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A look at three of the recipients of TEN-T funding

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Official Journal of the International Association of Ports and Harbors

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Published bi-monthly by the International Association of Ports and Harbors (IAPH), edited and produced by IHS Maritime.

IAPH

Publisher:
Susumu Naruse, Secretary General of IAPH
info@iaphworldports.org

EDITORIAL & PRODUCTION

IHS Maritime
Sentinel House, 163 Brighton Road,
Coulson, Surrey CR5 2YH, UK
Tel +44 (0)203 253 2100

PUBLICATIONS

Head of Publications: Nick Blackmore
Email: nick.blackmore@ihs.com

Publications Editors:
Mike Brock, Richard Halfhide, Lisa Maher

CONTENT

Head of content: Neil Wiese
EMEA managing editor: Penny Thomas
APAC managing editor: Crystal Chan
Americas editor: Greg Miller

DIGITAL

Head of Digital: Kate Pain
Digital Editor: Yannick Guerry

CHIEF MARITIME ANALYST

Richard Clayton

COPY EDITING

Director, EMEA editing & design:
Jonathan Maynard
Chief sub-editor: Thomas Brown
Deputy chief sub-editor: Terry Gault

DESIGN

Senior Manager: Carol Kidd
Manager, Design: Hannah Kidd
Designers: Mark Newton, Carolina Lorenz

PRODUCTION

Director EMEA, Production Services:
David Ward
Production Controller: Sarah Treacy
Image Services Manager: Jo Agius

GENERAL

Senior director, Insight
IHS Maritime & Trade: Louisa Swaden
Senior director, global editing,
design and production: Sara Morgan

ADVERTISING SALES

Advertising and Subscription Sales:
Group sales manager: Natasha Bailey
Tel: +44 (0)203 532 2142
Email: natasha.bailey@ihs.com

SUBSCRIPTIONS

International Association of
Ports and Harbors
Price Japanese ¥12,000 (US\$120 / UK£80 /
€90), postage included. Visa and MasterCard
accepted or for Bank Transfer. You do not have
to be an IAPH member to subscribe – 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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COMMENT

Make history

I invite you to meet your peers at our
World Ports conference



Susumu Naruse

Secretary General – The International
Association of Ports and Harbors



The IAPH is going to have an epoch-making World Ports Conference in Hamburg this June. As one of the busiest ports in Europe, the Port of Hamburg has been a centre of international trade and logistics for a long time.

However, the port has also faced many difficulties because, as a river port located about 100 km from the sea, it has had to make continuous efforts to keep the port and the river channel deep and wide enough to accommodate vessels of increasing sizes. Nowadays, overcoming these constraints, the port has transformed itself into a smartPort by utilising top German IT technologies. I would like to welcome you to the conference at this spectacular port.

Along with the conference, we are holding technical committee meetings and the Women's Forum. This year, the format of the committee meetings has changed a little. Unlike the past few occasions – where committee meetings were held as a group, each of which was chaired by the respective vice-president – this

time, each committee has its meeting independently. In this way, a chair can manage a meeting in his/her own manner and take more responsibility for the committee discussions. Since a large part of the IAPH's business value is attributable to the activities of technical committees, we would like to empower the roles of the technical committees and their chairs.

Hamburg will see amendments proposed to the IAPH constitution and by-laws. As the current rules were enacted around 60 years ago, the basic decision-making structure has remained the same, with some minor revisions from time to time. This time, however, we are going to propose a governing rule that is completely different from the current one: the council, comprising 20-25 members, replaces the current 90-strong board of directors; and the number of IAPH sub-regions and vice-presidents are increased to six.

With the introduction of the new rule, IAPH will be entering a new era with the ability to make quicker decisions and provide a more member-oriented service.

In addition to these in-house matters, the host port has developed a superb conference programme, as well as a variety of social events. Even if you are not from one of the IAPH member ports, please join us because we have a scheme under which non-member ports that participate in the conference are given a year's IAPH membership. I look forward to seeing you all in Hamburg. **PH**

“I would like to
welcome you to the
conference at this
spectacular port”

Printed by Warners Midlands plc

The Maltings, Manor Lane, Bourne, Lincolnshire PE10 9PH ISSN 0554-7555



Port updates

► CALL TO EU ACTION

Leading European Union shipping industry bodies have called on the European Commission to take action on customs procedures and port services to help them get full benefit from the internal market for shipping.

In a joint statement, seven industry bodies – representing shipowners, cruise companies, tug owners, dredging companies, ferry operators, shipbrokers, and agents – urged the commission to start a drive to eliminate administrative barriers to shipping competitiveness as part of the mid-term review of EU maritime transport policy.

► OSAKA CARGO FALLS

Cargo traffic of Port of Osaka in western Japan fell by 9.6% in December 2014 from a year earlier to 7.060 million tonnes, according to preliminary figures from the Osaka municipal government on 31 March, reports Hisane Masaki.

Of the 7.06 million tonnes, 3.048 million tonnes came from foreign trade, down 6.6% year-on-year (y/y), and the remaining 4.012 million tonnes came from domestic trade, down 11.8% y/y. The port exported 839,251 tonnes of cargo, up 7.8%, and imported 2.209 million tonnes of cargo, down 11.1%.

► THREE CRANES

Finnish crane manufacturer Konecranes has received orders for three ship-to-shore (STS) cranes from PT Pelabuhan Indonesia III (Persero) in Surabaya. They will be delivered to the PT Terminal Petikemas Surabaya (TPS) at the end of 2016.

The three high-performance STS cranes have a lifting capacity of 60 tonnes and an outreach of 46 m. They will allow the Surabaya terminal to handle bigger vessels after the Surabaya West Access Channel improvement is complete.

Mumbai Port offers land for waterfront ship repair yard

Ramadas Rao reports that Mumbai Port Trust in India is forging ahead with plans to offer land, waterfront, and jetties to investors to develop ship repair infrastructure and operate the facility. Four existing jetties will be provided for floating repair and outfitting work, as well as other operations.

In a note made available to P&H, Mantrana Maritime Advisory, consultant for the ship repair project, pointed out, "They [the jetties] are in working condition. Therefore the cost of developing civil infrastructure reduces substantially."

Land dedicated to development of warehouses and other facilities has been strengthened to facilitate drydock operations. The existing drydock, measuring 304 m x 30.48 m, would be made available for integration with the project to further develop repair facilities.

The project is open to both domestic and international bidders. It can be fast-tracked because the port is already operational and hence regulatory approvals, which are notorious for delays, should be faster.

The move by Mumbai Port Trust to open up port land for development through private investment follows a need to not only develop an additional revenue stream, but also to focus on core operations of cargo handling, explained Mantrana director Anand Sharma. While a small cluster of shipyards exists for repair, this is not sufficient to cope with the growing demand for vessel repair and maintenance.

Although no longer the largest port in India in terms of cargo, throughput following the emergence of Jawaharlal Nehru



Container yard at Mumbai

Port Trust in 1989, Mumbai continues to attract calls, mainly due to its key location on the west coast and a deep, natural harbor.

Mumbai Offshore, the country's biggest offshore oil field, has generated demand for repair of specialised vessels deployed to support oil and gas exploration and production activity in the Arabian Sea. Surging demand for repairs has meant that the queue for a drydock slot can stretch to almost 100 ships.

Large ships, however, cannot be accommodated because of the width of the lock gates at Indira Docks. Only vessels less than 30 m wide can enter. However, Mumbai Port said it would allow both deployment of a large floating drydock in the open sea for bigger vessels, and provide land access.

The landlord port model will be followed for the project, although the terms of the agreement will be formulated only after consultation with

stakeholders, Sharma emphasised. Towards this end, stakeholder workshops will be held.

Even as the land development project of Mumbai Port is set to roll, more major ports (those controlled by the government) that are sitting on large parcels of land are likely to take up similar measures to raise cash. The move may gather momentum if the government's move to 'corporatise' ports succeeds. The Indian budget for the financial year 2015/16 (ending 31 March 2016) has singled out corporatisation as a necessary reform to grant greater financial autonomy to major ports, which at present are run by a board of trustees.

This is easier said than done, however, because of strong resistance by dock unions to any measure that would loosen the hold of the government in the interests of job security and continuity of benefits. Unions are already up in arms and have threatened work stoppages to protest against the move.

India steps up its Sri Lankan presence

India has moved to secure a stronger presence in the port of Trincomalee, in the eastern part of Sri Lanka, to counter the growing influence of China, which has two terminals, one on the west and one on the south coast of the island.

The Sri Lankan unit of Indian Oil Corporation, Lanka

IOC, and the island's state-owned refiner, Ceylon Petroleum Corporation (CPC), will jointly develop Trincomalee's oil storage facility, Indian prime minister Narendra Modi announced on a visit to the island. Trincomalee's China Bay facility has a potential storage capacity of about 1 million tonnes.

Australia could ban ships

The Australian Maritime Safety Authority (AMSA) may bar ships from the country's ports should they incur three detentions within two years, writes Zoe Reynolds.

The authority has released a marine order detailing its 'three strikes and you're out' policy on compliance with international safety and labour standards.

'Directions and refusal of access to Australian Ports' details AMSA's new powers under the Navigation Act 2012. AMSA may refuse a ship access to Australian ports if it has a poor port state control (PSC) record, or if there are concerns about its operator.

The notice warns shipowners of a three-month ban on a vessel if it returns to Australia without carrying out remedies required after having three detentions in the past two years.

Vessels that have been barred for three months and return only to be detained again within two

years of the first exclusion will be banned for further 12 months.

If the vessels are still found to breach safety and labour laws upon return, AMSA may refuse them entry to Australian ports for further two years.

The notice highlights wages, crew welfare, fatigue management, and unsound navigation practices, especially while transiting the Great Barrier Reef, as issues leading to detentions and bans.

Vessels found breaching Australian legislation or with a substandard vessel operator management system that poses "a significant risk to the welfare of seafarers, their safety, or Australia's marine environment", can also be expelled from Australian waters.

"A direction resulting from a new detention in Australia will generally have effect as soon as the vessel leaves the Australian

port or anchorage following the clearance of the latest detainable deficiency," the notice details.

AMSA, however, says it may allow the vessel access to a specific port in the event of *force majeure* or overriding safety considerations. "Specific requirements may be imposed on the owner, operator, or the master of the ship to ensure safe entry in those circumstances," said the AMSA.

Ship management companies or operators are also under the microscope. "When considering vessel performance, AMSA will also look at the performance of the company as a whole," the notice states.

When the standards of some vessels under an operator are so poor as to cast significant doubt on the standards of other vessels managed by the same company, AMSA may also consider barring other ships in its fleet.

To date, four vessels have been banned from Australian ports – three for three months each (*Vega Auriga*, *Territory Trader*, and *Meratus Sangatta*) and one repeat offender, *Red Rover*, for 12 months.

Red Rover was the first ship to be banned from Australian ports for a year under an order that was issued in January. It had been given shorter bans on three occasions since September 2014.

The ship's most recent detention was on 28 January 2015 in Fremantle, Western Australia.

All three detentions identified failings in the vessel's safety management system.

Port updates

► LOW MAINTENANCE

Tideland Signal Corporation has introduced the SB-1800 polyethylene buoy, for higher performance and low maintenance use in all, including the harshest, marine environments.

SB-1800 "has been uniquely designed to allow deployment in a wide variety of applications that include shallow water, channel edges, rivers up to 6 kt current, deep harbors, and fast current tidal zones. Features that make this buoy unique include a single lift eye, removable internals (lifting/mooring connections), moulded foot wells, and it stands upright on vessels."

► NO-GO AT YEMENI PORTS

The Saudi Arabian-led coalition of anti-Houthi forces attacking Yemen has tightened the blockade on Yemen's ports. Ships are unlikely to be able to access ports in areas that the coalition deems to be under Houthi rebel control.

In an urgent member advisory note, Skuld P&I Club warned, "An increasingly tight blockade is being affected [sic] on Yemeni ports. Members with vessels at Yemen, or proceeding to Yemen need to urgently review the situation in the light of this development."

► HONESTY MATTERS

Japanese shipping company NYK Line has teamed up with its former subsidiary Monohakobi Technology Institute and Japanese manufacturer Semco to develop Honesty, a tank-sounding device that claims to better measure the surface of liquids stored in vessel tanks.

The three parties claim Honesty not only significantly streamlines sounding the surface of liquid in tanks but also provides accurate measurements of bunkers. This issue has caused Singapore to mandate the use of mass-flow meters by 2017.



Vega Auriga was one of the ships banned by the Australian Maritime Safety Authority for breaching safety and labour regulations

Port updates

► PORT RETHINK

Indonesia is seeking a new location for a seaport after safety concerns were raised about the proposed Cilamaya port project. The country's vice-president, Jusuf Kalla, said the Cilamaya project was "too close" to an oil and gas block.

► A CHINA FIRST

The first Wärtsilä two-stroke engine with a high pressure SCR (selective catalytic reduction) system manufactured in China is to be installed in a new 22,000 dwt multipurpose vessel currently under construction at the Ouhua Shipyard for China Navigation Co.

US west coast ports clear out

An all-out effort to work through a backlog of containers stacked at docks and strings of vessels anchored at ports and harbors up and down the US west coast could last until the middle of the year.

The major west coast container ports had been struggling for much of late 2014 and early 2015 to keep terminal congestion from bringing port operations to a halt. But the signing of a tentative dockworker labour agreement on 20 February meant the ports and their customers could officially begin digging out.

"With [a labour pact] in place, the ports of Long Beach and Los Angeles can focus on velocity, efficiency, and environmental sustainability," Port of Long Beach



Damian Doanigan/AP Press Association Images

CEO Jon Slangerup said after the tentative accord was signed. "Together, we will quickly re-establish our gateway as the most efficient route between Asia and North America."

Disruptions were most intense

at the Los Angeles-Long Beach port complex, but congestion at other west coast ports began reaching crisis last year as well. Much of the blame was attributed to equipment shortages and union work slowdowns. The box terminals had been operating without a labour contract covering west coast dockworkers since 1 July 2014.

Container terminals and port gates also struggled to efficiently work cargo and process loads from the larger container ships – up to 14,000 teu – that have begun calling more frequently on the west coast last year.

With the confidence that a west coast shutdown had been averted, came initiatives designed

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to get cargo moving again – and possibly continue once operations return to normal.

Terminals and shipper customers began working with the Port of Los Angeles in March on a scheme to expedite import boxes to help clear the backlog. The programme involves moving high-volume customers' containers to a near-dock yard where they are sorted for destination to inland distribution centres. The Port of Long Beach started a similar programme for exports.

"This whole clean-up effort is working in four or five different directions," Jeff Burgin, senior vice-president of Los Angeles-based Pasha Stevedoring & Terminals, told *P&H*.

The two ports – Los Angeles and Long Beach – also began working together with three major harbor drayage companies to

begin a 'grey' chassis pool that gives truck drivers more flexibility in moving containers in and out of port gates.

The Port of Oakland had to resort to opening weekend gates to alleviate the pressure once waiting times at the gates began increasing and vessels had to drop anchor in San Francisco Bay. "Weekend gates have been used to ease the cargo build-up of the past few months. We're now looking at whether weekend and/or night gates would be beneficial for the long-term," said Port of Oakland representative Marilyn Sandifur.

The port announced on 6 March that cargo backups there should clear within two months.

"There's still a great deal of work to do," said Oakland port's maritime director, John Driscoll. "But we're seeing good

collaboration between labour, terminal operators, and harbor truckers and our customers will soon benefit from faster, smoother cargo flow."

As with Los Angeles and Long Beach, the ports of Seattle and Tacoma, which combined are the third-largest container gateway in North America, are building on a partnership that started last year. Located roughly 37 km apart in Puget Sound, the two ports established a Seaport Alliance to combine their strengths and make them more competitive.

Port of Tacoma commission president Clare Petrich said Seattle and Tacoma "face fierce competition from ports throughout North America, as shipping lines form alliances, share space on ever-larger vessels, and call at consolidated terminals at fewer ports".

Port updates

► P&O PORTS REVIVED

Dubai's Ports, Customs and Free Zone Corporation (PCFC) is extending its ports and terminals empire globally by reviving the P&O Ports name for a new company specialising in multipurpose ports, starting with Madagascar, Somaliland, and Albania, where it has signed MOUs.

P&O Ports will specialise in developing and operating seaports and inland ports, particularly in emerging economies. PCFC said, "These brownfield ports, predominantly handling general cargo and bulk commodities, are a source of great opportunity, but tend to be uneconomic for larger operators."



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MIT's remote gantry control

Reliability, efficiency, connectivity

Carlos Urriola and Stacy Hatfield of Manzanillo International Terminal explain why Panama's ports rank so high – and why more potential remains to be tapped

Privatisation of Panamanian ports is a history of success, according to the World Economic Forum and the World Bank. In a study for the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), maritime expert Jan Hoffman praised the achievements of the Panamanian model of port privatisation.

In *The Latin American ports: results and determinants of private sector participation*, Hoffman noted that "the first concession [in Panama] was awarded to Manzanillo International Terminal (MIT) in 1994". He pointed out that "this terminal, with the operator starting it from zero in April 1995, moved 860,000 teu in 1999, thus becoming the largest container terminal of Latin America [at that time]".

Fifteen years later, MIT, Evergreen Group-

operated Colon Container Terminal (CCT), and Hutchison Port Holdings-operated Cristobal Terminal comprise a port system in Colon that has led Latin American container ports since 2011. The Cristobal-MIT-CCT cluster handled almost 3.3 million teu last year, with 63% handled by MIT.

Carlos Urriola, senior vice-president of Carrix group, the operator of MIT, attributed the success in Panama to the strong commitment to the mission of "providing efficient and reliable port services to our customers by excelling in productivity and quality".

He noted that "with the help of our skilled and dedicated personnel, MIT is fulfilling the needs of its customers, while taking advantage of the synergies offered by the Panama Canal to strengthen Panama's logistics platform for the benefit of world trade".

In the research paper *Port privatization, efficiency and competitiveness: some empirical evidence from container port terminals*, Jose Tongzon and Wu Heng of the National University of Singapore Department of Economics identified eight key determinants of port competitiveness: port efficiency, handling charges, reliability, selection preferences of carriers and shippers, the depth of the navigational channel, adaptability to the changing market environment, landside accessibility, and product differentiation.

"We at MIT are very aware of the current and future needs of our customers and are preparing to meet them, while keeping the cost of our services at the lowest possible level," said Urriola. "We have also developed a high-tech logistics park with financial services and excellent connectivity that is fulfilling the needs from electronic equipment providers and sophisticated pharmaceutical producers.

"In addition, we have developed warehousing areas and facilities aimed at offering ideal conditions for those companies interested in taking advantage of Panama's port, air and land connectivity, offering added

value to our core operation," said Urriola.

As an example of high-tech projects, he cited the joint venture between ABB Group and ZPMC to provide remote-control gantry cranes and technical assistance.

According to the 2014/15 Global Competitiveness Index, Panama, which is ranked 48th worldwide, continues to be the most competitive economy in Central America and second in Latin America, after Chile, thanks to its world-class infrastructure, ports, airports and financial services.

An appraisal survey among port customers sponsored in 2012/13 by the World Bank ranked Panamanian ports first among those in Central America. The survey gave Panama a value of 6.4 out of a maximum 7.0 points. Considering that an average of 30–50 containers/hour is rated 'satisfactory to good', the productivity of Panamanian ports, with about 45 container moves/hour, is well over the average in Central American terminals.

For MIT general manager Stacy Hatfield, the terminal's high productivity is the result of a combined effort in training, enhanced labour relations and the incorporation of state-of-the-art technology. He noted that the training of MIT's personnel was not only designed to meet local needs, but to support international operations of companies affiliated with the Carrix group.

"This excellent performance of our collaborators has been recognised by the Carrix group, which has assigned MIT to provide technical assistance to the Cai Lan International Terminal, its new port venture in Vietnam," said Hatfield, who noted that MIT also trained in situ personnel from other ports. Through its shipping arm, SSA Marine, the Carrix group operates port systems in North and South America, including in Panama, Mexico, Colombia, and Chile.



Greg Miller/HIS

“Panama is in line to become the logistics and trade centre of the Americas”

Carlos Urriola

SVP of MIT operator Carrix

Looking forward, Hatfield believes the debut of the new set of locks on the Panama Canal at the beginning of 2016 will not only enhance the efficiency of the waterway and provide economies of scale to shippers and shipowners, but will also open huge opportunities to Panama to strengthen its leading role as a logistics centre.

In anticipation of the new locks, MIT implemented a USD300 million expansion and modernisation programme in 2012 to increase annual capacity from 2.5 to 4 million teu. The expansion, completed in 2014, includes three additional berths, the purchase of 12 gantry cranes and additional equipment to service super-post-Panamax container ships, and the deepening of the access channel, wharves and operational areas to guarantee a maximum draught of 16.5 m.

Equipment includes three super-post-Panamax cranes able to service 23 containers across the deck of a vessel, and one super-post-Panamax crane with outreach to service 25 containers across a deck.

"With five fully equipped berths supported by state-of-the-art technology, the MIT port complex is prepared to continue providing a

highly efficient and reliable service, as currently, and when the expanded Panama Canal starts operations, very likely during the first quarter of 2016," said Urriola.

In November 2014 the Panamanian government created a new logistics cabinet and has established an effective line of communication with the Panama Chamber of Shipping and the Logistics Business Council, aimed at promoting synergies to redefine Panama's maritime and logistics strategy and approve a strategic plan to meet those goals and objectives.

"As a member of the Chamber of Shipping, MIT has been very proactive in this national effort intended to consolidate Panama as the logistics and distribution hub of the Americas," added Urriola.

In addition, MIT is providing support to the planned Mediation and Arbitration School, which is being implemented by the Chamber of Shipping under the sponsorship of the Latin America Development Bank and with the support of the Panamanian Association of Maritime Lawyers (APADEMAR). The project is being co-ordinated by the former dean of Panama International Maritime University, Captain Orlando Allard. APADEMAR already operates the Panamanian Center of Maritime Conciliation, Mediation and Arbitration.

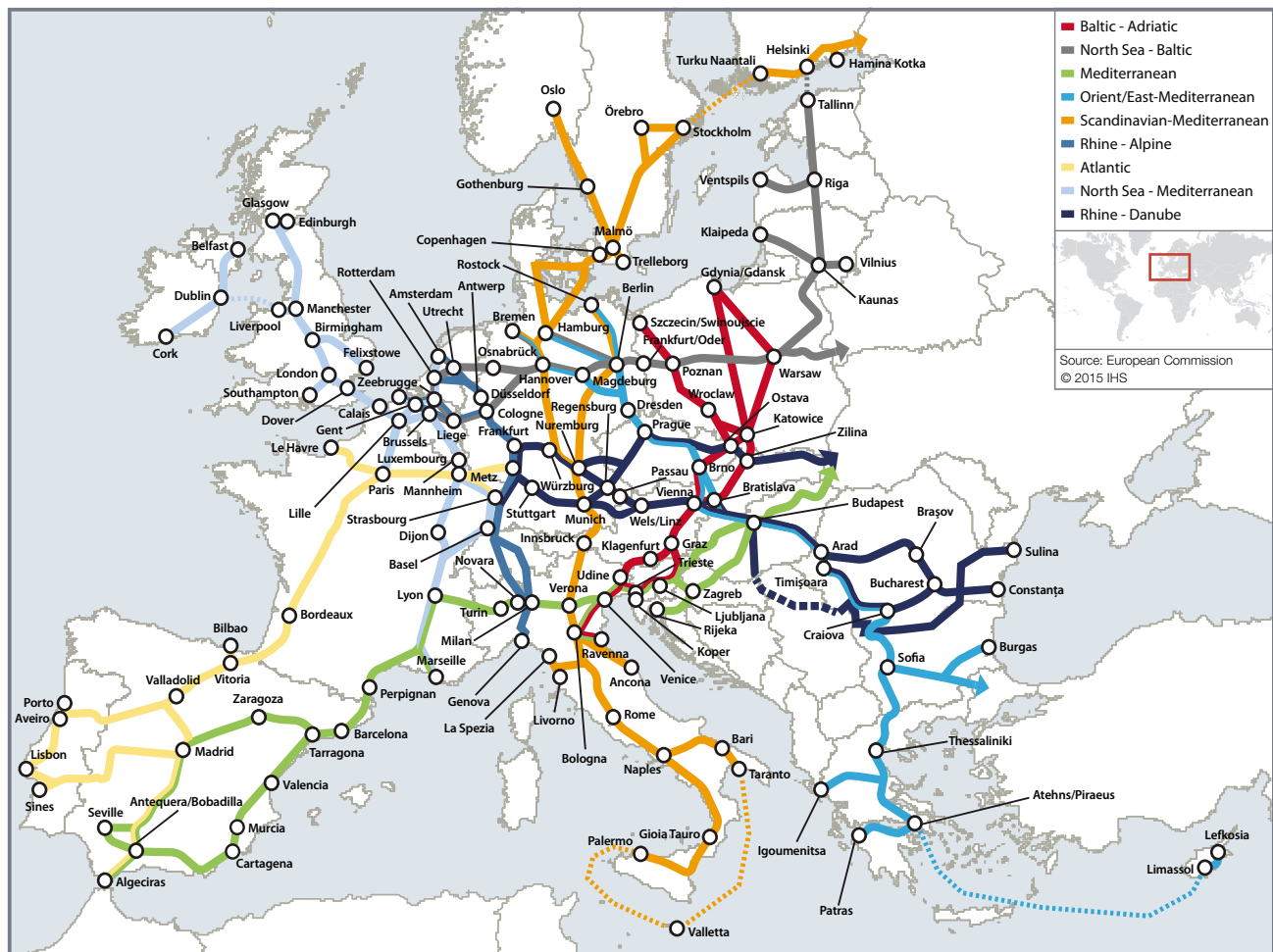
The school and the centre of arbitration are part of a national strategy aimed at solving labour relations conflicts in a peaceful environment. "The idea is creating a positive atmosphere in the shipping community to avoid any future strike or slowdown that may affect the reliability and efficiency of maritime and logistics services provided in Panama," explained Allard.

Urriola said, "With all those elements in place, MIT is very confident that Panama is in line to become the logistics and trade centre of the Americas." **. PH**



MIT

MIT has significantly increased its capacity



Lucky seven target TEN-T funding

Seven urgent port upgrades have been shortlisted to get a slice of EUR12.9Bn EU funding through the latest round of TEN-T programme.

Stephen Cousins looks at three of them

The development needs of the nine core Trans-European Transport Network (TEN-T) corridors were set out in a series of reports published by the European Commission in January this year, covering infrastructure projects worth roughly EUR700Bn (\$746.69Bn) of financial investment up to 2030.

Researchers examined thousands of kilometres of rail, road, inland waterway connections, ports, airports, and other transport terminals to prepare the studies,

which aimed to identify projects that are most suitable for public funding to remove bottlenecks and improve the movement of goods and passengers across Europe.

A final decision on a future project pipeline, based on these reports, and the allocation of EU funds worth a total of EUR315Bn up to 2020 is not expected until later this year. However, a separate report published in December, prepared by a team led by former commission vice-president Henning Cw Christophersen, identified a number of 'concrete' TEN-T projects considered suitable for contributing to the new investment plan and ready for implementation by 2017. These include seven port capacity upgrade projects worth a total of EUR12.9Bn (that compares to EUR63Bn for motorways and EUR29.89Bn for rail connections).

The seven projects cover a EUR844M expansion of the Port of Amsterdam's IJmuiden Sea Lock; a EUR800M project to improve maritime access and expand ferry and shortsea shipping facilities at the Port of Calais, France; a EUR200M project to upgrade port infrastructure and motorway and rail access to the Port of Cork, Ireland; a EUR200M project to modernise the Port of Koper, Slovenia; ambitious projects in Barcelona and Venice; and the construction of a high-speed/capacity railway linking the Port of Milan to Genoa.



Port of Amsterdam

Project: Port of Amsterdam Ijmuiden Sea Lock expansion

TEN-T Corridors: North Sea-Mediterranean, Rhine-Alpine, North Sea-Baltic

Amsterdam's Ijmuiden Sea Lock is located at the mouth of the North Sea Canal to Amsterdam and is North Holland's main gateway to the North Sea. The existing lock was the largest in the world when it was built in 1929, but with a capacity of roughly 95M tonnes it is now too small to handle new-generation cargo and cruise vessels and is only projected to cope with existing traffic volumes for a few more years.

Construction of a new 500m long, 65m wide, and 17m deep sea lock, while the existing lock remains operational, is intended to boost cargo throughput through the locks to 125M tonnes. The EUR844M project will be mainly financed by the Dutch Ministry of Transport, the Municipality of Amsterdam, and the North Holland Regional Authority. The port is seeking

around EUR100M funding from the Connecting Europe Facility (CEF), the European body set up to fund TEN-T projects from 2014–20.

Construction of the lock will commence at the start of 2016 and the facility is due to be operational by 2019.

Amsterdam's strategic location in Europe makes it particularly viable for TEN-T funding, said Ab Cherribi, Port of Amsterdam's public affairs manager. "Amsterdam is part of three of the nine core TEN-T corridors and the port and the sea lock are a major gateway to Europe," Cherribi said.

"In addition, the expansion is expected to generate direct and indirect employment for roughly 66,000 people in the port region and generate additional income worth about EUR6Bn," he added.



Port of Cork

Project: Port of Cork Ringaskiddy Port redevelopment

TEN-T Corridor: North Sea-Mediterranean

Located in the Port of Cork's lower harbour, this EUR100M expansion project is now going through planning and, if approved, will be carried out in two phases and is due for completion by 2020.

Key aspects include:

Ringaskiddy East: construction of a new 314m multipurpose berth capable of accommodating container, freight, and general cargo vessel; a new 200m container berth; dredging to a depth of 13m; land resurfacing to create new operational areas; and installation of new terminal cranes and transport equipment.

Ringaskiddy West: a 182m extension to the existing deepwater berth and dredging works within the port basin to varying levels to enable navigational

access to the new facilities.

The projects also require improvements to the external road entrance into Ringaskiddy East and West and to the internal link road between the two, construction of a new public pier, slipway and boarding platform at Paddy's Point, and related planting and landscaping to provide public areas.

The Port of Cork is seeking 20% of project funding via CEF grant. Denis Healy, manager of engineering services and deputy CEO of Port of Cork, told *P&H*: "The grant aid will allow the project to advance as expeditiously as possible without putting undue strain on port finances. The project also meets the key objectives of the North/South Ministerial Council: to remove infrastructure bottlenecks, improve the efficient use of port infrastructure, strengthen the capacity of ports supporting motorways of the sea, and upgrade the quality of port infrastructure."



Port of Calais

Project: Calais Port 2015

TEN-T Corridor: North Sea-Mediterranean

The EUR650M project, due for completion by 2020, was devised by port owner Nord Pas de Calais Regional Council to future-proof ferry operations for the next 60–70 years and provide new quays designed to integrate with road and rail and enhance shortsea shipping.


The design-and-build contract will commence in July and involves construction of a new 3km-long breakwater and creation of 45 ha of new land built using dredged material to create a new turning basin behind the breakwater.

The first phase of work will see three new ferry berths

built, each capable of handling next-generation ferries of up to 240m long and with 36m beam width.

Laurent Devulder, technical director of Calais Port 2015, told *P&H*: "The area east of the port is a protected natural habitat, the area south is an industrial area, and Calais town is to the west/south west, so our only option was to build on the sea. We hope this expansion will encourage new ferry activity and support existing operators to build larger ferries to increase their productivity."

If the TEN-T grant application is successful, Port Calais 2015 will be one-third financed by CEF. Devulder added, "The project will enhance shortsea shipping and the sustainability of future trade; it will add benefits for port users, reducing ferry operators' operational costs and preventing congestion and waiting times." **PH**



Light at the end of the oil barrel

Falling oil prices are affecting east and west African ports in different ways. **Stephen Spark** reviews the continent's port prospects

APM Terminals

Sub-Saharan Africa seemed to escape the worst effects of the 2008 global financial crisis. Buoyed by huge mining projects, a booming offshore sector, growing demand for consumer goods and gradual removal of trade barriers, the region had every reason to be optimistic.

That optimism was expressed with ambitious port expansion schemes and associated road and rail links striking boldly into the interior of a continent long plagued by poor inland connectivity. Africa appeared to be a bright spot in an otherwise gloomy outlook for trade and shipping last year.

Then the oil price started falling. As the barrel plummeted from USD100/bbl to USD50/bbl, oil and gas explorers had to recalculate the viability of their African projects. Below USD75/bbl, promoters could postpone financially risky projects, especially deepwater prospects.

For countries dependent on sales of oil and gas, the outlook is bleak as they contemplate falling revenues and crumbling currencies. With less government money available, spending on ambitious infrastructure schemes may dry up. In many cases, port construction and upgrades only make financial sense when combined with costly inland transport projects, which will be vulnerable to budget squeezes.

Nigeria is among the worst-affected of the oil producers. Chronic port congestion in Lagos means that doing nothing is not an option, so it is going ahead

with four new deepsea ports: Badagry, Ibom, Lekki, and Olokola. In January, Ibom's procurement process began, after delays and changes of location. The project's aim of relieving pressure on Lagos and avoiding the need for the maintenance dredging that plagues nearby Calabar remains the same. The transport ministry claims to have 20 local and foreign investors interested in the port, which is on a 14,900 ha site and will have a depth of 15-18 m.

At Lekki, the opening date for the USD1.8 billion port and free zone has been pushed back to 2018, but its developer, Tolaram Group, has secured funding to permit dredging and construction of breakwaters and quays. Once complete, it will have a 2.5 million teu capacity, 16.7 million tonnes of liquid cargo, and 4.7 million tonnes of dry bulk. However, little has been done to address poor land transport infrastructure, particularly clogged roads and the absence of a rail connection.

There are no such worries at Ghana's Port of Tema, where construction of a six-lane motorway and a rail link to the Tema Free Zone will start later this year. APM Terminals has committed to funding a major part of the USD2.1 billion expansion, which will nearly quadruple capacity to 3.5 million teu. The first phase of the container terminal should be ready by 2018, but the whole project is expected to take six years, adding 23 berths, all at a minimum depth of 16 m.

At the beginning of the year, Jan De Nul's cutter



A digitally generated image of the new deepwater port at Badagry, Nigeria

suction dredger *Niccolò Machiavelli* was busy removing one million m³ of material in Takoradi in the first phase of a major scheme to increase capacity at Ghana's second port. Quay wall construction was due to begin by 2Q15 and completion of the USD344 million project is set for early 2016.

Part of the Takoradi harbour is being redeveloped as an offshore services hub, and oil will remain vital to many African economies for decades to come. Africa's largest oil storage facility - 1.3 million tonnes - is also being built at Punta Europa, on Equatorial Guinea's Bioko Island. Grindrod is also considering adding a 230,000m³ petrochemical storage depot at Ngqura, South Africa, which could be ready by 2018. The same year should see the opening of Saldanha Bay's crude oil terminal. State-owned Transnet Ports Authority is billing it as a 'one-stop shop' for the offshore industry. With an eye on the 120 rigs that pass the Cape each year, the USD833 million facility will have a 380m repair quay able to service two rigs at once and a 500m support vessel servicing quay.

Compared with those in the Gulf of Guinea, east Africa's huge reserves of oil and gas are at an earlier stage in the development cycle, which may work to its advantage as the countries here are still mostly importers of oil rather than exporters. Two major players in the region, Tullow Oil and Total, have both pledged to continue investing in their onshore and offshore blocks. Lower oil prices should help east African countries, by reducing the cost of commodities, fuel, shipping, and the construction of several huge port and rail schemes.

Right across sub-Saharan Africa, China is the dominant force, providing loans, knowhow, and construction muscle. China Communications Construction Company (CCCC) is building the USD13.8 billion standard gauge railway from Port of Mombasa to Nairobi, Uganda, and

Rwanda. The line is expected to move a substantial proportion of inbound freight arriving at Mombasa's second container terminal, where China Road & Bridge Corporation is on course to complete the first two berths, costing USD283 million and funded by a Japanese government loan, by March 2016.

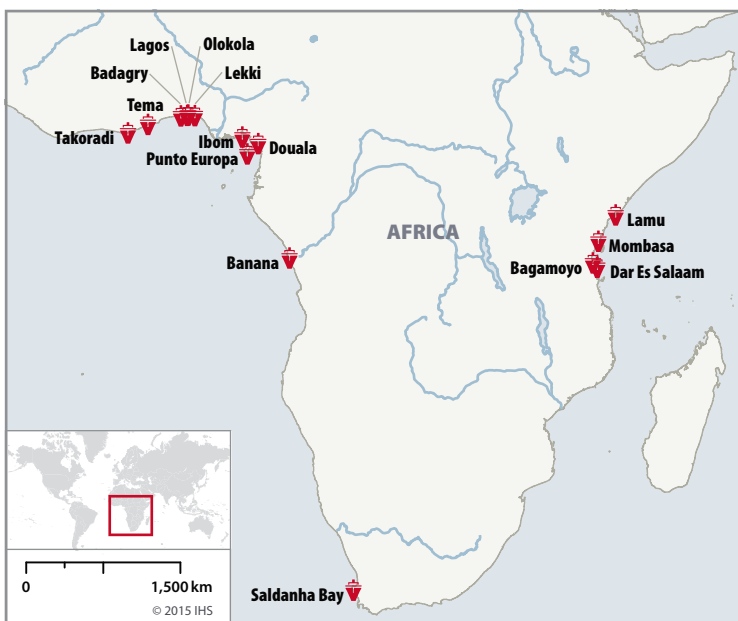
CCCC should by now have started work on the first three of an eventual 32 berths at Lamu, Kenya. The USD3.28 billion deepwater port is intended to ease pressure on the congested Mombasa and to open up a vast hinterland via the Lamu Port-South Sudan-Ethiopia Transport (Lapsset) Corridor. Its railways, roads, and pipelines will penetrate deep into South Sudan, Ethiopia, and Uganda. Together, the port, corridor, power station, oil refinery, airports, and economic zone will require about USD24 billion of investment. Lapsset planners suggest that once it is connected to new and existing railways, trains will be able to run from Lamu, northeast to the Red Sea, and northwest to Douala on Cameroon's Atlantic seaboard.

The Chinese are also entrenched at Bagamoyo, Tanzania, where China Merchants Holdings International is due to start work on the USD10 billion port and 9,000ha special economic zone in July. The aim is not only to decongest the Dar es Salaam port but also to open up the mineral wealth of Tanzania's landlocked neighbours. The USD500 million first phase, due to be completed in 2017, is just a fraction of a scheme that envisages total investment of USD75 billion for the Mwambani Port and Railway Corridor (Mwaporc). Almost USD10 billion is budgeted for the 20 million teu-capacity port alone. Mwaporc is a trans-continental rail link from the Indian Ocean to the Atlantic port of Banana in the Democratic Republic of Congo, putting it in direct competition with Lamu and Lapsset. Initially, however, Bagamoyo will be served by a modest 65km branch from the existing Tanzania-Zambia Railway.

These transcontinental connections are integral to China's Maritime Silk Road (MSR) project, which aims to create a trade network stretching from the South China Sea to the Mediterranean. Although Chinese oil companies do have some involvement in the region, the African component of MSR is more about bringing minerals to ports and taking imported goods to consumers in the landlocked regions, hence the need for heavy-haul railways and high-capacity container ports.

China-Africa trade reached USD220 billion last year and Xinhua press agency noted in February, "China has been Africa's largest trade partner for the past five years in a row." With such close economic ties, China's investment in African maritime transport infrastructure is unlikely to be significantly derailed by fluctuating commodity prices. With that level of support, sub-Saharan African ports should be well-placed to meet the challenges of the next decade. **PH**

MORE INFO: trafton.editorial@gmail.com





Dietmar Hasenpuch

European ports take on the giants

Europe's leading container ports are adequately equipped to deal with the mega-ships box liners are bringing into service, but they face challenges as these vessels increase in number, reports **Andrew Spurrier**

Leading northwest European ports proudly proclaimed in early March that they had received their first call from the latest holder of the title of the world's largest container vessel, *MSC Oscar*, with a length of 396 m, a beam of 59 m and an official carrying capacity of 19,224 teu.

Two days earlier, however, Mitsui OSK Lines revealed that it had placed an order for six 20,150 teu vessels to come into service in 2017, while, in January, Japan's Imabari Shipbuilding announced it had received orders for 11 20,000 teu vessels before Evergreen "corrected" the figure to 18,000 teu.

But, whether the vessels due into service over the next few years are in the 18,000 or 20,000 teu category, they are not provoking concern among Europe's major container port and terminal operators.

"The good thing is that, in Europe, all the major

ports are already in a position to handle these ships," Hamburg-based Alphaliner liner shipping and ports analyst Jan Tiedemann told *Ports & Harbors*. He was quick to add, however, that this did not mean their arrival in European ports would be problem-free.

On the contrary, he said, if it was true that the ports had the physical capacity to handle the vessels without difficulty, it was not necessarily true that they would be able to offer them timely, top-quality service if several arrived at the same time.

He argued that numerous factors, including tidal restrictions, bad weather and simple late vessel arrival, could cause delays and congestion at ports hosting mega-ship calls.

"I don't think there are any major problems that cannot be solved," he said, "but the more these giant ships hit the ports, the more all the small restrictions these vessels have might add up and cause problems."

Smaller ports might find themselves faced with handling all the containers they were expecting in a week in a single afternoon. Others could find themselves having to leave ships at anchor because of a shortage of suitable berths.

In addition, the 'bunching' of mega-ship arrivals could be expected to create problems for transport links from the ports. "It puts huge stress on rail connections when all these containers arrive at the same time," said Tiedemann.

Copenhagen-based SealIntel takes the same view. The use of larger vessels means that cargo volume will tend to be concentrated in "fewer but more intense bursts", it said in a recent study, and this means ports either had to move containers in and out more quickly or find more yard space to store them.

In the event, they would probably combine the two solutions, given the limited capacity of overland transport links for dealing with high peaks in volumes.

"This is the reason why larger vessels mean the ports need more land-side space to accommodate them," SealIntel said, noting, at the same time that the urban location of many ports in western Europe and North America meant their room for expansion could be limited.

A survey carried out by the company found that most ports were taking steps to deal with this problem but, said SealIntel, "the question now is whether they will be able to deal with it fast enough to keep up with the carriers' orders for even larger vessels such as MOL's latest order for six 20,150 teu vessels."

SealIntel CEO Alan Murphy recalled that several European ports, including Rotterdam, Antwerp and Hamburg, had experienced serious congestion at their container terminals last summer.

Behind that congestion, he said, had been a "slight inventory correction" in the Far East-Europe trade but this had resulted in new-generation giant vessels arriving in port full for the first time – something for which he said the ports had clearly not been prepared.

He believes other congestion episodes can be expected as cargo volumes, currently back to pre-crisis levels, continue to increase and more new mega ships come into service. "I am certain that congestion will be an increasing problem," he told *P&H*. "There are all of the elements to create congestion and none of them seems to be getting better. All of them seem to be becoming more pressured."

Tiedemann believes ports and terminal operators will find solutions but that it will take time and some congestion will be experienced during the five or six years he thinks this process will take. "It's possible

that ports will slowly adapt their infrastructure and remove bottlenecks but that's not going to happen overnight," he said.

On the plus side, however, he believes carriers will prove to be more tolerant of logjams and delays than they have been in the past.

The extensive use of slow steaming by carriers, which has extended the duration of Asia-Europe round trips from 8 weeks prior to the economic crisis to anything from 9 to 12 weeks now, means carriers have much more time to catch up on their schedules than previously.

"There is much more slack in the round-trip scheduling at the moment," he said, "so it's not so much of a catastrophe if a ship has to wait one or two days."

This relatively relaxed attitude seems to be shared by forwarders and cargo bookers, he said, with only the occasional, and then not overly aggressive, public protest by shippers' organisations.

Ports can draw comfort, too, from the fact that there is a growing consensus around the idea that growth in ship size may have peaked for the moment, as has been suggested by recent statements from the two container line leaders, Maersk and MSC.

Maersk Line indicated that it would be ordering 11 new Triple-E ships, possibly optimised to 20,000 teu, later this year, and MSC said it believed that 20,000 teu was the present limit on box ship size.

Analysts indicate that, in reality, there is no real difference between the current generation of 18,000 teu and the 20,000+ teu vessels that some carriers have said they will bring into service.

All come down to the same basic 400m by 60m dimensions, they say, and the differences in their stated capacities are more a reflection of the communication strategies of individual carriers than of any real difference in their payloads. In any case, they argue, nominal capacity is a theoretical notion and has little to do with vessels' real loading capacity.

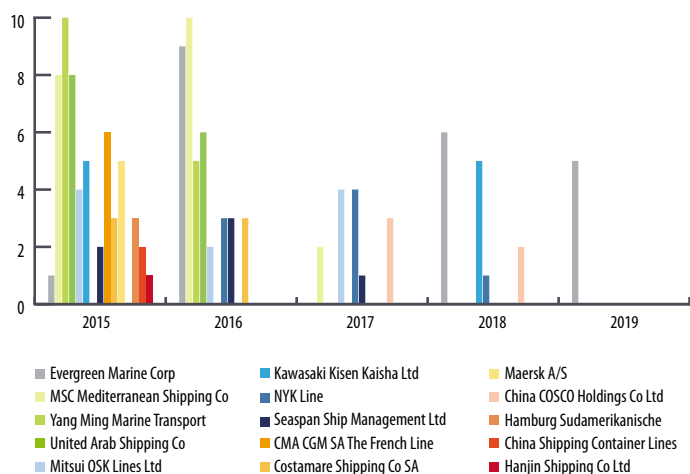
Tiedemann said a further increase in vessel size was unlikely to bring the same high percentage gains in economy of scale as carriers had been able to achieve hitherto. "You have to take a big step to the real next generation of vessels and I think that, at least for the next 10 years, doing that would cause more problems, more collateral damage, and [bring] more costs for the carriers than it would generate in savings."

SealIntel's Alan Murphy agreed. He said that while it was theoretically possible to envisage the construction of vessels of 25,000 teu or even 30,000 teu, any increase in current ultra-large container carrier dimensions would require major new investment in terminal infrastructure and equipment at the vast majority of container ports worldwide.

"Fundamentally, the [port] industry does not look ready to handle bigger vessels than we are getting right now," he said. "I would even say that those we have now seem to be a challenge. This is not when I would start to look at increasing the size." **PH**

The 19000 teu CSCL Globe at Hamburg in January

Expected large box ship newbuildings



Source: IHS Maritime & Trade

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Georgia Ports Authority

Going deep in the southeast

With the last of their construction approvals either in hand or in sight, the ports of Savannah and Charleston are anxious to get started on harbor expansion projects to serve a new class of ship, reports **John Gallagher**

With the US economy on a roll and the opening of a third set of Panama Canal locks just a year away, the ports of Savannah, Georgia and Charleston in South Carolina are making final preparations to deepen their channels to take advantage of bigger, heavier ships that will be moving growing volumes of containers.

Savannah is closer to getting shovels in the water. On 5 March the US Army Corps of Engineers awarded a USD134.5 million contract to dredging contractor Great Lakes Dredge & Dock to dredge 30km of the port's outer harbor, which comprises nearly half of the total 64 km project.

The USD700 million project, which will deepen the Savannah River shipping channel an additional 1.5m to 14.2m, is expected to begin by mid-2015 and be completed by the middle of 2018.

Charleston, which can handle ships with draughts of up to 14.6m on high tide, is awaiting a US Army Corps Chief's Report, which is due by September, followed by a pre-construction and design phase,

before a dredging contract can be put out for bids.

The USD510 million project will deepen Charleston Harbor to 15.8m. The added draught will remove tidal restrictions and, as with Savannah, will open the port to larger post-Panamax container ships 24 hours a day.

While the two ports compete fiercely for volume, neither port director believes the timing of their respective projects will give the other a meaningful advantage. "Everyone who lives and breathes this stuff knows that as busy as the [US] southeast region has become, we need more efficient, expanded capacity and deeper ports in both Charleston and Savannah," Georgia Ports Authority (GPA) executive director Curtis Foltz told *P&H*.

"People want to make it all about the water, but it's clearly not," Foltz added. "You've got land-side capacity issues to deal with, connectivity with road and rail, and proximity to the market itself that comes into play."

At Charleston, the type of container cargo in which it specialises allows for steady growth without gaining or losing significant share to its rival, 115 km to the south.

"If you look at Savannah and Norfolk, they [work with] Walmart and Home Depot – some of the big guys in retailing," Jim Newsome, president and CEO of the South Carolina Ports Authority (SCPA), told *P&H*. "We really don't – we're more about distribution related to manufacturing."

Newsome pointed out that while a manufacturing base has made the US southeast export-dominant, Charleston is "pretty balanced. While in the short term most people would tell you exports are down, I think exports, in the long term will be the biggest growth area for us."

Making peace with environmental groups on the deepening is a major hurdle that has been cleared at both ports.

Analysis showed that Savannah's deepening would lead to saltwater intrusion into freshwater areas upriver, which can harm fish and shellfish. To mitigate



Savannah's Garden City Terminal is one of the largest container operations in the US

those effects, Savannah will spend USD72 million on a system that injects dissolved oxygen into the river to counterbalance the effects of saltwater intrusion.

In January, SCPA announced it had partnered with three major green groups to protect the Cooper River Corridor, while ensuring the project does not get delayed by environmental concerns (see right).

Making US ports and harbors deeper to attract bigger vessels, namely, container ships of 8,000 teu and above, is only one part of the equation when it comes to expansion projects, as the money spent to do that will be wasted if port productivity is unable to keep up.

That point was driven home by a near-meltdown at US west coast ports that occurred earlier this year because of equipment shortages and container terminal operations that struggled to keep up with larger ships that called at the ports. The condition was exacerbated by a bitter labour dispute between dockworkers and terminal management.

"We have a very productive terminal today. We have good capacity and we don't have congestion," said Newsome. "We've done certain things we think are strategically important, such as extending our gate hours. More than anything else, it gives truckers more and better access to our terminals so that they can make a better living."

Newsome said Charleston was handling about 1,000 gate moves on Saturdays, which is the goal. "And I think the trend over time for terminals will be to run longer gate hours, because if ship operations are going to be running 24/7, that's what we're going to need."

GPA has a 10-year, USD1.4 billion capital expenditure plan that attempts to take into account long-term productivity issues.

"You look at what's going on not just on the west coast, but at our competing ports up and down the east coast – yet Savannah is still growing faster than anyone while staying fluid," Foltz said.

He added, "There isn't any magic dust we're sprinkling around. We've taken a holistic approach to our port facilities that absolutely includes labour as part of those plans. Anyone that doesn't include them, I think they're making a mistake." **PH**

Making peace with the greens

The South Carolina Ports Authority has taken a proactive approach to dealing with environmental concerns about its port deepening project by joining forces with green groups instead of battling them.

The SCPA in January partnered with Lowcountry Open Land Trust, Coastal Conservation League, and the Southern Environmental Law Center (SELC) to form an entity that invests in protecting the Cooper River Corridor, while ensuring "timely progress" in the port's harbor deepening project.

The agreement includes a commitment by the port to fund USD5 million-worth of land purchases the groups want to make adjacent to the Cooper River, which feeds into Charleston Harbor and could be negatively affected by the project. The land purchase will act as a barrier to urban growth to help certain areas avoid being overrun by industry.

"Harbour deepening projects have impacts on the environment, including wetlands, estuaries, and other important habitats," said Chris DeScherer, a lawyer with SELC.

"We are pleased to collaborate with [South Carolina] Ports Authority and our partners to find meaningful conservation measures that meet industry shipping needs, while also conserving critically important wetlands and uplands in the Cooper River Corridor," DeScherer added.

"We thought this was a constructive way of saying, 'let's agree to this and take away all questions as to whether the required mitigation has been done for our deepening project, and in turn allow [the green groups] to support the project,' while agreeing not to hang up the construction with legal action," SCPA president and CEO Jim Newsome told *P&H*.

Addressing environmental concerns has become just as important as obtaining financing to advancing port construction and expansion projects around the United States.

The SCPA already has USD300 million set aside for its USD510 million project, making its partnership with the greens that much more important.

"This was significant because it removed any question as to contention on the subject of project mitigation," Newsome said.

He added, "And any time you can spend less than 1% of the project's cost on a proactive settlement like this, I think it's a good business decision." **PH**





Expertise ensures dredging success

While most ports and harbours have significant marine engineering capabilities, dredging is a specialised field, which needs a diverse skill set and support from dedicated experts

Associated British Ports' Port of Southampton on the south coast of England took that view when it decided on a capital dredging project to deepen and widen its access channel to enhance its ability to accommodate the world's largest container ships and meet customer requirements.

Since the advent of containerisation, Southampton has been at the forefront of the UK industry and is home to the country's second-largest box terminal. It is also the United Kingdom's premier cruise port, dealing with around 1.7M passengers annually and hosting some of the world's largest cruise vessels.

Port owner ABP took the decision to dredge in 2013, naming the project the Southampton Approach Channel Deepening (SACD). It called for the dredging of over 5M m³ of material over a 54-km stretch of existing navigational channel between the port and the outer

approaches to the east of the Isle of Wight (IoW) to enhance navigational safety and tidal access window for large container vessels.

The company recognised that specialist skills and knowledge would be required, given the scope and complexity of SACD, so it employed Anthony D Bates Partnership (ADBP) as the engineer's representative to assist in all aspects of the project. The scope of work included assistance with tender analysis and contract negotiations, plus full-time onsite supervision of SACD for its 10-month duration.

The area peripheral to SACD is a heavily protected part of the United Kingdom, covered by both national and European designations. As a result it took more than five years to obtain the necessary licence and permits.

Strict environmental conditions were stipulated, requiring the formulation of an adaptive management



**Boskalis trailer
Prins der Nederland
dredging in
Southampton**

strategy for water quality, along with installation of a comprehensive telemetric water quality monitoring system. Archaeological assessments, sampling, and an artefacts discovery protocol were also established. Noise restrictions were agreed with local stakeholders and monitoring stations were set up in sensitive areas.

All these factors were built into agreed work method statements, but there was much more to take into consideration. As the dredging would be adjacent to Southampton and Portsmouth ports, the presence of unexploded ordnance (UXO) had to be taken seriously. Dredging contractor Boskalis Westminster was made aware of that and it had, after a risk assessment, made provision for draghead modifications on trailing suction hopper dredgers (TSHDs) and employment of onboard UXO experts where appropriate.

During the course of the project, seven different TSHDs, four plough vessels, and a backhoe that worked with four hopper barges were onsite.

The dredged material was diverse and included rocks, gravel, compact sand, silt, stiff clays, and peat. The majority of it was placed at a licensed offshore disposal site, but some 20% was segregated to a licensed aggregate area where it could be sourced and reused in the future. Additionally, about 100,000m³ of material was put to immediate beneficial use in the construction of an offshore breakwater at Cowes on the IoW.

A primary site characteristic of Cowes was the large scale presence of recreational craft throughout the work area – several thousand during the racing season, requiring thorough communications with the public. Dredging crew had to be vigilant, particularly during daylight operations.

All areas of the port continued to be fully operational during SADC, including regular transits of tankers up to the size of very large crude carriers; container ships up to 400m length overall; cruise liners; IoW ferries; bulk carriers; car transporters; and ro-ro traffic.

The engineer's representative managed day-to-day onsite operations, keeping the port up-to-date on SADC's progress, and also provided additional expertise for associated project aspects, including

channel design, environmental monitoring, health and safety compliance, work method statements, licensing and regulatory matters, archaeological investigations, contract variations, and hydrographic surveys.

Southampton's owner also assisted in the interim and final measurement and contract valuation, all of which ensured the successful conclusion of the project for all parties.

An ADBP company spokesperson pointed out to P&H that as dredging is such a specialised field that the number of contractors is not extensive. "By working regularly with these contractors, [we have] built up good working relationships that assist in the smooth running of dredging projects," he said. "As [we] regularly deal with many international dredging contractors – large and small – [we] have in-house knowledge of market prices and production rates for many items of dredging plant. That's particularly useful with regard to feasibility studies carried out by the partnership."

"In over 38 years since our foundation, no formal dispute has ever arisen on a contract as operations are always closely managed and any contractual discussions resolved amicably with the contractor," he stated. "This is not always the case, however, and the knowledge gained by acting as an expert witness for external projects enables personnel to assist in ensuring all parties make decisions on a fully-informed basis.

"[We] regularly carry out onsite dispute assessments to ensure a fair and impartial resolution can be found expeditiously while the project is ongoing," he continued. "In most cases, this helps ensure that the project formalities are completed as the contractor mobilises with no protracted discussions or formal proceedings required.

"Our wide experience of dredging and related disciplines, combined with detailed knowledge of many ports and contractors, means that dredging projects can commence on the right footing with a fair, informative, but robust contract document for all to work to," he concluded. **PH**

i MORE INFO: www.anthonybates.co.uk



**Left: Boskalis
backhoe at work in
upper Southampton
Right: Win-win –
Boskalis trailer
Sospan-Dau
pumping material
from Southampton
onto the Cowes
breakwater**

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Legacy dredging

Old ports and harbors often come with an industrial residue of contaminants that find their way into sediment, especially in port basins. **Tony Slinn** looks at two projects in Scandinavia – and a completely different approach in France

Industrialisation at the southeastern Swedish port of Valdemarsvik in Östergötland began during the 1630s and as it evolved turned the port into an important copper and leather trading centre.

From 1873 to 1960 it was home to the Lundberg Lader tannery and, as a result of the discharge of untreated wastewater from tannery operations, Valdemarsvik's sediments were contaminated with chromium – as well as mercury, although to a lesser extent – which needed to be removed.

The SEK240 million (USD30 million) contract went to Belgian dredging major DEME's environmental subsidiary DEC and is due for completion by the end of this year.

The scope of work includes dredging 200,000 m³ of contaminated sediment from a very large area – about 350,000 m² – in and around the port, with subsequent dewatering, stabilisation and finally disposal of the material in an authorised landfill. It's a complex project and its design alone took a year to create.

"Valdemarsvik not only has a lot of loose sediments on the bottom, but also in connecting clay slope and beach areas," a DEC representative explained. "Slopes of friction materials and rock are found in the project area, but very loose sediments of mud and muddy clay dominate.

"Dredging the sediments in these areas affects stability conditions along parts of the shore," he continued. "The topographical and geotechnical

conditions in the bay, with steep banks and loose soil layers of clay, mean that even relatively small load changes can result in landslides. As a result, nearshore dredging in some areas had to be combined with ground reinforcement measures.

"These measures covered most of the shoreline and consisted not only of progressive backfilling after dredging, but also the installation of lime-cement columns," he noted. "There were three especially important areas. Grännäs coastline, where first had to construct an access road to the fill area. Subsequently, soil reinforcement included the installation of 313,000 m of lime-cement columns. Moving to the waterfront at Centralplan, boulders had to be removed before we put in 46,000 m of lime-cement columns. In addition, we constructed a new bank designed to protect the area against erosion. Finally, the Sahlin area was reinforced with 29,000 m of lime-cement columns. We also needed to demolish certain buildings and create cycle and walking tracks as part of the contract".

Dredging was carried out by backhoe dredgers *Ijburg*, fitted with a visor bucket, and *Valvik*, with an environmental grab. Five transport barges of up to 650 m³, a tug, a multicat and a survey vessel worked with the dredgers. Strict environmental conditions were observed.

"Before activities could start, obstacles from the seabed had to be cleared by divers," the company official continued, "including timbers, moorings, stones, wrecks, etc. In addition, and during the dredging campaign, existing underwater sewage and freshwater pipelines were lifted and replaced with new pipes. About 200,000 m³ of contaminated sediment needed dredging in layers ranging in thickness to about 2 m and in water depths up to 13 m. Of it, about 17,000 m³ was excavated nearshore and along the quays, with approximately 183,000 m³ of Cr-contaminated sediment dredged from adjacent areas.

"Those sediments were taken to a floating facility, where the barges were mechanically unloaded and the sediment transported hydraulically to the stabilisation

Overview of the Valdemarsvik site





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Divers cleared obstructions at Valdemarsvik

plant. It's stabilised with cement – 5% to 10% to give a shear strength of 25 kilopascal (kPa) after 28 days – and dewatered. Water originating from this operation was treated before being discharged.

"After dewatering," he concluded, "the dredged material is placed in an authorised area covering around 75,000 m². When that's completed, it will be capped under a procedure that includes installation of a sealing layer of clay geomembrane – a bentonite mat – and a synthetic geomembrane. And in the future, the land will be used for recreational purposes."

Trondheim harbour in Norway was selected for remediation some years ago and the port authority was funded by the Norwegian Climate and Pollution Agency (KLIF) to prepare a comprehensive action plan to clean up contaminated sediment.

The plan's major focus was to reduce inputs of pollutants from surrounding land into harbor sediments as well as to identify and reduce contaminated sediments in the harbor area and stop their further spread. The port authority also wished to restore depths in the port basin.

The risk assessment was carried out in 11 different related areas in water depths to 20 m. KLIF's three-step risk calculation tool was used in the study and a site-specific model for sediment transport was created.

Again, it was to prove a complex project because of Trondheim's special aspects: steep topography, deep water, restricted availability of sites to place sediments on the seabed, and like Valdemarsvik, restrictions due to geotechnical stability in some areas.

The assessment concluded that sediment concentrations were a risk to health, ecology and spreading of contaminants in most areas, with five identified where remediation was essential.

During 2014, general contract specifications were prepared that envisaged dredging of about

65,000 m³ of contaminated sediment, with a thickness from 0.1–2 m, followed by capping. The material would be contained in a combined underwater and shoreline landfill in Nyhavna, with the latter holding around 40,000 m³, built with stone pitching on the outside and terminating with a 2 m-thick layer of clean stone.

Approximately 400,000 m² of seabed would be capped, of it: about 100,000 m² with a thin cover (10 cm) at 10–30 m depth; and about 300,000 m² in bays and the channel, with a cover thickness of 0.4–0.65 m at 2–8 m depth.

In February this year, Belgian contractor Jan De Nul announced that its environmental subsidiary Envisan had won the contract.

As you read this, Envisan should have deployed its dredging spread and be at work. Completion is scheduled for April 2016.

Envisan is also busy in other countries, especially France, at La Seyne-sur-Mer, where it is building its first sediment treatment centre in the country that is specifically designed for the treatment and recycling of contaminated sediment.

Recycling such material is a different approach to that taken on the Scandinavian projects and Envisan is using expertise gathered in Belgium, where legislation allows for reuse of sediment in the construction industry. Along with DEC, Envisan is responsible for the Port of Antwerp's advanced 30 ha AMORAS plant, which deals with 600,000 m³/year of material dredged from the port.

The French centre is being built on a 3.4 ha site and will feature several treatment techniques for polluted sediment and soil. It is an extension of the SEDIMED research programme, which aims to lift administrative and regulatory barriers to allow recycled sediment to be used in the construction industry – for roads, concrete structures, maritime works and landscaping.

"The objective is to make the centre the preferred partner for companies involved in maritime works, public and construction works and remediation," an Envisan official said.

The company has a permit to run the centre for 20 years and it will be able to process up to 160,000 m³ of material annually.

Polluted material can be shipped or trucked in and will be deposited in watertight storage areas. After that, it will be sorted and filtered before being treated via techniques including mechanical dewatering by filter presses; dewatering by active lagooning; pre-treatment by granulometric separation (cycloning, desanding, filtering); biological treatment; washing; and physico-chemical treatment.

"The sediment and soil centre also features a water treatment plant and has been designed to respect all applicable environmental protection standards," the official said. "It also conforms to strict regulations on traceability". PH

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Maintaining a conduit to Lamma

When some critically high spots were discovered within the channel leading to Lamma Power Station, Hong Kong, urgent action was needed.

Dexter Yan explains what happened

When the navigation channel leading to Lamma Power Station, located at Po Lo Tsui on Lamma Island, Hong Kong, was found by a bathymetry survey in August 2014 to be failing to meet the minimum depth stipulated by the Hong Kong Marine Department, an emergency dredging operation was instigated.

"There [was] an urgent need to start carrying out emergency dredging works in January 2015... to maintain the safe operation of vessels," the power station's operator, Hongkong Electric Company, said.

The critical dredging works were expected to generate an estimated 150,000m³ of marine sediment.

According to the Marine Department, a flotilla of vessels, including two grab dredgers, four hopper barges, two tugs, and a survey boat, were deployed for the three-month project. The number of vessels engaged in the works changed from time to time to suit operational requirements.

The Lamma Power Station Navigation Channel was formed in 1981 to facilitate the delivery of coal to the facility by oceangoing vessels, according to a project profile released by Hongkong Electric Company.

As a mainly coal-fired power station – it relies on coal-fired units for base load operations – access for ocean-going vessels carrying fuel supplies is essential for ensuring the continuity of electricity output to Lamma and the Hong Kong Islands district.

In order to maintain safe clearance of these vessels through the channel, dredging of naturally accumulating sediment in the channel is required to maintain a minimum depth between the seabed and sea level. That depth is specified by the Hong Kong Marine Department.

Since its formation in 1981, the channel has been periodically dredged to maintain safe clearance for oceangoing vessels. Originally, it was dredged to -15.9mPD, although it has subsequently undergone a number of 'improvement' dredging works to various depths to cope with the operational requirements of vessels and the effects of natural siltation over time.

On the heels of the emergency project, a larger maintenance dredging operation is being planned for as early as 2017. This will help meet the requirements for continued safe passage. In the past, this has involved dredging of the channel to a level of between -16.0mPD and -16.5mPD. A consultant will be engaged to undertake an environmental study, which is targeted to be completed this year.

The 2017 maintenance project will carry out improvement dredging to deepen and maintain the seabed level in the channel beyond the minimum required depth of -15.5mCD (approximately -15.65mPD). The volume of dredged material is expected to be approximately 2 million m³.

Based on historical dredging records, it is expected that subsequent improvement dredging will be conducted once every five to six years as required, depending on how fast and how much silt has accumulated.

As the southernmost parts of the channel lie in naturally deeper seabed (a 2013 bathymetry survey revealed some areas to be as low as -20.7mCD, which is approximately -20.85mPD), these will not require further dredging. **PH**

Lamma Power Station: access threat averted

Hongkong Electric Company





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Petrobras

A new Petrobras refinery has further lifted the fortunes of the Brazilian industrial port of Suape, reports **RT Watson**

The opening of Abreu e Lima refinery is a boon for Suape

The principal gateway to Brazil's northeast region, the port complex of Suape, has fared well in spite of the country's economic downturn.

Suape has attracted a large amount of private investment and should be buoyed even further by the recent debut of Petrobras' Abreu e Lima refinery.

Nevertheless, the 13.5 million ha complex also faces challenges. In particular, it needs to dredge beyond 15.5m to handle larger vessels, but the port's long anticipated USD15.4 million dredging project has, at least temporarily, been put on hold.

As with many ports in Brazil, Suape is looking to the central government's national port modernisation and dredging programme for support. Under the national scheme, which was proposed by Brazilian president Dilma Rousseff and signed into law in June 2013, Suape is designated as one of the key ports for modernisation. Unfortunately, implementation has been sluggish.

Thiago Noroes, the secretary of economic development for the state of Pernambuco and president of the port complex of Suape, is keeping a positive attitude and points to Suape's ability to perform well amid Brazil's economic turmoil as evidence of the port's

prospects. "Despite the economic crisis, there has been a constant flow of new project cargo and the port has cemented itself as a major hub for liquid bulk," said Noroes, who noted that both the port's throughput and revenue increased in 2014.

There are at present 150 companies operating within the port complex and plans call for a further 45 to be added. These companies' specialisations range from liquid and gaseous bulk to logistics, marine and offshore, oil refining, petrochemicals, construction materials, food and drink, wind energy, automotive, and steel.

Suape has been specifically developed to position the state of Pernambuco as "a distribution centre of goods and services of the oil, gas, offshore and shipping industry", said Suape Global, which promotes the port.

The economic strength in the state of Pernambuco has been a key driver of the port's development. Pernambuco boasts a strategic location as a gateway to international markets, the highest rate of industrial production expansion in Brazil and better GDP performance than the country as a whole.

Private money can be credited for much of Suape's success. Noroes estimated that USD15.5 billion-worth of private investment has gone into the port to date. The hope is that this high level of private investment will attract more public funding, which would in turn guarantee that the growing facility has the infrastructure and surrounding road access to ensure success. The equivalent of USD894 million in public funds was contributed to the port in 2007–14.



Last year, Suape's cargo throughput was 15 million tonnes, up 17% on the 12.8 million tonnes in 2013. Liquid bulk made up 60% of the port's total cargo in January–October 2014 and was up 30% from the same period in 2013. As the nearby Abreu e Lima oil refinery increases production in the years to come, this volume should continue to climb. That refinery only began operations in November 2014.

Petrobras' 230,000 barrel/day Abreu e Lima refinery has been built to provide diesel for the domestic market and to reduce the need for imports. In addition, it has been designed to produce naphtha, petroleum coke, LPG, and bunker fuel. The refinery shipped its first cargo of naphtha in January 2015, loading aboard the product tanker *FSL Singapore* in the Port of Suape.

According to Noroes, last year's liquid bulk volumes were exceptional, in part thanks to the long-awaited initiation of production from Abreu e Lima.

This year started out very strong as well. Suape's container throughput in January 2015 was up 16% on January 2014, while liquid bulk volume jumped by 64%. Overall, Suape expects cargo volume to reach 20 million tonnes this year, which would represent a sharp 33% increase on 2014.

Noroes believes the port's success has been the result of foresight and planning. "Both the port administration and the state of Pernambuco did what was necessary to

keep Suape one step ahead when it came to questions of infrastructure and development," Noroes said.

The challenge in 2014 was to continue to upgrade infrastructure as demand continued to rise amid the county's uncertain macroeconomic situation. Last year was a big leap forward for Suape, as key components of its industrial complex became operational: an Aguilar y Salas manufacturing plant, a plastics factory, and the Concessionaria Rota do Atlantico, the facility responsible for all road and rail access.

Rail upgrades last year created pivotal connections between the port and industrial zone and the rest of Brazil. Meanwhile, Suape's bonded area was increased by 15%, from 526,200 to 607,200 m².

"The main advances we have made in port operations include the certification of operating drafts, eliminating the restrictions on night-time operation, ship-to-ship operations, 24-hour port construction, and reforming the ship control tower," added Noroes.

When approaching Suape's more than 3,000-m-long L-shaped jetty, arriving vessels first pass the port's four liquid bulk piers, one of which has just been upgraded. Beyond these operational berths is the bustling liquid bulk terminal. Deeper into the port complex there is a block of four terminals: a solid bulk minerals terminal, the TECON container terminal, a Transpetro Petrobras terminal, and the Suape terminal, or TEAPE.

Suape's two private berths are principally concentrated on container cargo, managed by the Tecon Suape company, which is part of the Philippines' ICTSI Group. Tecon Suape has annual capacity of 680,000 teu/year.

Behind the four major terminals are various facilities for logistics and storage. Further down the access channel are additional piers plus two large shipbuilding facilities, Vard Promar and Atlantico Sul.

The initial delivery from the new Fincantieri-owned Vard Promar yard, the first of eight LPG carriers ordered by Transpetro, is due for delivery in 2Q15. However, at Atlantico Sul, layoffs have recently ensued as a result of the bribery scandal involving Petrobras, which has orders at the shipyard.

As with many ports in Brazil, the corruption scandal at Petrobras – in which construction contractors are alleged to have paid bribes – could have fallout in Suape. Not only do Suape's shipyard tenants have heavy exposure to Petrobras, but the liquid bulk volume at the port will be partly dependant on Petrobras' new refinery.

Despite such short-term challenges, the long-term prospects for Suape remain attractive. Indeed, the plan for the future goes beyond the petroleum and industrial sectors. Some day logistics planners hope to bring Brazil's huge agribulk sector into the mix. They envisage road and rail connections that are improved to the extent that the bountiful soyabean crops of Mato Grosso state are shipped north and exported via Suape, taking the pressure off overburdened Santos. That, in turn, could ultimately bring the Port of Suape to the next level. **PH**

Port facilities in Suape, Brazil





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Garrett Britton/APMT

Modernising Moín

A billion-dollar project along Costa Rica's Caribbean coast promises to speed the future flow of exports, **Scott Berman** reports

A special ceremony was held on 8 March to celebrate the ground-breaking of APM Terminals' (APMT's) new development in Moín, Costa Rica. The country's president, Luis Guillermo Solís, was on hand for the special occasion, which marked an important step forward in what has already been a long and complicated process.

It was back in 2011 when APMT won a 33-year concession to build and operate a container terminal in Moín, Costa Rica. As is often the case when a deep-pocketed international player comes on the scene and promises a sweeping change, the local port and labour interests moved to protect the status quo.

Opposition to APMT's Moín project was intense. In addition to widely publicised protests, the concession triggered a legal challenge that went all the way to Costa Rica's Supreme Court. However, the country's highest court ultimately approved

the project in October 2014 and the final go-ahead came in December with the conclusion of a complex environmental approval process.

Paul Gallie, APMT's managing director of Central America, put the contentious legal and permit-approval challenges in perspective. He described both the final decisions as well as the long process of getting there to be positive signs. The experience revealed that the nation "has gotten some key things right", he said. Costa Ricans "balanced the environment and economic development. And it's not just a perception, it's a reality", Gallie added, highlighting the myriad conservation and mitigation stipulations that APMT has agreed to.

While the official ground-breaking ceremony was held in March 2015, actual construction began on 19 January. Gallie spoke to *P&H* just a day after construction had begun. At that time, rock stood stockpiled at quarries, subcontractors were on site, and dredgers were expected soon. Gallie estimated that when the project is at its peak, there will be at least 190 pieces of heavy equipment and 700 workers at the site.

It is an enormous project. When completed in the first quarter of 2018, the container terminal will feature a capacity of 1.3 million teu/year. The overall cost of the terminal is USD992 million. Of that total, USD460 million is allocated to the construction contract awarded to a consortium comprised of Van Oord and BAM International. Van Oord will dredge a 16 m deep turning

Costa Rican president Luis Guillermo Solís (left) and APMT Central America MD Paul Gallie (right) at the official ground-breaking ceremony

basin and access channel and reclaim a 40 ha offshore island. BAM International will construct the complex atop the island.

Van Oord is deploying trailing and cutter suction dredgers as well as tower and crawler cranes and backhoes to move about 1 million tonnes of rock into position to create a 2 km perimeter breakwater.

To build the island, about 3.6 million m³ will be dredged from an offshore borrow area, plus 2.6 million m³ used from the dredging of the new access channel, turning basin, and berth pockets. About 3.1 million m³ of the material dredged from the channel and basin will be unsuitable for use in island reclamation and will be barged to an offshore deposit site.

The initiative at Moín fits into a larger regional context for APMT, which operates a container terminal in Buenos Aires, Argentina; Terminal Muelle Norte at Peru's Callao; facilities in Brazil at Itajaí and Pecém as well as a 50% share in a multipurpose terminal in Santos; and a USD900 million deepwater terminal being constructed at Lázaro Cárdenas, Mexico.

Compared with other APMT projects in Latin America, the Moín development will have "some similarities as well as unique attributes," said Gallie. The project integration and general construction methods to be used in Moín will be comparable to those used in other developments. What is unusual for the region is that the Moín facility is being built entirely over water, he explained.

The APMT development team believes one of its toughest challenges will be procuring local materials, such as rock, and particularly the "piling of the quay wall, an unstable clay layer, and the requirement to place and remove 365,000 m³ of surcharge" (extra material to account for settlement). APMT explained that "at the east end of the terminal the surcharge is designed at 12m above the terminal quay, so it will exert pressure both downward and horizontally onto the piles until ground stabilisation has been completed".

Once the island is ready, BAM International will build

the terminal facilities, including utilities, a container yard, paved surfaces, various structures, and 650 m of quay. There will reportedly be six post-Panamax cranes and two berths in addition to intermodal connections, plus technology and equipment ranging from the gate system to container handling, electronic data, and port community systems.

In the longer term, additional phases could bring the terminal's capacity to 2.7 million teu/year and deepen the channel and basin to 18m.

The sheer scale of this project might seem out of step for a country the size of Costa Rica, which is the third-smallest country in Central America by area, with a projected 2015 GDP of USD52 billion and a population of only 4.7 million. However, despite its relatively small size, the nation's role in certain export trades is large: it is a key producer of certain agricultural commodities, particularly bananas and pineapples. Costa Rica exported around 110 million boxes of bananas in 2014, on a par with 2013 levels, according to estimates by national banana corporation Corbana. That is the equivalent of about 2 million tonnes of banana exports each year. Gallie estimated that reefer cargo would account for about 60% of box throughput when the new terminal is completed.

The APMT facility will be part of the Puerto Limón/Moín Port complex of the Board of Port Administration and Economic Development of the Atlantic Coast (JAPDEVA). The terminal project is a public-private partnership between APMT, JAPDEVA, and the government of Costa Rica.

JAPDEVA facilities currently move about 80% of Costa Rica's 1 million teu in annual throughput, which comprises bananas, pineapples, and other cargoes including medical devices. The existing port complex already has container capabilities at Puerto Limón's Terminal Hernán Garrón Salazar, which also serves cruise ships, ro-ros, and general cargo vessels. However, there are space limitations: the terminal's landside boundaries to the north and west abut highways and the streetscape of Limón itself.

There is also the Gastón Kogan multipurpose terminal in Moín, which serves tankers, reefers, and ro-ros, and does have space for expansion. Although, according to Gallie, both JAPDEVA facilities are limited in terms of capacity, have no breakwaters, and suffer from a lack of cargo-handling equipment. The facilities "have not kept up with the times", he said.

Given all those factors, planners chose to site the new APMT container facility in Moín out over the sea to improve traffic flow. In an important component, the government has pledged to build a 2.2km, four-lane access road. A working access road is already operating.

In general, Costa Rica "is a very good investment", asserted Gallie, praising the leadership of the country's courts, business community, and government. "Costa Rica is on track for [a] positive change and the port is a fantastic opportunity to be a part of that." **PH**

Rendering of project



APMT



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Coming next month: TOC Europe

TOC Europe returns for its 40th edition to Rotterdam, Europe's busiest container port and the location of the newly opened APM Terminals' Maasvlakte II facility, which attendees have an opportunity to visit (see Port tour, p34). More than 160 exhibitors have booked stands at TOC Europe, held on 9–11 June, and there will be three industry sector conferences on the sidelines, two of them free.

As well as the usual array of world-class exhibitors showing off the latest technology and inviting your discussion, visitors can expect product launches, niche suppliers, equipment demonstrations, as well as the 'Happy Hour' from 4pm onwards on 10 June, where attendees can enjoy beer and wine courtesy of TOC Events.

"2015 is a special year for this brand as we deliver our 40th edition," said TOC event director Paul Holloway. "There is no better location for us to do this than Rotterdam, Europe's largest container port, kindly supported by the Rotterdam Port Authority. As ever, we will be offering an

extensive social and networking programme including a one-off 40th birthday party for our speakers, delegates, exhibitors and VIPs which will include a few surprises along the way."

The two free seminars are Tech TOC (terminal operations) and Bulk Ports & Technology. The theme of Tech TOC is the increasing demand for improved operational performance, cost efficiency and customer service facing ports and terminals around the world. From serving ever-larger vessels, to optimising the productivity, safety and environmental credentials of the existing 1,400-plus existing terminals worldwide, to creating the next generation of container handling facilities, innovative thinking and technologies will be critical to future success.

With this in mind, the sessions have been designed to provide the knowledge and tools to achieve enhanced productivity, safety and environmental performance. Sessions will be of particular interest to technical and operational personnel from container ports and terminals, and will be a mix of presentations, panel discussions and case studies.

The other free seminar is Bulk Ports & Technology. Over the past year the dry bulk shipping market has been hit with the double-whammy of slowing commodity demand and a glut of new ships ordered after the financial crisis. Consequently, freight rates have plummeted. In January, the Baltic Dry Index (BDI) fell to its lowest point in 28 years, down 95% from its pre-crisis high in January 2008.

All this places great uncertainty not only on shipping markets, but also on port and terminal service providers. With freight rates so low, sweating the shipping assets becomes even more critical to profitability. Hence, terminals are under greater pressure to raise their game in terms of productivity and optimisation.

The seminar on the bulk industry will provide a comprehensive analysis of global commodity trades as well as in-depth case studies of the

TOC Europe 2015

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Networking Upgrade – EUR250

Inclusions

Access to the exhibition, TECH TOC, Bulk Ports & Technology seminars, Happy Hour, invitation to port tour, networking reception, lunches and coffees.
Container Supply Chain delegate – from EUR395 to EUR1,400

Inclusions

Full event access – CSC conference, TECH TOC, Bulk Ports & Technology seminars, Happy Hour, invitation to port tour, networking reception, lunches, coffees, pre-event networking zone, speaker papers post-event



Photos: TOC Events



latest in terminal operations, management and technology for the people who move and handle dry bulk shipments.

The theme of this year's paid-for Container Supply Chain Conference is addressing "container shipping's seismic shifts: dealing with supply

chain fallout." The fallout referred to stems from the unprecedented upscaling of ships on both major and secondary box trade routes. At this seminar, the whole container supply chain will be represented: shippers, carriers, third-party logistics providers, ports and terminals, and attendees will learn about the mega-trends in box shipping that are currently affecting a host of cargo companies. Container port executives will explain how their facilities are positioning themselves to be supply-chain game-changers. Shippers will explain how they take their critical transport procurement decisions and how they reduce transport costs in their supply chain. There will also be the opportunity to get up to date with the latest data affecting supply chains, including trade analysis, fleet statistics and freight rates.

For more information and to register,
visit www.tocevents-europe.com

Port tour: Maasvlakte II

TOC Europe is offering delegates the opportunity to experience the future by touring APM Terminals' newly operational Maasvlakte II – a state-of-the-art automated facility with zero CO₂ impact.

The facility is one of the first two in the world to feature automated quayside operations, automated horizontal transport and automated stacking cranes.

APM Terminals' Maasvlakte II is set to become the most advanced terminal in the world. Thanks to technologically advanced systems and process innovation, it aims to set a worldwide standard in productivity, sustainability and safety. Each modality can count on a reliable service.

The mission of APM Terminals' Maasvlakte II is to enable safe and flawless container flows between sea and land. For this reason, all the processes in and around the terminal connect with one another seamlessly. The facility is aiming for optimal throughput by means of close co-ordination with every visiting vessel, train or truck. The basis for achieving this streamlined handling is co-operation on and outside the terminal.

"With this new, advanced terminal design and operating concept, we believe

the landside operation is as important to the terminal's operations as the sea-side; efficient, seamless movement across all modalities is a critical success factor for our customers," said Frank Tazelaar, the terminal's managing director.

The 86 ha terminal includes a 500 m barge quay, a 1,000 m-long deepsea quay and an on-dock rail terminal with four tracks of 750 m. Two barge quay cranes and two rail cranes are part of the landside investment in the 2.7 million teu annual capacity deepwater terminal.

Rail traffic currently comprises 15% of the overall Port of Rotterdam's volume. The new facility was specifically designed to increase rail volume through the port with a dedicated on-dock railway.

Testing of the on-dock rail terminal has included a weekly train service using two dedicated wide-span rail cranes and several rail-mounted gantry cranes (RMGs) in the automated container storage yard. The rail terminal offers three weekly services to internal European markets. Later in 2015, the frequency of trains will increase to 10 per week, or more, to expand the supply-chain capacity.

The terminal also features a dedicated barge terminal to efficiently handle 24-

hour barge operations. The barge quay crane operators will operate within the crane cabs, as opposed to the eight, super-post-Panamax ship-to-shore cranes, which will be the world's first remote-controlled terminal quay cranes. The barge quay features a 10 m depth – as compared with the deepsea quay depth of 20 m, capable of accommodating the largest vessels now in service in the global container ship fleet and future generations of ships. With the dedicated barge quay, a more reliable service can be offered to barge operators.

Maasvlakte II is the extension of the Port of Rotterdam located directly to the west of the current port and industrial area. When work started on Maasvlakte II in 2008, the sea there was 17 m deep. Now the first phase of construction is complete and a port area of 700 ha has been created, on which container handling companies Rotterdam World Gateway Container Terminals and APM Terminals will soon be operational. Shortly, Maasvlakte II will cover a net area of 1,000 ha of industrial sites, situated directly on deep water.

The port tour is open to TOC delegates and takes place on 8 June, before the main conference, so separate registration is essential.

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Michael King

The next best port?

Deep draughts at the Philippines' Subic Bay is making it a viable alternative to Manila, reports **Michael King**

After a torrid 2014, congestion and delays at the port of Manila significantly eased in the first months of 2015. However, some leading executives expect problems to recur once demand increases later in the year and are exploring long-term alternative gateway options.

The prime candidate is Subic Bay, located just 120km from the outskirts of Metro Manila and boasting good road links to Clark Airport and Clark Special Economic Zone via the 45 km Subic-Clark-Tarlac Expressway.

Subic Bay Freeport Zone, which is managed by Subic Bay Metropolitan Authority (SBMA), is already used by Brazilian mining giant Vale to tranship iron ore from its 400,000 dwt Valemax bulkers before the cargo is shipped to China. But over the years the port has proven stubbornly unattractive to container liners and shippers despite offering a depth of 13 m, a big improvement on

Manila where even vessels as small as 3,000 teu capacity cannot be fully loaded with laden containers due to entrance channel draft restrictions.

But for all its natural advantages, Subic has never really taken off as a logistics gateway to the Philippines. FedEx moved its hub operations for Asia to Guangzhou, China back in 2009 after a 13 year stay at Subic Bay International Airport because it was so unattractive to container liners and shippers.

Despite its many natural maritime advantages, Subic has proven a hard sell to shippers and carriers which have instead stuck with Manila's known handlers, competitive trucking costs, multiple network options and frequencies, ample warehousing, and easy access to the country's main import market.

Subic's origins as a box port have not helped its case. The original concession tender to operate a box facility there started back in 1996 but it took 11 years before the concession was finally, definitively awarded to ICTSI, who won a second concession in 2011. Despite the strength of the Philippines economy, Subic continued to prove of little interest to potential users. Until last year most were happy to stick with Manila given its hub status and the multiple network options and frequencies this confers as well as its reasonable trucking costs. But the view of Subic changed as 2014 progressed and Manila became Asia's most congested and clogged port. Lines



Port facilities in Subic Bay, which is becoming a more attractive port than Manila

and shippers were forced to explore alternatives – both for the short and long-term.

According to the SBMA, Subic Bay container volumes almost doubled in 2014 to 77,177 teu, up from 37,469 teu in 2013. Of the total, ICTSI handled 71,218 teu with the majority of the cargo arriving in the second half of the year as delays at Manila worsened – throughput in November peaked at over 14,000 teu compared to just 2,560 teu in January. But as utilisation levels at Manila have fallen, the question is whether Subic Bay can keep hold of its existing five weekly liner calls and build further traffic?

Certainly, some key lines are enthusiastic. Daniel Ventanilla, General Manager of NYK Line (Philippines) which offers calls at Subic Bay as well as services to Manila, says part of the traditional problem of using the port has been that most exporting companies are located in industrial zones south of Manila, rather than north on the route to Subic Bay. As a result, NYK mainly markets its Subic service to those who need cargo urgently, prior to the ship docking at Manila, and are willing to pay higher trucking costs.

"It's still cheaper than air freight," Ventanilla explains. "I think if there's more cargo coming then we could use bigger ships and drop some off at Subic before we call at Manila with its draft restrictions.

Ventanilla also believes Subic will gradually attract more cargo as central Luzon develops economically. "There are around 22 million people living north of Manila which is a big import market," he says. "Most of this cargo goes to Manila but it doesn't need to. And trucking costs from this region are not so high.

"What central Luzon needs in the long-term is more export-based economic zones to attract new investors. This would change the shipping landscape. Subic certainly has the facilities and natural draft."

Tim Wickmann, CEO of MCC Transport, the AP Moller – Maersk Group's intra-Asia carrier which calls at Subic

“So we are bullish on the market because people want alternatives to Manila”

as well as offering services out of Manila and Batangas, is another executive who believes Subic is a good option for certain consignees. "We call at Subic before Manila and hope this is good an option for customers located that side of Manila," he says. "It's certainly an interesting alternative."

There is political momentum in favour of developing alternatives to Manila after a presidential decree ruled the ports of Batangas and Subic form part of Manila. When implementing regulations are in place this will enable ships to be diverted to either alternative without changes to bills of lading.

Much expectation rests then on ICTSI's ability and, some say, willingness given its existing interests in Manila, to attract new services and cargo flows. ICTSI's two Subic terminals - NCT-1 and NCT-2 – together offer four quay cranes, six reach stackers, and three empty handlers across 500m of quay operated by its subsidiary, Subic Bay International Terminal Corporation (SBITC).

Roberto Locsin, General Manager of SBITC, is optimistic that further volume growth can be achieved this year. He argues that after its performance in 2014, Subic can offer potential customers tangible proof that it has the capacity and expertise to handle sizeable flows. The SBMA and customs are also working with SBITC to further improve operations by creating a one-stop-shop to expedite cargo flows. ICTSI will also add more prime movers and two RTGs during the course of 2015 to boost capacity.

"This was a sleepy port prior to August last year so we were almost in start-up mode, but I think what our performance showed was that there are advantages to Subic even when there isn't congestion in Manila," says Locsin. "It's an efficient port and government agencies are working extremely hard to improve operations further.

"There are now more jobs and industry north of Manila, at Clark and along the North Luzon Expressway. The presidential decree will also make it easier for traffic to come here.

"From our point of view we need to manage growth carefully. We are expanding yard capacity with new equipment this year and we are making the port easier to use along with SBMA and customs. We then hope to add a sixth shipping line later in the year.

Locsin added, "We already connect by feeder to almost all regional hubs so we have global connectivity. We just want a Hong Kong service.

"So we are bullish on the market because people want alternatives to Manila." **PH**



Port efficiency in global trade

Dr Fortune Laurence examines some of the issues preventing developing ports from becoming more efficient



Emphasis in world trade today is placed on efficiency in ports and the maritime industry in an era of technological advancement, cost reduction, and customer satisfaction expectations. The port industry is in overdrive to achieve these objectives by investing on infrastructural capacity, notably robotic or driverless cranes, neglecting that port efficiency is a function of both exogenous and endogenous factors.

Obviously, inefficiency in maritime industry is usually predicated by rising costs, but most ports have refused to accept that a robotic or mechanised port does not simply translate into an efficient port but to a more expensive one. Certain ports are achieving an (imagined) high level of services at the expense of stakeholders, key partners, and the environment. This is unacceptable; efficiency is a sustained level of service achieved cost-effectively, optimising stakeholders' objectives at any given period.

Port efficiency is port-specific in today's global trade and to think otherwise is myopic. This means that what happens in one port or country have impacts on others. A ship enjoying some degree of efficiency in a port has, as a result, saved some costs, but it could equally on the same journey experience inefficiency and increased costs at another port, negating overall efficiency.

Developed ports are those that have achieved a sustainable level of operations and management efficiency over time, while developing ports are those aspiring to attain similar levels of efficiency. This distinction has been exploited for the mutual benefit of both categories. Some developed ports practise 'sister-port' relationships with developing ports, thereby fostering growth and development (see sidebar).

World maritime trade is evolving rapidly and no port waits for others to catch up. Although, since the inefficiency of one port could impact directly or indirectly on the efficiency of another, this raises the issue of balancing port efficiency within the global supply chain framework beyond what the 'sister-port' concept offers. Any weak port link within the chain impacts negatively on the whole in terms of extra costs.

How can port efficiency be balanced within the global supply chain framework? Disruptions of the supply chain by any elements within the framework adversely

affect revenue and costs, but resilient supply chains incorporate event readiness, capable of providing an efficient response to demand uncertainty. Cognisance of the fact that inefficient ports disrupt the global supply chain, coupled with the complexity and fragility of that chain, therefore demands that elements within the framework collaborating to balance efficiency as a vital part of the chain.

Ports in developing countries notably work under undue institutional constraint and continuous interference from stakeholders, tending to hinder efficiency improvement compared with developed ports. For example, development financing in most developing countries' ports is mostly tied to political decisions and conditions. This approach distorts strategic decision making in port management and creates bottlenecks in port-supply chain development.

In some developing countries, port policies are controlled by supervising ministries, and appointments or approval of managing directors and board members is the prerogative of politicians. Excessive interference in the running of ports constrains every effort towards making them more efficient. The introduction of the landlord ports concept seems to have eased the tension as it separates ownership and control from management. Furthermore, ongoing concession agreement between some ports and some overseas financial holding companies is a step towards freeing the operation and management on ports from the grip of governments.

Balancing port efficiency in the global supply chain is a process of examining, evaluating, and monitoring the port-supply chain relationship to identify and correct any constraints that may hinder the system's efficiency. Port efficiency in the global supply chain framework demands a thorough understanding and analysis of the supply chain process because balancing port efficiency within the global chain requires a technical approach.

An important element of this is the creation of a quality training programme with a problem-solving orientation to meet the need for highly skilled staff in port-supply chain management. Ports have become an integral part of the global production system. Some are even designated industrial ports, for example, the Kribi



Tolaram Port/Lekki

Artist's impression
of Lekki Port in
Nigeria

Industrial Port Complex in Cameroon and Nigeria's Lekki Port's industrial complex in Lagos. Conventional break-bulk or container ports are redesigning their operations and infrastructures to accommodate industrial production and development, and these ports are retraining staff to embrace these new innovations.

In addition, policy variables reflecting port regulations affect efficiency in a non-linear way. Some level of regulation increases port efficiency, but an 'excess' of regulation reverses the gains – a problem faced especially by ports in developing countries today. Ports within the global supply chain require a free hand in operations and management if efficiency and cost reductions are to be achieved.

Other deficiencies associated with port management are also harmful to port competitiveness. For instance, some developing ports still receive cargo without specifying the presentation of a Standard Shipping Note, which is unacceptable in modern port practice. In many ports, it is impossible to obtain an accurate account of the main port procedures, and sometimes port regulations are not clear about where responsibilities lie. These deficiencies waste time, increase risk of damage and pilferage of products, and consequently increase the costs associated with port activities.

Amid the variables that no government can influence, such as distance and location, port efficiency is an important determinant of costs. In the 21st century, most ports are adopting a development strategy that emphasises integration within the global supply chain, reducing tariff and non-tariff barriers to trade. This reduction in artificial trade barriers highlights the importance of logistical costs as the remaining barrier to international trade. Therefore, any strategy aimed at integrating a country's port into the global supply-chain framework has to tackle transport and other logistical costs.

TTPM International Consultants has designed a port efficiency management programme for forward-thinking ports that want to integrate their operations with the global supply chain.

The core objectives are:

- to enable participants to identify constraints, opportunities, and risks in management of port infrastructure and policy variables, and to understand the cost implications of efficient port operations;
- to enhance the skills of participants in negotiation of trade disputes, persuasion, and management of partners and stakeholders in reaching agreement on conflicting efficiency management; and
- to enhance participants' analytical knowledge and ability in the representation of infrastructural and policy variables performances while enabling them in policy formulation, analysis, and review in port efficiency management perspective. **PH**

i MORE INFO: www.ttpminternational.co.uk

👤 AUTHOR: f.laurence@ttpminternational.co.uk

Sister ports

A close relationship between two ports in the same or different countries is now a growing practice. Just as with 'twinning cities', this relationship is inextricably linked with international maritime trade to promote trade, development, and efficiency. It is usually between a developing port and a developed port with mutual benefits, and the relationship commonly sealed with a memorandum of understanding.

In 2012, the Port of Antwerp formed a strategic alliance with Essar Ports, the second-largest private port operator in India. The alliance was aimed at structural and commercial collaboration in training and consultancy, port planning, raising the productivity and quality of logistics services, and connections with the hinterland of India, and generating between the two regions. To cement the relationship, the Port of Antwerp subsidiary PAI invested EUR25M (\$26.8M) in Essar Ports. In addition, since February this year, following the signing in Mumbai of a memorandum of understanding, Antwerp has offered training for Indian port professionals, with courses given in a specially equipped training centre.

China's Shenzhen Port Authority and Canada's Halifax Port Authority signed a sister-port agreement in October 2013 to develop two-way trade and facilitate shipping business for both ports, and to deepen an understanding while building relations between the two regions.

In 2012, the US port of New Bedford in 2012 signed an agreement with Tuxpan in Mexico, marking the beginning of a public/private partnership positioning New Bedford as an important import/export hub. Its mayor, Jonathan F Mitchell, remarked, "Today, we celebrate an exciting new trade opportunity with Mexico. Our port continues to provide a home to the most successful fishing fleet in the nation."

The Port of Seattle signed a sister-port relationship with India's Dhamra Port in March 2011, reflecting the growth of the Indian population in King County. It was the 13th sister-port relationship for Seattle, which includes Port of Kobe and Miyagi Prefecture in Japan besides Shanghai, Qingdao, and Dalian in China.

These active sister-port relationships clearly indicate the synergistic fostering of development, facilitation of maritime trade, and efficiency improvement going on today. I believe more sister-port relationships should be encouraged with ports in developing countries that need urgent improvements in efficiency, development, and trade growth. **PH**

Gothenburg tracks big sulphur emissions drop



Port of Gothenburg (PoG) has announced that sulphur emissions have fallen by 80% since stricter sulphur emission controls came into force from the beginning of 2015, John Pagni and Jem Newton report.

The permissible Tier III levels in the MARPOL sulphur emission control area (ECA) were reduced from 1% sulphur content in bunker fuel to just 0.1% in the North and Baltic seas, as well as the English Channel ECA.

To verify whether ships were conforming to the new standards, PoG collaborated with Chalmers University, with support from Swedish environmental protection agency Vinnova, to make a 'sniffer' that measures shipping exhaust. The size of a household fridge, the device was placed on Älvsborg Fortress, an island on the port's fairway, which all ships must pass on arrival and departure.

More than 5,000 plumes have been measured at the port entrance and the technology is now considered reliable. Since 1 January, some 200 ships have been evaluated, with 80% being acceptable, while the emissions of the other 20% were deemed to be too high.

"It is incredibly positive to see how the new rules are having such an effect and that sulphur emissions are falling," said Edvard Moller, PoG senior manager for the environment. "At the same time



Ports of Stockholm

High-voltage shore cable at Port of Stockholm

there is still uncertainty regarding the controls on vessels failing to comply. The industry has reason to be concerned that less serious shipping companies will not follow the rules and that this will lead to distortion in competition."

At the same time as the new Tier III 0.1% limit, PoG introduced a reward scheme to encourage compliance. It uses two scales, the environmental ship index (ESI) and

clean shipping index (CSI). Ships classified with 30 or more ESI points get a 10% tonnage-based fairway fee discount, as will those that gain the CSI's green certificate. However, the port still has to announce the penalties it will impose on vessels that fall below the required level.

The sniffer measures the sulphur and carbon dioxide levels in the air when a vessel passes to deduce

the sulphur content of the fuel being used. It has been tested extensively, according to Johan Mellqvist, associate professor at Chalmers University's earth and space sciences department.

"We have worked for 10 years to produce methods to monitor compliance with environmental regulations at sea, both from fixed measuring stations such as this and from aircraft. Our measuring technology is unique," he said.

Gothenburg is also one of the World Port Climate Initiative pioneers in providing onshore power supply, but Swedish sister authority Ports of Stockholm (PoS) is ensuring that its commuter ferry links with Finland also benefit from high-voltage shore connections (HVSC). An application for European Union funds to help equip its ferry terminal at Värtahamn is part of a broader scheme to improve maritime links between Sweden and Finland.

PoS has allied with four Finnish ports to submit two joint Motorways of the Seas applications under the 2014 CEF Transport Calls for Proposals.

Helsinki, Turku, Naantali, and Hamina/Kotka ports, as well as PoS – the so-called Northern ScanMed Ports – are core ports on European TEN-T Corridor 5, which stretches from the Russian border to the Mediterranean. "The first application, titled Bridging Baltic Markets, is led by PoS because we are investing the most – EUR167 million [USD177 million] – in both Värtahamn and Stockholm's Kapellskär harbor out of a total of EUR178 million," Sandra Gegerfelt, PoS EU co-ordinator told P&H.

Notable numbers



EUR700 bn

TEN-T funding sought by infrastructure projects



13

Sister-port relationships for Seattle, US

This sum covers infrastructure development, including berths, ramps, and logistics areas. The second proposal labelled 'Sustainable Maritime Links' has an investment budget of EUR21 million focusing on environmental aspects such as LNG bunkering, onshore power supply, and wastewater reception facilities.

Skangass and Viking Line are partners in this application, although the latter's participation is not because of its LNG ferry *Viking Grace* plying Turku-Stockholm, but rather for its technology development for future vessels.

Although HVSC is a mere EUR0.8 million, it is significant for being the first in these ports, as it cuts noise and air pollution. "HVSC is a faster hook-up and means only one cable instead of up to 12, so ships on a short turnaround will be able to use it," said PoS project manager Per Ling-Vannerus.

Värthamn's central Stockholm port development is the HVSC recipient which, for now, will benefit Tallink and Silja Line, as they are the main customers of this terminal, said Ling-Vannerus. As the lion's share is for an LNG terminal at Port of Turku budgeted at EUR13 million, Turku is this application's proposal leader.

"The timetable for the LNG facility to be built at Pansio by Skangass is two years, so it should be operating by early 2017 with a capacity of 30,000 m³," Port of Turku's CEO Christian Ramberg told P&H.

 wpci.iaphworldports.org

Two piracy trends emerge

The emerging pattern of pirate attacks already resembles what happened in 2014, writes Dave Sloggett. Two main clusters of events have been identified from data submitted to IMB Piracy Reporting Centre.

The first involves a continuing pattern of robberies in anchorages in Indonesia. It is inevitable that this pattern will continue, as the Indonesian authorities will take time to build their maritime security capability to the point where they can counter the activities of the robbers. These robberies are, however, often unsuccessful as crews remain vigilant in those anchorages and ports known to be at risk.

The second cluster involves seven attacks in the Gulf of Guinea up to the end of February 2015. This follows the pattern of attacks in 2014 in the Gulf of Guinea with one significant difference. For a brief period of time last year it appeared that navies in the Gulf of Guinea had begun to deter attacks in their territorial waters, driving the pirates out to sea. This reduced the numbers of incidents and

made life considerably harder for pirates, who had to seek potential targets over a much wider area.

That pattern seems, on the evidence of the initial reports submitted to the IMB in 2015, to have gone into reverse. The pirates have clearly resumed operating closer to the edge of the territorial waters. It is too early to be precise as to why such a worrying trend has emerged. It is more than likely down to a combination of factors rather than a single issue that is relatively easy to solve.

One possible factor is that the success of the Gulf of Guinea navies last year in deterring pirate attacks in coastal waters has created a backlash, with the pirates now being prepared to increase the levels of violence involved in hijacking vessels and taking greater risks of being caught by operating closer to the shoreline. This is also the area where onboard security teams cannot operate, increasing the vulnerability of vessels as they transit into territorial waters.

In another continuation of the established pattern of attacks in the Gulf of Guinea area in 2014, the first

three incidents saw the vessels' crews subjected to beatings. In the most serious incident, reported on 30 January, a fishing vessel crewman died and three were reported missing after having jumped overboard to avoid being taken hostage when attacked by heavily armed pirates just outside Ghanaian territorial waters.

The Togo Navy saved many of the crew who had abandoned the vessel. Meanwhile, the pirates seized the fishing vessel and its seven remaining crew members and sailed away. They later left the it and its crew returned to port safely.

The early indications, therefore, suggest that the pirates in the Gulf of Guinea could threaten the downturn in international piracy from its peak in 2010 when attacks off Somalia were at their highest. It is clear that the navies operating in the Gulf of Guinea need to redouble their efforts to enhance their overall situational awareness and their ability to respond to incidents as they develop. Speed of response is vital if such attacks are to be successfully combated.

 IMB Piracy Reporting Centre
<https://icc-ccs.org/piracy-reporting-centre>

Thailand ratifies labour convention

Thailand's cabinet has agreed to ratify the Maritime Labour Convention, according to the government's official website.

The site quoted a government official as explaining that the international convention would cover labourers and workers at sea on vessels sailing under the Thai flag.

"It aims both to achieve decent work for seafarers and to secure economic interests through fair competition for quality ship owners," he said.

The convention covers working hours and conditions, wages, career development, health and safety, medical care, access to onshore welfare facilities,

complaints procedures, inspections and the responsibilities of flag and port states.

According to the International Labour Organization, the UN body responsible for the convention, 56 countries, responsible for conditions for seafarers on more than 80% of the world's gross tonnage, have already ratified it.



1.3 m tonnes

Planned capacity for Africa's largest oil storage facility, at Takoradi



5

Existing weekly liner calls at Subic Bay, Philippines



IT systems are particularly vulnerable as the result of company mergers

Ports could be falling short on cyber attack protection

In recent years there has been one high-profile media report of a port being subjected to cyber attack, reports Dave Sloggett.

Over an unknown period of time, cargo-tracking systems at the Port of Antwerp were infiltrated to aid the importation of cocaine and heroin shipments hidden in containerised cargo arriving from South America. The discovery of the security breach culminated in the arrest of 15 people in June 2013.

This attack started when a malicious email was sent to port staff. When it was opened a piece of software was inadvertently downloaded to the port's internal IT systems. When this was eventually discovered and a firewall installed to prevent further intrusions, the criminals broke into the port using their

password access to plant key-logging devices that provided wireless access to keystrokes and screen grabs.

While this attack was ultimately detected and the threat neutralised, there is a suspicion that this incident might be the tip of the iceberg. Despite being an acknowledged part of any nation's critical national infrastructure, port authorities have probably not given the same level of focus to their cyber security as they have to physical security measures.

A study recently published by defence company IQPC has highlighted this potential vulnerability, urging business drivers to integrate previously separate IT systems into their overall security plan. Drawing parallels with other organisations,

IQPC found that spending on cyber security in ports did not match comparable land-based organisations in the private and public sectors.

Criminal activity around ports is a familiar threat, but what if ports were to be the subject of attacks by other nation states aiming to disrupt that country's economy? This could be one way that Russia, for example, might choose to react to the increasing economic sanctions that have been applied by the west in the wake of its annexation of Crimea and involvement in the uprising in Ukraine.

While Russian officials have denied any involvement in these attacks, evidence in the public domain has pointed to use of proxy forces in cyberspace, in what is now deemed a 'hybrid

and ambiguous' form of economic warfare.

Using cyberspace is effective because it offers anonymity regarding who is behind the attacks. For example, attacks in Estonia were directed at the banking system, an obvious economic target. In Georgia, during the Russian military intervention in South Ossetia, the attacks were directed at the government and military telecommunications infrastructure.

The problem with cyber attacks is that, unlike conventional warfare, they can remain under the radar horizon, covertly monitoring systems and collecting information on their vulnerabilities before a major attack aimed at major economic disruption is launched.

Given the recent high-profile attack directed against Sony Corporation in connection with its release of a controversial film on North Korea, it is not difficult to imagine that vulnerabilities in port information technology systems are already being exploited. If this is true, and it seems highly likely, port security officials need to be alert for any indications that their systems have been compromised.

This is made all the more difficult by the wide variety of ways in which weakness in their systems may be exploited. In such an uncertain environment, where the potential economic damage to society at large as a result of major disruption at ports could have dramatic consequences, it is important for port security officials to widen their horizons to understand and counteract the threats to their day-to-day operations from both criminals and hostile nation-states.

20,150 teu

Mitsui OSK Lines has placed an order for six of these vessels



1.7m

Cruise passengers Southampton handles annually

US wrestles with tougher ECA rules

John Gallagher reports that new fuel standards are clearing the air at US ports, but making vessel compliance a challenge. As tighter regulations governing vessel fuel content come into force outside US ports and harbors, vessel operators are facing a new set of compliance issues.

The United States began enforcing the North American and US Caribbean Sea Emissions Control Areas (ECA) on 1 August 2012, which requires vessels to burn 1.0% sulphur fuel while in a zone that extends up to 370 km from the shoreline.

The regulation became 10 times stricter on 1 January 2015, when the fuel sulphur content requirement for vessels operating in ECA zones was reduced to just 0.1%.

However, the stricter rule causes more headaches for shipowners. In a safety alert issued on 3 March, the US Coast Guard revealed that there had been several incidents involving "substantial" fuel leakages in vessel machinery spaces while the ships were switching to low-sulphur fuel before entering ECA zones.

"Although such leakages were contained, fuel releases of any kind may result in pollution, injury or



death of personnel and shipboard engine room fires," the coastguard cautioned. "Moreover, many losses of propulsion have occurred in different ports and have been associated with changeover processes and procedures."

Among a list of ECA compliance recommendations contained in the alert, the agency advised that vessel owners and operators provide periodic crew training to ensure safe, leak-free fuel switching.

One trend that was identified before the higher sulphur standard went into effect – but has the potential of increasing – is reliance by shipowners on chartering parties to oversee ECA compliance, according to Jeanne Grasso, a

maritime lawyer at BlankRome's Washington, DC, office.

"Under many charterparties, the charterer has the responsibility for procuring fuels, but in cases we've seen, shipowners are relying completely on the charterer to properly inform the US Environmental Protection Agency [EPA] that a vessel is unable to purchase compliant fuel," said Grasso.

While not a requirement under MARPOL, filing a Fuel Oil Non-Availability Report (FONAR) with EPA can help mitigate possible penalties for non-compliance.

However, in addition to the false belief that charterparties are responsible for fines, many

shipowners are mistakenly looking at FONAR as an exemption from liability – a get-out-of-jail-free card – which it is clearly not.

Penalties for non-compliance can be steep. Federal guidelines allow EPA to assess civil penalties of up to USD25,000 per violation per day. Record-keeping violations alone will be assessed at USD2,500–15,000 per violation per day.

Grasso believes that as EPA begins enforcing the higher standards that went into effect on 1 January, shipowners relying solely on their charterparties for compliance could be at even greater risk.

"Cleaner fuel may be less available and the fuel's higher cost will mean the economic advantage of not complying will be greater," Grasso said. "That's something we think EPA is going to be interested in investigating."

An EPA official told *P&H* that, as of 12 March, no new investigations had been started or new fines issued since the new fuel standards came into force.

Meanwhile, ports around the world are keeping a close watch on how new international standards for vessel fuel requirements are making the air cleaner.

Convention on removal of wrecks 2007

The Nairobi International Convention on the Removal of Wrecks 2007, which came into force internationally on 14 April 2015, imposes an obligation on

shipowners that operate vessels flagged with states that are parties to the convention or whose vessels enter ports of any of the said countries, to insure

their vessels to cover liability under the convention.

In January this year, Malta became the latest to ratify it, joining Antigua & Barbuda,

Bulgaria, Congo, Cook Islands, Denmark, Germany, India, Iran, Liberia, Malaysia, Marshall Islands, Morocco, Nigeria, Palau, and the United Kingdom. Other countries, including Norway, are expected to do so.



13.5 m ha

Size of the port complex at Suape, Brazil



29

Times IAPH World Ports Conference has taken place



The conference will celebrate the reunion of world port leaders and debate changing demands and alternative actions required in our times of globalisation and climate change. The Hamburg Port Authority team is the host, organiser and promoter of this event. The 2015 world conference will unite world port leaders to discuss issues of immediate and long-term interest and of concern to the industry.

It's here at last!

Critical issues relating to intelligent port management will be at the forefront of discussions at the 29th IAPH World Ports Conference on 1–5 June in Hamburg

State-of-the-art maritime technology will be showcased at the conference exhibitions, and many social activities (see box) are planned to showcase the best in entertainment and cultural activities Hamburg has to offer. From a welcome reception in the Rathaus, to a dinner at the Maritime Museum, the gala dinner at the Fischauktionshalle, via Bali

Night at Beach Hamburg (hosted by the 2017 hosts, the Indonesia Port Corporation) – delegates and guests will have every opportunity to network and socialise.

“The management board and the staff of the HPA are excited to be your host. Not only will we address topics of global concern such as safety and security, ecology, port financing and

macroeconomic challenges, but we will also deliver interesting insights into Hamburg's smartPORT concept,” says the chairman of the HPA management board, Jens Meier.

It is anticipated that more than 1,000 delegates will register to attend the conference.

The conference sessions encompass the industry's most important trends and issues:

- Global economic megatrends and their impact on the maritime industry
- Transformations and challenges in the global economy
- Bigger vessels – bigger challenges
- smartPORT logistics: challenges
- smartPORT logistics: solutions
- Cruise shipping

Social programme and contact details

Evening programme

Sunday 30 May – Early cocktail reception

Bricks Tea and Lounge Bar at Renaissance Hamburg Hotel offers a perfect setting to meet and catch up with delegates, network and socialise.

Monday 1 June – Welcome reception at the Rathaus

The Hamburg City Hall, built at the end of 19th century, has the most magnificent neo-Renaissance parliament and government buildings in Germany.

Tuesday 2 June – Maritime dinner at Maritime Museum

Enjoy a memorable evening in the museum and see the world's largest private collection of maritime treasures in Kaispeicher B (quayside store B) of Hamburg. The collection tells the stories of explorers and conquerors, captains and simple seafarers, and it offers an expedition through 3,000 years of human history.

Wednesday 3 June – Bali Night at Beach Hamburg

Please join our next conference host for 2017, the Indonesia Port Corporation, as they entertain you with the taste of the South Seas at Beach Hamburg.

Thursday 4 June – Farewell gala dinner at Fischauktionshalle, the Fish Auction Hall

Hamburg Port Authority invites you to an exciting evening of dinner and entertainment as we bid farewell to IAPH 2015. The 100-year-old traditional atmosphere of the market hall, situated directly on the banks of Elbe with the view of the harbor, will be the perfect setting.

Accompanying persons programme

It's not just conference participants who will be in for a treat when the event comes around. The accompanying persons programme will include:

Monday 1 June –

(Option 1) Visit the Airbus headquarters in Hamburg and meet the A380.

(Option 2) Visit the Holsten Brauerei, one of the largest brewery groups in Hamburg.

Tuesday 2 June – Visit the Miniatur Wunderland – the world's largest computer controlled model railway in Hamburg. This will be followed by a city tour by double-decker bus or on foot (depending on your choice) will follow.

Wednesday 3 June – Visit the city of Buxtehude, known for its Gothic-style brick architecture, then visit Obsthof Lefers, an orchard, or Altes Land, an old country (depending on your choice).

Thursday 4 June –

(Option 1) Visit the district of Blankenese on foot and sail through the port by boat.

(Option 2) Visit Hamburg Museum and enjoy a boat tour on Lake Alster.

Venue

1 June – Technical committee meetings and board meeting at Marriott Hotel Hamburg

- Clean air in ports
- How diversity contributes to smart thinking (IAPH Women's Forum)
- Ports and global trade – legal trends and challenges.

Confirmed presenters include: Marco Lippuner (Siemens, Energy Management Division), Peter Hinchliffe OBE (International Chamber of Shipping), Dr Christian Growitsch (Hamburg Institute of International Economics), Jost Bergmann (DNV GL), Jörg Pollmann (Port of Hamburg), Benjamin Lai (DaChan Bay Terminal, Modern Terminals), Patrick Verhoeven (European Community Shipowners' Associations), Jens Meier (Hamburg Port Authority), Michael Pal (Fremantle Ports,

Australia), Ramón Gómez-Ferrer (Valencia Port Authority, Spain), Monika Breuch-Moritz (Federal Maritime and Hydrographic Agency, Hamburg/Rostock), Gun Rudeberg (Ports of Stockholm), Douglas Ward (author Berlitz Cruise Guide), Lim Ki-Tack (Busan Port Authority), Roberto Perocchio (Venezia Terminal Passeggeri), Michael Ungerer (AIDA Cruises), Bo Larsen (CLIA), Alexander Porschke (NABU Hamburg - Nature and Biodiversity Conservation Union), Johan Röstin (Copenhagen Malmö Port), Gene Seroka (Port of Los Angeles), Christine Loh (Hong Kong Special Administrative Region), Michael Shewchuk (Ocean Affairs and the Law of the Sea, United Nations); Frans van Zoelen (Port of

Rotterdam Authority), Dr Christoph Hasche (German Maritime Arbitration Association), and Marcus John (Thomas Miller - Australasia).

After the conference, participants will be given a choice of excursions for the Friday morning:

- A tour through the Port of Hamburg – this will link theory with practice: on a three-hour boat tour through the Port of Hamburg you will discover how intelligent port management works in practice.
- smartPORT logistics: from collecting information to displaying it – an opportunity to experience the smartPORT from up close and look at some of its project results.

- smartPORT energy and Vessel Traffic Service (VTS) Centre – this tour takes you to the VTS Centre, via several ongoing projects under the smartPORT energy initiative such as shore-power-for-cruise-ships, solar plant-powered electric cars, electric automated guided vehicles, and wind turbines.
- smartPORT energy: shore power for cruise ships – you will visit two project sites in the Port of Hamburg, where shore power is supplied to cruise ships. One is the first fixed shore power facility for cruise ships in Europe, which is equipped with a frequency converter. The other is at the cruise terminal in HafenCity.

More Info: www.iaph2015.org

2-5 June – Opening, working sessions, closing ceremony and board meeting at Congress Center Hamburg (CCH)

Prior to the official opening, the technical committee meetings and board meeting are held at the Marriott Hotel Hamburg on 1 June. Then the venue moves to the Congress Center Hamburg (CCH) on 2 June.

The CCH is just a short walk away from restaurants, bars, fashionable districts, museums, art galleries and Hamburg's excellent shopping facilities. The harbor, Lake Alster and the Reeperbahn are within easy walking distance.

A free shuttle service for all conference delegates will operate between the conference hotels – the Hamburg Marriott Hotel and the Renaissance Hamburg Hotel – and the CCH during the conference period.

Airport

Hamburg Airport (HAM) is 11 km north of the city's central railway station. There is a direct S-Bahn (metro rail network) service to it from the airport that takes only 25 minutes and operates every 10 minutes. In addition, air travellers will find many taxi ranks at Hamburg Airport.

If you want to be picked up at Hamburg Airport by taxi to avoid tedious waiting in the queue upon arrival, just call +49 40 211 17 99 while retrieving your luggage from the baggage carousel. The Hansa-Taxi dispatch will brief you about the details.

If you wish to book an exclusive pick-up service from Hamburg Airport to your booked hotel in Hamburg city, please write to Advanced Mobility Solutions (AMS) at info@event-mobility.com

More info: <http://www.hamburg-airport.de>

Hotels

The Hamburg Marriott Hotel and Renaissance Hamburg Hotel are the official conference hotels. Both are about 12 km from Hamburg

Airport (HAM) and are equipped with wireless high-speed internet access in guest rooms, lobby and public areas.

Located in Hamburg's city centre, both hotels are within three minutes' walking distance of each other, allowing conference guests to socialise, network or enjoy an after-conference drink together in the heart of downtown Hamburg. In addition to the official conference hotels, Mercure Hotel Hamburg Mitte is also suggested.

A free shuttle service for all conference delegates will operate between the Marriott Hotel Hamburg and Renaissance Hamburg Hotel, the Mercure Hotel Hamburg Mitte, and the CCH during the conference period.

The special room rate will apply when booking online with group code 'IAPH 2015' at the conference website. The rate will be available until the group block is sold out.

Room rates: Marriott: €180.00–340.00 per night (Breakfast can be added on check-in); Renaissance: €180.00–260.00 per night (Breakfast can be added on check-in); Mercure Hotel Hamburg Mitte: €118.00–168.00 per night (Breakfast can be added upon booking).

More info: www.iaph2015.org/arrival-hotel/accommodation

Contact Information

The 29th IAPH World Ports Conference will be the most important gathering of the year for IAPH and the world's port community. At the 28th conference, more than 500 participants from across the world gathered in Los Angeles, USA.

For more detailed information about the conference and registration, see: www.iaph2015.org

For inquiries about the conference programme, contact: info@iaph2015.org

For exhibition and sponsorship inquiries, contact: exhibit@iaph2015.org

▶ Women's forum

'We should aim to abolish the Women's Forum'

Anne Sigrid Hamran CEO, port director at the Port of Oslo, is looking forward to the day when the Forum is no longer needed; meanwhile the Forum is working to bring that day closer

Norwegian ports are male-dominated. Both port administrations and port actors, such as stevedores and forwarders. Despite a large degree of gender equality in Norwegian working life, ports are lagging behind. Although the general trend is positive, with several female port leaders since I started off as the only one in 2002, there is a long way to go.

Female port leaders often have an untraditional background, thereby facing a double challenge: we need to do a good job due to the fact that we are a minority, and we must tackle professional areas that from the outset are not ours.

Being an architect myself, my background is relevant, as the Port of Oslo is engaged in transforming former port areas for urban development. Hence, we need this kind of competence. Being unacquainted with the port business from the start, however, it has been a steep learning curve.

It must be a long-term objective for there to be no need for a special IAPH Women's Forum and to eventually close it down. Nevertheless, for the time being it is a useful network, a shortcut for contact between ports.

Norway is a peninsula with many ports, with little ice and few tidal issues. Nature has really paved the way for seaborne transport. Still, far too much cargo is transported through Sweden on roads to and from Norway. Road transport is the economic winner – and a heavily male-dominated social sector.

As ports are localised in

attractive central city areas, there is much political interest in Norwegian ports in terms of shifting cargoes from road to sea, which is a tough task in practice. The Port of Oslo is situated in the middle of the capital, occupying very valuable property. As apparently everywhere in Europe, it is the urban planning fashion to recapture seafront areas for culture and recreation, housing and offices. The Port of Oslo is therefore at the centre of political interest. As a

consequence, port leadership is a political task, as well as a commercial one.

I have always thought that women should participate where important debates and decisions take place. Competence is not only exams. It is also gender, age, and upbringing. Variation is important, also in ports. Not the least, ports are fun! No day the same, always new challenges. Environmental issues are in focus, but it will be a challenge to overcome security and preparedness

to rule the day. Ports must be effective and serve their purpose – as a gate for cargo to pass through, not to get stuck in.

I look forward to the IAPH conference in Hamburg, a port from which we have a lot to learn.



Port of Oslo



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

Sakai Port Authority

Address: 215 Taishomachi Sakaiminato City, 684-0004 Tottori Pref., JAPAN
Telephone: +81-859-42-3705
Fax: +81-859-42-3735
E-mail: sakai-port@pref.tottori.jp
Website: http://www.sakai-port.com
Representative: Shinji Hirai, President

Associate member

Hyland Software

Address: 28500 Clemens Road Westlake, OH44145, U.S.A.
Telephone: +1-440-7885000
Fax: +1-440-7885100
E-mail: ray.schraff@onbase.com
Website: http://onbase.com
Representative: William Priemer, CEO
Nature of business activities: Software producer: products for capturing transport documents/data, automating port/terminal operations, and electronic record-keeping of trade/port/transportation documents.

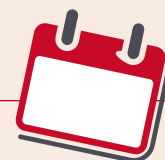
2015

2016

2017

Dates for your diary

A selection of forthcoming maritime courses and conferences



May

- 16-19:** PIANC AGA 2015, Porto, Portugal
www.pianc.org
- 18-21:** Breakbulk Europe, Antwerp, Belgium
www.breakbulk.com/events/breakbulk-europe/breakbulk-europe-2015/
- 18-29:** Strategic (Port) Concession, Policy & Management, London, UK
www.ttpminternational.co.uk
- 19-22:** INTERTANKO Annual Event, Athens, Greece
www.intertanko.com
- 21-22:** 2015 ESPO Conference, Athens, Greece
www.espo.be
- 25-29:** Port Equipment Management Course, Singapore
www.psa-institute.com
- 28-29:** 4th Black Sea Ports & Shipping 2015, Istanbul, Turkey
www.transportevents.com
- 28-30:** The AIVP Days, Dublin, Ireland
www.dublin.aivp.org

June

- 1-5:** The 29th IAPH World Ports Conference, Hamburg, Germany
www.iaph2015.org
- 1-12:** Seminar on Cold Chain Logistics, Antwerp, Belgium
www.portofantwerp.com/APEC
- 6-9:** Iran Sea Expo, Tehran, Iran
<http://iranseaexpo.com/en>
- 7-9:** CMI Colloquium, Istanbul, Turkey
www.cmi2015istanbul.org
- 9-10:** Dredging management, Wallingford, UK
www.hrwallingford.com/training
- 9-11:** TOC Europe, Rotterdam, Netherlands
www.tocevents-europe.com
- 11-12:** Seatrade Cruise Asia 2015, Busan, Korea
www.cruiseshippingevents.com/asia
- 15-26:** Port Policy, Governance & Stakeholders Management, London, UK
www.ttpminternational.co.uk
- 24- :** Certificate in Bunkering Operations & Management
www.loydsmaritimeacademy.com/FLR2493IAPH
*10% discount for IAPH members

Election results

As a result of elections held in March to select vice-presidents for three regions (Africa/Europe, Americas, and Asia/Oceania) in the next term, three new vice-presidents have been selected. At the Plenary Session of the Hamburg conference, Sié, Kalhagen, and Lino will be officially installed as VPs of IAPH.



Abidjan Port Authority

Africa/Europe Region

Hien Sié, managing director of Abidjan Port Authority, Côte d'Ivoire



Port of Longview

Americas region

Geir-Eilif Kalhagen, CEO at Port of Longview, USA



Indonesia Port Corporation II

Asia/Oceania region

Richard Joost Lino, president director at Indonesia Port Corporation II, Indonesia



Hamburg Port Authority

Calling at the smartPORT Hamburg

Finding the right balance between economy and ecology has become a key issue for ports all over the world, and the Port of Hamburg is tackling the challenge through intelligent port management solutions

“ We were able to increase productivity by more than 12% due to the use of smartPORT ”

Hamburg Port Authority (HPA) faces two major challenges: the close vicinity of the the port to residential areas and the high volumes of economic and transit traffic. Thus, the existing infrastructure facilities must be used intelligently and efficiently as space is limited.


HPA saw the opportunities offered by information technology early on and developed a long-term strategy – the smartPORT strategy – where ‘smart’ refers to the intelligent exchange of information to increase the quality and efficiency of the port as an important link in the supply chain – taking account of both economic and ecological aspects. A special focus of the strategy lies on infrastructure, traffic flows, and trade flows.

Establishing intelligent infrastructure is imperative to ensure smooth and efficient traffic flows and, ultimately, trade flows. Information technology, such as Bluetooth, hotspots or wi-fi, the cloud, mobile end-devices, the ‘internet of things’, and big data, plays a key role in implementing it.

Five years ago, measuring points were installed at all the major junctions in the port. Inductive loops and detectors accurately capture traffic volumes, the type of vehicles, and their speeds. Since 2011,

there is also a weight detector (weigh-in-motion) installed at our Köhlbrand Bridge, the most important east-west link within the Port of Hamburg. With this installation on bridges, we have been pioneers. More than 36,000 vehicles, roughly 12,000 of them trucks, use the bridge daily.

The data collected are transmitted to the Port Road Management Centre where they are processed to determine current traffic conditions on the port’s roads. This is merely the beginning of our efforts to establish a comprehensive traffic management system in the port. Hamburg’s smartPORT logistics substantially contributes to making our vision of a smart port a reality. In future, all modes of transport will be co-ordinated to improve the flow of information and, ultimately, traffic flows. In pilot operations, we were able to increase productivity by more than 12% due to the use of smartPORT logistics.

We will present more results of our efforts to become a smart port at the IAPH World Ports Conference that will take place on 1–5 June in Hamburg (www.iaph2015.org). 

Jens Meier

*Chairman of the management board
Hamburg Port Authority*

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D3378
Kalmar DRF450-60S5
Year of manufacture: 2010



D3399
Kalmar DRF420-60S5
Year of manufacture: 2010



D3247
Kalmar DRF450-70S5XS
Year of manufacture: 2007



DK069
Kalmar DRF450-70S5XS
Year of manufacture: 2007



D3408
Kalmar DRS4531-S5
Year of manufacture: 2006



D3131
Kalmar DRF450-70C5XS
Year of manufacture: 2005



D3376
Kalmar DRF450-60S5
Year of manufacture: 2003



D3404
Kalmar DRF100-54S6
Year of manufacture: 2008



D3410
CVS Ferrari F478.5
Year of manufacture: 2008



D3409
CVS Ferrari F478.5S
Year of manufacture: 2007



D3324
CVS Ferrari F479.5-S
Year of manufacture: 2006



D3374
CVS Ferrari F269.5
Year of manufacture: 2001



DK057
CVS Ferrari F198
Year of manufacture: 1997



D3329
CVS Ferrari F258.6
Year of manufacture: 2008



D3385
SMV 4535TB5
Year of manufacture: 2011



D3384
SMV 4535TB5
Year of manufacture: 2008



D3383
Fantuzzi CS45KS
Year of manufacture: 2004



D3393
Hyster H22.00XM-12EC
Year of manufacture: 2009



D3351
Hyster H16.00XM-12EC
Year of manufacture: 2007



DK038
Herbst - ATAIR HFH ATAIR IX D620
Year of manufacture: 2008



D3362
Svetruck 32120-47
Year of manufacture: 1999



D3389
Kalmar DC32-1200
Year of manufacture: 1991



D3407
Kalmar DCD150-12
Year of manufacture: 2003



D3328
CVS Ferrari F16
Year of manufacture: 2003



D3395
Hyster H16.00XM-12
Year of manufacture: 1999



D3397
Svetruck 13,6-120-32
Year of manufacture: 2008



D3255
Svetruck 13,6-60-30
Year of manufacture: 1996



EL4620
Hubtex EK5110
Year of manufacture: 2000



G0848
Hyster H9.00XMG
Year of manufacture: 2002



D3388
Kalmar DCE80-6HE
Year of manufacture: 2007



GK072
Hyster H7.00FT
Year of manufacture: 2007



EL4645
Hubtex MQ45
Year of manufacture: 2006



D3371
Manitou MRT3050
Year of manufacture: 2010



D3313
Manitou MRT1850
Year of manufacture: 2001



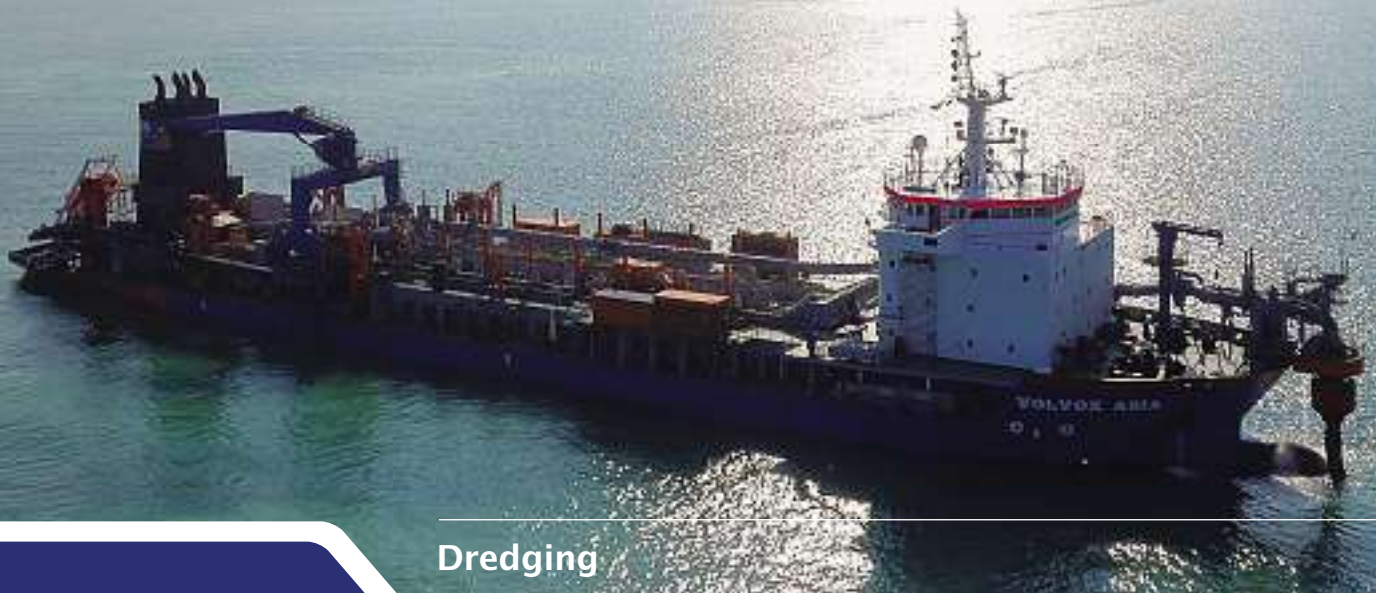
DIV1158
Kalmar TRX182
Year of manufacture: 2005



DIV1169
Terberg TT20
Year of manufacture: 1995

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

Marine ingenuity

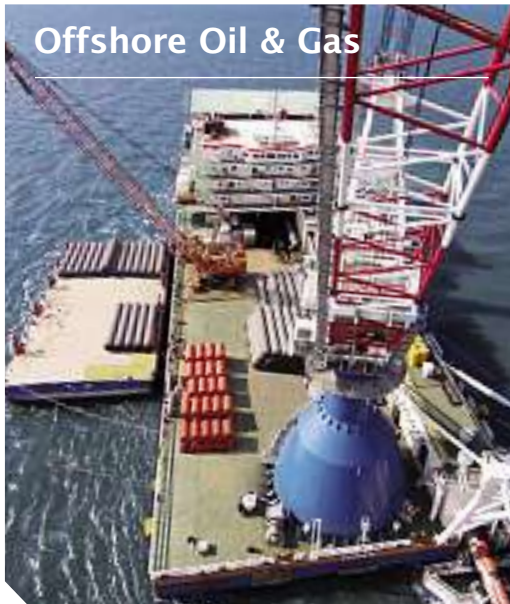


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