traffic Management – Antwerp, Belgium
www.portofantwerp.com/apec

10–21: Container Terminal Management – Antwerp, Belgium
www.portofantwerp.com/apec

13–15: AIVP General Assembly – Helsinki, Finland
www.aivp.org/helsinki/en/

25–27: TOC Container Supply Chain: Europe – Rotterdam, Netherlands
www.tocevents-europe.com

July

11–12: 11th ASEAN Ports and Shipping 2013 – Ho Chi Minh City, Vietnam
www.transportevents.com

From 17: Fundamentals of Port & Terminal Security – distance learning
www.ibc-academy.com/FLR2347IAPH



Photo: BPA

Busan and beyond

Busan Port Authority marked the ninth anniversary of its establishment on 16 January 2013. Part of **President Ki-tack Lim's** vision is to expand the port's influence past its borders

“I will focus on building the capacity of BPA's employees through global-oriented training and education programmes.”

Nine years ago the Republic of Korea's central government decided to hand over the management of Busan Port to a newly organised port authority to develop it into one of the world's leading facilities, and BPA was born. It was set up to contribute to the country's economy by making Busan Port a regional logistics hub through efficient port development, management, and operation, and in turn promote the economic growth of the nation. It has lived up to these expectations by inducing an efficient transshipment system in northeast Asia, that has helped reduce overall logistics costs in the region.

As the fourth president of BPA I can confidently say that Busan Port has shown remarkable progress since its establishment. Its container throughput has recorded significant growth: in 2004 it was 11.5M teu, but in 2012 it reached 17M teu, an increase of 50%. The 2012 figure showed single digit growth compared with double digit growth as seen in 2011, but I believe that has Busan fared well considering smaller volume gains seen in neighbouring ports, all of which were affected by the global economic downturn. The decent traffic rise at Busan Port amid adverse economic conditions can largely be attributed to strong performance in transshipment cargo, which rose 70% to 8.1M teu over the past nine years.

The port's distribution facility – the Distripark – in the area of Busan New Port is expected to generate value-added benefits for cargo moved through the port. Currently 30 multinational warehouse operators in the 1.2Mm² Northern Distripark are in full operation and, with a cargo throughput of 661K teu last year, has created 1,400 jobs. BPA will continue to develop and complete a planned Western Distripark of 3.58 Mm² and Southern Distripark of

1.42Mm² in the mid-to-long term.

Since I took over as president in July last year, I have declared seven major projects, which will help us to achieve BPA's vision – to develop Busan Port into the hub of choice for maritime and logistics in northeast Asia.

These seven major projects are to increase Busan Port's container volume to 18M teu, redefine the function of the old North Port, facilitate inter-transport between North and New Ports, efficiently redevelop old quays in North Port, strengthen global networking, implement project diversification, develop port infrastructure as scheduled, and devise BPA's 2030 vision and strategy.

I will also focus on building the capacity of BPA's employees through global-oriented training and education programmes to further internationalise Busan Port Authority.

I would like to emphasise that Busan Port will go beyond borders and help the world achieve sustainable economic progress by reducing international transshipment costs. Our efforts to create an innovative, state-of-the-art port facility will go on. **KT**

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