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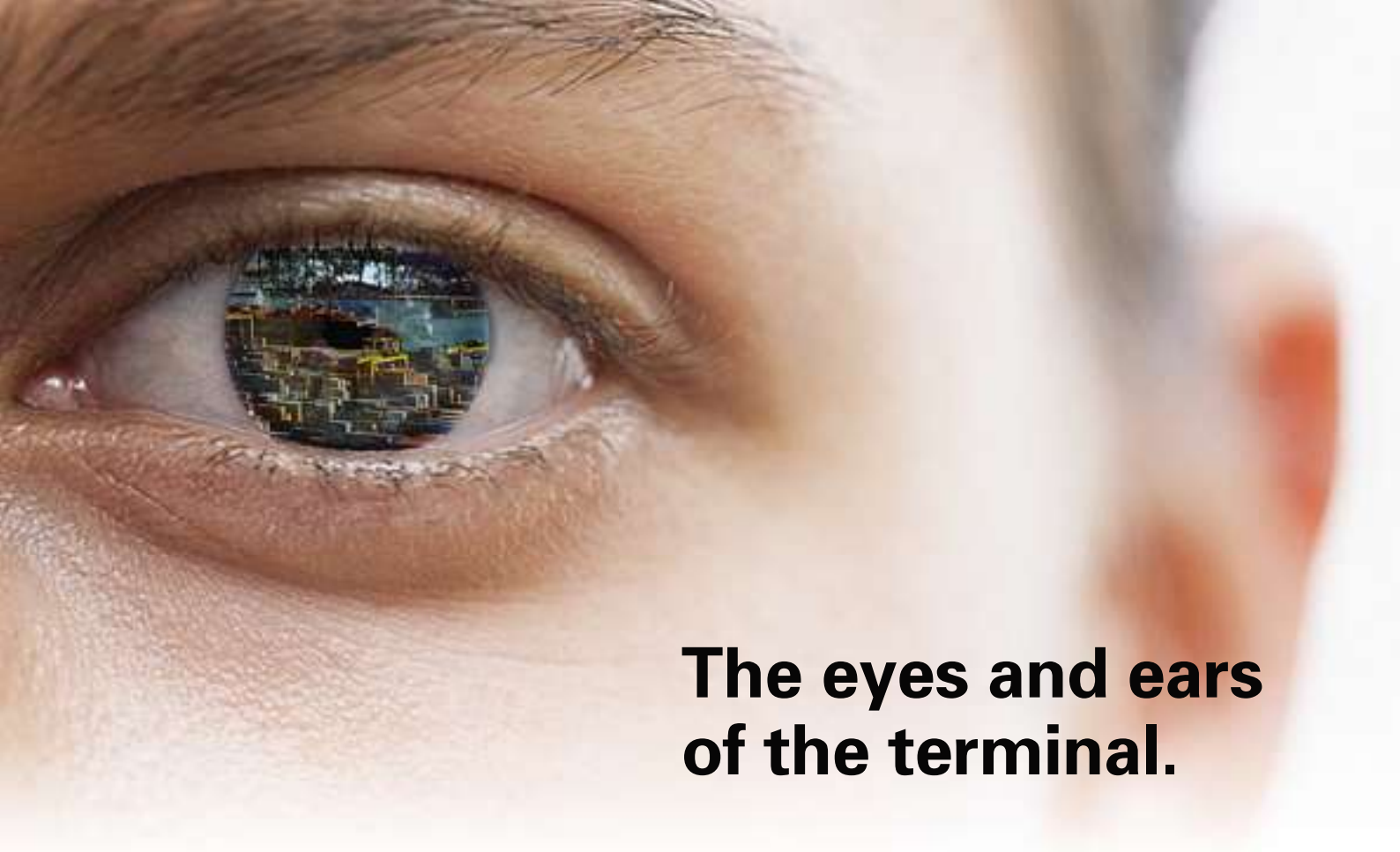
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Box ports warned of 22,000teu behemoths

A look into the future
'Flying spreaders' and self-repair machines

Servicing a windfarm
How ports can attract renewables business

Dragon's teeth

China sharpens up its container and
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China gives teeth to its long-term strategy to tackle oversupply at its container terminals and congestion at its dry bulk ports

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Colombo a great success

Secretary General Naruse looks back at Sri Lanka and ahead to Jerusalem

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



With more than 400 people participating in the port forum, the regional meeting in Colombo, Sri Lanka, was a great success. When President Mahindra Rajapaksa of Sri Lanka met IAPH representatives and forum speakers, he stressed that, to transform Sri Lanka into a regional hub of international trade and one of the economic nuclei of Asia, the country had invested a lot of resources on infrastructure development, in particular in seaports. Considering that the Port of Colombo has already made full and successful use of its strategic location, the strategy directed by President Rajapaksa certainly seems viable.

Although Asia is a growing engine of global economy, some countries in the region lag far behind the others: Myanmar is one of them. Myanma Port Authority (MPA) has started to upgrade its trading facilities by developing its major ports. As most developed economies prepare to lift the economic sanctions

imposed on the country, Myanmar will surely be able to develop its economy and international trade with technical and financial assistance from the outside world. I found its people disciplined and hard-working when I made a visit there and

more recently I welcomed the MPA chief executive in the Tokyo office, so I am confident that Myanmar will eventually make it.

The Long-Range Planning & Review Committee (LRPRC) has already achieved good results. Thanks to its strong initiative, more than 20 IAPH ports now post the IAPH logo on their homepages; the IAPH PowerPoint template was developed for future meetings; and more importantly, several alternatives for the new IAPH statements – Vision, Mission and Goals – were carefully selected for discussion at the Mid-term Conference in Jerusalem.

In addition to LRPRC, all the IAPH technical committees have provided agendas for discussion well in advance, which should arouse members' interest in these meetings. Since it was decided that non-member ports participating in the Jerusalem conference would be granted free membership for a year, it will be a good opportunity for those ports as well. As it will be an epoch-making event for IAPH, I would like to see all our readers join us in Jerusalem. PH

“Jerusalem will be an epoch-making event”

Port updates

APMT BOOMS IN CALLAO

Since assuming control of Callao's North Terminal in July 2011, APM Terminals has doubled crane productivity at the newly named APM Terminals Callao to 26.57 moves an hour per crane. Gate turnaround time has decreased by 49% to 28 minutes in the first 29 weeks of operation.

NEW ROLE FOR WUHAN

Officials in Wuhan have signed an agreement to create a state-owned shipping centre in the Chinese city over the next five years. The Rmb50Bn (\$8Bn) project will combine ship design and construction, equipment manufacture and port and logistics. The plan is for Wuhan to become the shipping hub of the River Yangtze.

INVESTMENT DILEMMA

Development financing in the Caribbean and Latin America for transshipment and other port facilities could be working against port expansion in the USA, a port executive has warned. At the AAPA conference in Washington DC, Jacksonville Port Authority CEO Paul Anderson pointed out that the Inter-American Development Bank, which finances such projects, receives most of its loan contributions from US sources.

SHARED SECURITY PLAN

Canada wants to extend a port security pilot programme between the US Coast Guard and the Royal Canadian Mounted Police to include all shared port areas between the two countries. Gary Doer, Canada's ambassador to the USA, said a scheme placing USCG and RCMP crews on the same ship is under way along the St Lawrence Seaway.

IRAN P&I REVIEW

The EU may review its hard-line strategy on P&I cover for vessels serving Iran, a shipping analyst said. "After taking a strict stance on Iranian sanctions, EU is now contemplating allowing insurance for vessels calling at Iranian ports. The softer view could indicate that EU is seeing the potential problems of excluding Iranian imports completely," said Erik Nikolai Stavseth, of Oslo-based Arctic.

Know-how deficit for Chinese wind

The first phase of China's biggest offshore windfarm opened in April off Rudong, Jiangsu province. Operated by China Longyuan Power, its 38 turbines should produce 100MW, growing to

150MW. By 2015, China's offshore windfarms are anticipated to be generating 5,000MW, increasing within five years to 30,000MW. Turbines for offshore power are expected to serve as a safety net for China's hard-hit shipbuilders.

In March, China's Ministry of Industry and Information Technology (MIIT) released its development plan for the shipbuilding industry during the current five-year plan, which ends in 2015. One of the plan's five focus

areas is offshore engineering, which MIIT sees as having great potential to satisfy growing demand. After oil and gas, wind power is the most important segment of the offshore industry.

The plan puts special emphasis on offshore wind power projects in Shanghai and the provinces of Jiangsu, Hebei, Shandong, Zhejiang and Guangdong. Most of China's offshore windfarms are located near large ports, which will be responsible for much of the growth in energy demand.

The global financial crisis forced officials and state-owned companies to look hard at ways of improving their efficiency and productivity, in which China usually lags behind South Korea, Japan and the West. Port planning

is a major consideration. The new approach to integrating port, logistics, industrial zone and city now includes power generation for the cluster that also satisfies green development aims. Offshore windfarms are being integrated into the latest port developments, such as the Rmb270Bn (\$43Bn) programme to promote Tianjin's Binhai New Area.

The biggest challenge at the moment is to develop these windfarms in a cost-effective way so they can compete with their land-based equivalents. Jianhua Bai, deputy chief economist of the State Grid Energy Research Institute, revealed that installing an offshore turbine, including connection to an onshore grid, accounts for almost 80% of the total construction cost, compared with 40% for a landside turbine.

Chinese project managers lack the knowledge and experience of their European colleagues, which puts them at a disadvantage in a fiercely competitive market. Overcapacity is already forcing prices down, leading to shrinking margins and some quality issues.

Against these drawbacks, sea conditions are generally less severe than in northern Europe, and construction and installation costs are being reduced through innovation, such as a specially designed 800-tonne crane barge that is expected to cut 25% off the installation cost.

Despite the various initiatives, however, China's offshore windfarms will have a hard time overcoming the dependency on key parts from abroad and China's lack of maintenance experience.



Illustration: Shutterstock

Elbehafen to be extended

Brunsbüttel Ports has chosen German construction company TAGU to extend its port of Elbehafen.

Brunsbüttel Ports will invest around €15M (\$20M) to improve the middle berth of the multipurpose deepwater port, located at the junction of the River Elbe and the Kiel Canal. The berth is used for bulk and general cargo and for project cargo such as wind turbines and other renewable-energy equipment. The port expects the upgraded berth to enable it to meet foreseeable demand for the next 40 years.

Construction began in April, with piling set for

completion by the start of 4Q/2012, while the quay and its railway tracks will be refurbished by early 2013. The berth will also be deepened, with the whole project being finished by 3Q/2013. The port will continue to operate during construction.

"We are pleased to assign TAGU as an experienced company that takes our needs as a port operator into account. For us its flexibility was of major importance to guarantee the ongoing operation of cargo handling with minimal disturbance," said Brunsbüttel Ports MD Frank Schnabel.

"Get ready for 22,000teu!"

A senior APM Terminals executive has called on terminal operators to start getting ready to accommodate 22,000teu container ships.

Crane and engineering services MD Halfdan Ross told the TOC Container Supply Chain Asia Conference in Hong Kong that feasibility studies were being carried out for 22,000teu vessels. "While none has been ordered yet, studies have been completed on the feasibility of constructing container ships with a 22,000teu capacity," Ross said, "so planning for crane and other infrastructure support to accommodate such vessels and their container volumes is a very necessary exercise for any major hub port."

"The point is that ultra-large vessels are already in service and even larger vessels will follow, so the time to prepare the necessary terminal and quay infrastructure is now," he added.

Meanwhile, BIMCO analyst Peter Sand told *P&H* that the arrival of *MSC Fabiola* at Long Beach on 16 March

is a test of the ability of US west coast ports to handle such large ships. He said: "The trans-Pacific trade would naturally be the first sector to cascade ultra-large container ships, because of the large volume of boxes and the long distance."

At 12,550teu, *MSC Fabiola*, a Peter Doehle-owned ship operated by Mediterranean Shipping Co, is the largest container ship to call at a North American port.

Sand added: "North American ports are getting ready to receive these ships, but there are still road blocks. Very large gantry cranes [with reach of 22–24 rows] and deeper ports are needed to get all the boxes off the ships quickly."

Only a few ports beyond the Asia–Middle East/Europe trading lanes can receive such big ships. "It's going to be very interesting to see the extent of cascading, considering that initially everyone thought the bigger ships would serve the Asia–Europe and Asia–Mediterranean lanes only," he remarked.

Global emissions regs needed

Ship emissions should be regulated at a global rather than regional level, the European Sea Ports Organisation (ESPO) believes. "It should be the IMO rather than the European Union that should be leading the way on tackling ship emissions. The risk is that introducing emission control at regional level will change trading patterns," ESPO policy adviser Antonis Michail said in March.

He warned that if the EU imposed emission controls unilaterally at its ports, shipping operators would probably shift their services to non-EU ports.

Michail was speaking at the PATCH (Ports Adapting to Change) conference in Zeebrugge, Belgium, to discuss the implications for ports of the emission control areas (ECAs) in the North Sea and Baltic, which take effect in 2015. He reported that the European Parliament's Environment Committee had produced a report on ship emissions in February calling for limits in the sulphur content of fuels that go further than those agreed by the IMO.

The shipping industry is opposed to more stringent controls, which it says will push up operating costs. Industry lobbyists



are expected to ask members of the European Parliament to modify the proposals before parliament votes on the report at its plenary session in late May.

ESPO advocates voluntary emissions practices at the European level, such as those of the World Ports Climate Initiative. WPCI projects include promoting greener ships and port equipment, LNG propulsion and onshore power supply. "Observing voluntary green practices will also convince regulators that shipping can regulate itself," he pointed out.

A study of Baltic ships presented at the Zeebrugge conference revealed that owners' lack of preparedness for the ECA rules

starting in 2015 could prompt a modal backshift in the region.

"Ro-ro business may face the greatest change in the Baltic, with cargo shifting to routes with a short maritime leg, causing increased congestion on roads in Poland and Germany," predicted Johanna Yliskylä-Peuralahti of the Centre for Maritime Studies in Turku, Finland. In northern Europe in general, maritime traffic is likely to shift to outside the ECA areas and from ships to road and rail.

The study also suggested that only 8% of Baltic vessels would be able to fit scrubbers. In terms of daily costs, the increase in the cost of fuel is expected to have the greatest effect on drybulk vessels.

Port updates

NUCLEAR CARGO ACTION

The maritime and trading community in Bremen/Bremerhaven, Germany's second-biggest port, may take legal action against a proposed ban on nuclear cargo. A legal opinion commissioned by the local chambers of commerce and industry concludes that the planned revision of the Bremen port statute would breach the constitution and federal law.

LONGER NORWEGENKAI

Extension of operational areas at the Port of Kiel's Norwegenkai Terminal has been completed. Kiel mayor Jost de Jager said: "The extension of Norwegenkai means that the potential of the [Schleswig-Holstein] state capital's port has been increased yet again. Urgently needed new interim stowage space is now immediately available to accommodate rising cargo traffic to and from Norway."

AZERBAIJAN PORT

Azerbaijan's issuing of a \$1.1Bn tender to build a port has attracted interest from France, the Netherlands and Sri Lanka. Designed by Royal Haskoning, it will be built in the village of Alat, about 66km south of the capital, Baku, a transport ministry official said.

SCI FORAY INTO PORTS

India's largest shipping company SCI has entered the port handling sector after winning a three-year contract to provide port and marine services at an LNG regasification terminal at Dabhol, Maharashtra state. The terminal is managed by government-owned Ratnagiri Gas and Power and the first LNG carrier berthed in early April.

RAILWAY TO NACALA

Kazakhstan-based Eurasian Natural Resources Corporation (ENRC) has released its plans for a railway line from the mining area of Moatize, Mozambique, to the port of Nacala. The *Dow Jones Newsletter* quotes ENRC GM Paul Craven as foreseeing 60M tonnes of coal using the line initially. Unlike Brazilian mining group Vale's intended rail route to Nacala via Blantyre, ENRC's trains would bypass Malawi and run wholly through Mozambican territory.

Cash & Cargo

MANILA TAX INCENTIVE

Manila North Harbor Port Inc, operator of Manila North Harbor, will benefit from a six-year income tax holiday in return for investing 170M pesos (\$3.9M) in modernising the country's largest passenger and cargo terminal. The company, which is a joint venture between Harbor Centre Port Terminal and oil refiner Petron, has a 25-year contract to develop the terminal.

HUTCHISON GAINS

Hutchison Whampoa, owned by billionaire Li Ka-shing, has seen its annual profits more than double after spinning off its container port business. The Hong Kong conglomerate said it made a profit of \$7.2Bn in 2011, compared with \$2.5Bn a year earlier. Hutchison Port Holdings Trust was listed in Singapore in March 2011, leading to a gain of \$5.6Bn, the company said.

ICTSI INCOME UP 33%

International Container Terminal Services Inc (ICTSI) reported consolidated audited financial results for the year ended December 2011, posting revenue from port operations of \$664.8M, 26% higher than the \$527.1M reported last year, and net income attributable to equity holders of \$130.5M, up 33% on 2010. EBITDA earnings for the Philippines-based operator were \$281.4M, representing an increase of 14% over the \$247.7M generated in 2010.

PORT HEDLAND CASH

BHP Billiton and its partners have approved \$917M in pre-commitment funding to construct an outer harbor facility in Port Hedland, Western Australia, with an annual capacity of 100M tons. The project is associated with BHP Billiton's WA iron ore operations. The company announced that its share of the total investment will amount to \$779M.

DOUBLE DIGIT FOR COCHIN

The Cochin Port Trust has achieved a 12% growth in the financial year 2011-12 to reach for the first time the 20M rupee mark (\$0.3M) in terms of the value of cargo handled annually. The port has achieved a throughput of 20.1M tonnes, the second highest growth rate among India's major ports.



Photo: Baskalis

Maldives dredging – port officials want to move the main harbor elsewhere

Maldives seeks outside investment

Port officials in the Maldives are taking a wait-and-see approach to development plans following the presidential coup earlier this year. "The new government has given assurances that all projects to improve the lives of Maldivians will go on," Maldives Ports (MP) CEO Hussain Hilmy told *P&H*.

The government is seeking a foreign investor to either help develop the main Malé port or relocate it to nearby Thilafushi Atoll, some 6km west of the main island, he explained. "The best option is to shift the port as soon

as possible," said Hilmy, who added that it was the only way to avoid the port becoming congested.

Four or five Asian companies have expressed an interest in the project, including one from the Philippines and two from Sri Lanka, he revealed. A preferred investor was to have been decided by mid-2012, but the coup has raised a question mark for candidates on the shortlist, despite government assurances that the project is continuing.

Malé moved 53,000teu and 498,000 tonnes of breakbulk cargo

last year, mainly vegetables, steel and timber. The 17,000 tonnes of exports are chiefly canned and frozen fish – the country's only sizeable outgoing trade.

Last year's growth was almost 10%. "We are hoping for the same growth this year and we are hoping it will be sustained beyond 2012," said Hilmy.

While growth is welcome, it exposes Malé's limitations. Congestion eased during the recession of 2009 and 2010 when import cargoes dropped by 30%. Another problem is the port's small dimensions, for it comprises a 100m quay and an east and west basin, both with quays of 140m. The 3.5m draught limits entry to ships under 15,000dwt. The port has two gantry cranes, eight mobile cranes and 70 reefer plugs.

Port officials indicated that security is a concern, as suspected Somali pirates have reached Maldives waters, sometimes starving and semi-conscious. The responsibility for dealing with such unauthorised incursions into Maldivian waters and with coastal surveillance is split between the Coast Guard and the Maldives National Defence Force.

An agreement was recently reached with the Somali government to return 37 detainees to Somalia, but the piracy suspects have refused to agree to being deported and they remain in the Maldives.

Co-operation with regional neighbours such as India was being discussed. "We have very good relations with our neighbouring countries," Malé harbour master Captain Rasheed told *Ports & Harbors*.

Port Klang introduces booking system


Port Klang Authority (PKA) has been operating a new booking system at the on-dock haulier depots in Westports since 1 February. The system will enable hauliers to manage their fleet deployment and depot operators their available capacity more effectively.

Six on-dock operators are participating in this system, with CMA CGM being the first to sign up together with its haulage service providers. Other participants are Al Marine Services, CWT Container Logistics, Hanjin Shipping Lines Malaysia,

Mediterranean Shipping Company and MOL.

The system is intended to cut turnaround times at the depots to 30 minutes, compared with up to two hours previously. By making appointments, haulage companies are able to plan the pick-up and drop-off times of empty containers at the depots.

Early indications are that numbers of bookings by hauliers have increased, which suggests that the 24-hour booking system has been well received by hauliers, depots and port users.

A portrait of Lars Meurling, a middle-aged man with dark hair, wearing a dark suit, white shirt, and patterned tie. He is looking directly at the camera with a slight smile. The background is blurred, showing what appears to be a warehouse or industrial setting with some equipment.

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Challenges for west Africa

Africa's natural resources have historically attracted bold investors, but now infrastructure projects and consumer markets are also proving to be magnets for foreign capital.

West African analyst for Control Risks Ashley Elliot told *P&H* that west African countries face unique and serious challenges. The biggest risk for shipping in the Gulf of Guinea is piracy, Elliott said. In recent years there have been increasingly aggressive attacks on general shipping (see p39).

He said that because of a lack of political and maritime security and regional co-operation, piracy is likely to remain an issue in the foreseeable future. "A partial exception is Ghana, which hasn't seen much piracy," Elliott added. "With the development of offshore industry, the Ghanaian government has also been developing its navy."

On land, Elliot identified poor regulation as a major risk: "Security isn't the biggest challenge for ports," Elliot told *Ports & Harbors*. "By far the biggest problems are underinvestment and bad regulation ashore." He said many countries allow too many government agencies to set up shop on the quayside: "They cause delays, but they are there to facilitate corruption. At Nigerian ports you would see not only customs but also 10–15 government agencies there, all of them acting in fairly officious and corrupt ways. That is something



Photo: Based Action Network

Workers unload imported televisions at the port of Lagos, Nigeria

has traditionally posed a problem to private terminal operators."

Nigerian maritime law firm Babalakin agrees. "The challenges in the Nigerian customs system are similar to those that befall most African countries," a Babalakin spokesman told *P&H*. The law firm cited "high levels of corruption and extortion" as well as "infrastructural decay and a dearth of suitable ship and cargo handling equipment" as the main challenges to port expansion.

Both the analyst and the law firm said privatisation of ports was the most significant development for logistics in the region. "Investments by terminal operators, as a result of agreements signed with government on the development plans in terms of cargo handling equipment and warehousing, will result in reduced dwell time," Babalakin maintained.

Companies trying to expand the Europe–west Africa trade could be hamstrung by European economic problems, however. The World Bank noted in January that African merchandise exports, tourism receipts, commodity prices and foreign direct investment "are all susceptible to a Euro area recession." European companies also face strong competition from emerging markets such as China and Brazil. Africa's largest lender, Standard Bank Group, reported in 2011 that it expected Chinese investment in Africa to reach \$50bn by 2015, a 70% increase on 2009 levels.

CMA CGM spokeswoman Marie Lopez told *P&H* that the Europe–west Africa trade hadn't enjoyed the recent growth of the Asia–west Africa trade. "Trade is still subject to several severe operational obstacles", she said.

Dar profits from Mombasa snarl

Tanzania's port of Dar-es-Salaam has benefited from recent chronic congestion at the main Kenyan cargo hub Mombasa, as both importers and exporters seek alternative routes to expedite their cargo.

According to Dar-es-Salaam port manager Cassian Ngamilo, the Tanzanian facility has increased the number of containers it has handled recently as some importers divert from Mombasa. In 2011, the Tanzanian port handled a total of 475,000teu, compared to 415,000teu the previous year.

The increase in cargo handling was achieved by increasing berthing capacity at the port to allow up to six container ships to discharge goods at the

same time, up from the previous maximum of five.

Ngamilo ascribed congestion in east African ports to their limited handling facilities, but added that Dar has a geographical advantage for importers to Zambia, Democratic Republic of Congo, Uganda and South Sudan. "Although the road from Mombasa to Kampala is shorter, Dar will stand a better chance for Uganda cargoes once the road between Mwanza and Bukoba is completed," he told Kenya's *The Standard*.

Tanzania Ports Authority plans to expand Dar-es-Salaam port by building two more box handling berths, dredging the entrance channel and developing a large inland cargo hub at Kisarawe.

People

QUIJANO PANAMA BOSS

The board of directors of Panama Canal Authority (ACP) has appointed Jorge Quijano, EVP of engineering and programme management, as Panama Canal administrator. He succeeds Alberto Alemán Zubieta, whose 16-year term at the helm of ACP ends on 3 September.

CASTAING AT STX

Port of Le Havre director-general Laurent Castaing has been appointed general manager of leading French shipbuilder STX France. Castaing, who succeeded the company's general manager Jacques Hardelay in February. This is a return to STX France for Castaing, who was industrial manager and deputy general manager from 1998 to 2004.

MARTEL FOR LE HAVRE

Hervé Martel has been appointed chairman of the board of the Grand Port Maritime du Havre. He has been the executive director of Ports de Paris since September 2009.

HELSINKI SHUFFLE

The Port of Helsinki shuffled its management from 1 March. The organisation now has two business units: Vuosaari Harbor, led by Jukka Kallio, and Passenger Harbors, headed by Kari Noroviita. The support functions are administration and finance, technical services, and marketing and communications.

WIDDOWS TO RICKMERS

Ron Widdows, former CEO of Neptune Orient Line and APL, has been appointed to head Rickmers Holding and shipping company Rickmers-Linie. He has taken over from Jan Steffens, who stepped down at the end of March but will serve on the Rickmers Group advisory board. Widdows is chairman of the World Shipping Council.

MÆRSK M MØLLER

Mærsk Mc-Kinney Møller has died at the age of 98. He was chairman of the board of shipping group AP Møller. He became CEO and chairman of AP Møller-Mærsk Group on his father's death in 1965.

Dredging

ELBE GO-AHEAD

After environmental consultation, Lower Saxony's state government has approved the deepening of the River Elbe for ultra-large container ships calling at the port of Hamburg.

INDIA'S DEEPEST

Krishnapatnam Port has completed dredging down to 18m – the deepest draught of any Indian port. When commissioned in 2008 its depth was just 10.5m. The port can now accept much bigger deepsea container ships.

NEW PRIOK BY 2017

Pelindo II (now known as Indonesia Port Corporation) says the expansion of Tanjung Priok Port, involving construction of the Kalibaru terminals and deepening to 16m, will start this year and be completed by 2017.

New government faces reef questions

Queensland's new conservative government has yet to outline how it will manage the impact of port development on the Great Barrier Reef. The issue was a major subject of debate in the Australian state's election campaign.

The Liberal National Party (LNP) won a landslide victory in the 24 March state election. The election took place amid rising pressure from green and community groups over concerns that rapid port development in Queensland was posing a threat to the reef. The development of the Curtis LNG project at Gladstone and the massive expansion of the Abbot Point coal port are at the centre

of the debate (see also p28).

Before the poll, the federal and Labor state governments joined with the Great Barrier Reef Marine Park Authority to announce a review of the development pressures on the reef. The LNP state government has yet to say whether it will support the review, although in an assessment of the major parties' election platforms carried out by conservation organisation WWF, the LNP was rated worst on its measures to reduce reef pollution.

The federal government is keen to place limits on development as a way of protecting the reef. In March, it required Rio Tinto to

include the impact of related shipping on the reef in its proposal to extend bauxite mining near Weipa in Queensland. The plan was already undergoing federal environmental assessment when environment minister Tony Burke announced the changes.

"Following a request to reconsider the decision on the basis of new information about proposed shipping activities in the Great Barrier Reef Marine Park, I have revoked the original referral decision and substituted it with one that takes the reef into account," Burke announced.

Rio Tinto countered that it had been upfront about the potential for an increase in shipping activity and there was no new information that justified changing the rules. It said there would be no increase in shipping movements through the reef because mine-related traffic would bypass it to the north.



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Myanmar seeks to end isolation

Myanmar's ports policy is evolving fast as the southeast Asian country begins to embrace reform and becomes more involved in the international trading community.

Myanmar has just five significant ports – Yangon (including Thilawa), Sittwe, Patheingyi, Mawlamyine and Myeik, all administered by Myanmar Port Authority. They serve a country that is as large as France with a population of 56 million.

The largest port, Yangon (formerly Rangoon), is 40km upstream on the River Yangon. "For all vessels calling at Yangon Port, pilotage is compulsory if they are over 200grt," the MPA's website states. Another limiting factor is Yangon's 9m draught, which restricts access to vessels of



Photo: Joachim Affeldt

Last-century unloading methods are still common at Yangon port

a maximum 15,000dwt and 167m in length. Even so, it handles some 90% of Myanmar's foreign trade.

In anticipation of a boom in foreign trade once international sanctions are lifted, investors are keen to improve the country's other ports.

A recent trade deal with India has encouraged investment in the north of Myanmar. The two countries have set a target of nearly doubling bilateral trade to \$3bn by 2015. An investment of \$120m has been earmarked for new facilities at Sittwe port and creating a multimodal transport corridor linking it with India's far northern provinces. The aspiration is to see this finished by next year.

Once the necessary extensive dredging and new terminals have

been completed, the port and corridor will give India greater access to its own northeast region, an area that has been cut off from the current economic boom in India because of its remote location beyond Bangladesh.

Also in the northern province, a private Chinese company is investing in the development of a deepsea port facility at Kyaukphyu, for which a large special economic zone (SEZ) is planned. Two other SEZs are planned in areas behind Thilawa and a new deepsea port at Dawei.

Leading Indian energy companies, including ONGC Videsh, Gail and the Essar Group, have also announced that they intend to up their stakes in Myanmar's oil and gas sector.

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Hazards in the container stack

ILO transport specialist **Marios Meletiou** explains the recent steps the organisation has taken to make container transport safer

Many accidents in the supply chain are attributed to poor practices in packing containers. This has caused major concern particularly because the victims can be the general public, transport and port workers or their employers, who have no control over the packing of containers.

In July 2006, a truck was transporting a 28-tonne container containing dry wood in an Asian country. As it made a right-hand turn at a junction while travelling at 40km/h, it overturned. A person waiting at the traffic lights was crushed to death.

In May 2009, another truck in an Asian country transporting a 19-tonne container containing coffee beans overturned along the left curve of a harbourside road while travelling at 40km/h. The driver was killed.

Could these and similar tragic work-related accidents in the supply chain have been avoided? The International Labour Organization (ILO) believes that every work-related accident, including those in the supply chain, can be avoided. This is why the ILO has initiated, and will continue to undertake, major activities that help reduce work-related accidents in the supply chain that are attributed to poor practice in packing containers.

Safe container packing is a topical issue in the transport sector, one of the most important economic sectors and the bedrock of the supply chain. For this reason, international bodies, governments, the private sector and transport workers' organisations continue to introduce measures and implement policies to improve the efficiency of the supply chain.

While acknowledging the importance of efficiency, equal importance should be given to safety of transport and the supply chain. The consequences of unsafe practices are not only human suffering and physical damage but also the erosion of most of the gains of efficient supply chain operations. So there is an urgent

need to intensify the efforts to address all safety issues pertinent to the supply chain.

More than ever before, governments and other bodies share the ILO's position that health and safety issues are an integral part of a package necessary for improving the supply chain. This has recently led to new initiatives on safety in relation to the packing of containers and port worker training that will strengthen the capacity of all the stakeholders in the supply chain.

The most important port-related training package is the ILO's Portworker Development Programme (PDP), comprising 30 training units offering around 1,000 hours of training (mainly on container terminals) and available in nine languages. Recently, a new version of the PDP (Revision 3, 2011) was published.

A recent ILO activity was the Global Dialogue Forum on Safety in the Supply Chain in Relation to Packing of Containers, held in Geneva in February 2011. Its purpose was to reach a common understanding on the packing of containers and a better grasp of the reasons for poor practices that result in industrial accidents. The forum took into consideration a background report prepared by the ILO entitled *Safety in the supply chain in relation to packing of containers* and adopted 'points of consensus' in relation to the subject matter.

Several of the points that were made at the forum referred to training. One of them emphasised that the need for training and awareness is not limited to developing countries but applies as well to many enterprises in developed countries. Guidelines and training materials should especially be targeted at supervisors who might not be familiar with good practices in packing containers.

The ILO, along with the IMO and the UN Economic Commission for Europe (UNECE), is playing a leading role in the updating of the 1979 IMO/ILO/UNECE *Guidelines for packing cargo transport units (CTUs)*, which will be elevated



“ Every work-related accident can be avoided ”

Marios Meletiou

Transport specialist, ILO



Photo: ILO

in the port sector. These state how to implement competency-based training in the port sector, which would be an ideal approach to address concerns over the packing of cargo in CTUs.

Once the IMO, ILO and UNECE have adopted the COP, it is important that all stakeholders in the supply chain help raise awareness on all issues pertinent to safe packing of containers and also actively promote the COP. This should be followed up quickly by the updating of existing training materials, translating the COP and training materials into as many languages as possible and ensuring their effective implementation, starting by training local instructors at national or enterprise level.

These follow-up activities should focus both on the development of the relevant cognitive and psychomotor skills and, more importantly, on developing an appropriate attitude among those involved in the packing of containers, particularly the supervisors who will undertake the final check and certify that a container is able to start its long journey without any inherent safety risk at any leg or point of the supply chain. The major challenges will be to develop the technical capacity to pack a container safely and to engender the appropriate culture of responsibility and accountability within management, workers and supervisors of companies engaged in packing CTUs, which together should result in a safer supply chain.

It is hoped that the ILO's contributions to safety in the supply chain outlined in this article will strengthen the capacity of governments, employers' and workers' organisations and other supply chain stakeholders to develop and implement the policies and measures that would improve safety, efficiency and effectiveness of supply chain operations as well as of the living and working conditions of supply-chain workers. **PH**

More info: www.ilo.org

the ILO, IMO and the UNECE a draft and recommend for adoption a non-mandatory code of practice. Subject to approval, the code is expected to be published and made available in 2013.

The introductory part of the COP is expected to provide information on other relevant regulations and conventions, important requirements (dos and don'ts), consequences of badly packed and secured cargo, CTU properties and general transport conditions.

Reflecting the points of consensus unanimously adopted

by the February 2011 Global Dialogue Forum, the COP will place special emphasis on training on the packing of CTUs. The chapter on this subject is expected to cover regulatory authorities, management, personnel, implementation of training and an overview of the recommended course syllabus.

This guidance will be supplemented not just by the existing PDP training materials but also by the recently developed ILO *Guidelines on training*

to a non-mandatory code of practice (COP).

This work, an important activity for the supply chain, is being undertaken by a group of experts that was established in October 2011 and is jointly supported by the secretariats of the ILO, IMO and UNECE. As a participant in the group, IAPH plays an important role in the development of this code.

The group is expected to complete its work by the end of this year, when it will submit to



Photo: Antwerp Port Authority

Aerial view of
Antwerp's AMORAS
consolidation site

Photo: Tony Slinn

Dredging gantry at the
consolidation site

Sustainability and sediment treatment

Different ports have different problems and different approaches to dealing with both clean and contaminated sediment – **Tony Slinn** and **Bert Visser** visit Antwerp, Hamburg and Rotterdam

The Flemish regional government's AMORAS project in the Port of Antwerp opened officially in December 2011 and has lessons for ports around the world.

AMORAS is the Flemish acronym for Antwerp Mechanical Dewatering, Recycling and Application of Silt and, put simply, it treats and stores up to 600,000 tonnes of dry solids material dredged annually from the port. But it's much more than that, as Guido Everaerts and Maarten Van Esbroeck of the Flemish regional administration pointed out during a tour.

Antwerp was running out of options for the disposal and placement of the large amount of material it has to dredge every year. "We were reaching saturation point on such storage techniques as placement in quays on land or in underwater cells," port spokeswoman Annik Dirkx told *Ports & Harbors*. "In any case, these techniques were becoming unacceptable from a

social and environmental engineering standpoint."

The port and the regional government began looking at alternatives back in 1997. "The first feasibility studies looked at dewatering *versus* lagoons. Lack of space as well as cost decided in favour of dewatering," Everaerts said. "Pilot projects for belt or filter press dewatering followed and we decided on the latter."

Site engineer Van Esbroeck explained the process that was finally chosen. Initially, clean dredged material is placed in a 300,000m³-capacity underwater cell. It is removed by the port's cutter suction dredger *Amoris* and pumped to an onshore plant where sand is separated by means of hydrocyclones and recovered. The remaining fine silt is pumped to a four-cell consolidation site – perhaps the most striking feature of AMORAS – then mechanically dewatered with membrane filter presses.

The filtrate water is purified in a dedicated facility



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before being discharged, while the pressed filter cakes are stored under controlled conditions in a site near the dewatering plant. The intention is that these filter cakes will be beneficially reused.

"Contaminated material is brought by barges, sucked out by *Amoris* from the barge and piped straight to a cell (always the same one) at the consolidation site," he added. Given that about 20% of Antwerp's dredged material is contaminated – "mostly by PCBs, mineral oils and heavy metals", according to Everaerts – a distinction is made between non-contaminated and contaminated matter when the cakes are stored, the latter being hermetically sealed in their own dedicated area to prevent any soil contamination.

What next? The Flanders government and the Antwerp Port Authority are working with private companies Wienerberger, Argex and De Rycke Concrete, plus the Flemish Institute for Technological Research, the Belgian Road Research Centre and the Belgian Building Research Institute, to investigate the extent to which the filter cakes can be reused.

There's a Dutch saying *dweilen met de kraan open*: mopping while the tap's running. In the early 1980s, the Port of Rotterdam Authority (PRA) decided to identify and classify sources of contamination in Rotterdam's rivers, not only in the Netherlands itself, but farther upstream in Germany and France. The result was a two-pronged attack on contaminated sediment, tackling both the source of the problem and approaching those responsible and persuading them to make major reductions in their discharges.

The latter demanded an enormous effort in diplomacy and negotiations, but was enshrined in the 1984 Project Onderzoek Rijn (POR – Rhine Research Project). Conscious that the POR mission was not going to solve the contaminated sediment problem immediately, and with co-operation from the Dutch government, PRA decided to build a large-scale contaminated sediment disposal facility – the Slufter.



Photo: Tony Slinn

Excellent site for a windfarm

AMORAS costs

- Total – €482M (\$630M) includes construction and 15-year operating costs, plus the cost of financing and VAT
- Construction – €118M, of which the Flanders government paid €46M with the €72M balance financed by the contractor, to be repaid during the operation phase
- Operation – €29M annually, of which €22M is for actual operations, €7M for financing repayment.

Completed in 1987, the Slufter had an inaugural 150M m³ capacity that was expected to be completely filled by 2003. But the POR mission proved so successful that the big reduction of contaminated sediment occurred earlier than anticipated. At the moment, the Slufter is about half-full and its management has decided to open it up for sediment from outside the region. Material from the North Sea Canal and Germany's Port of Bremen was recently placed there.

Meanwhile, POR became POR II as it became clear by the end of the 1990s that the problem had shifted with respect to the kind of contaminants found. Studies carried out in 2000 and 2001 showed that although the quality of the water and sediment in the port and its rivers had greatly improved, there remained a problem with contaminants originating from 'diffuse sources'.

POR II has been set up to tackle this problem, which includes, among other contaminants, tributyltin (TBT) from ship's hulls and those that reach the water by air, mostly originating from emissions by industry, ships and cars.

The port authority reckons that by 2015 the problem of contaminated sediment will be a thing of the past. **PH**

Carry on cleaning up the Elbe

Dredging at Germany's largest port dates back to the early 19th century when excavated material was put to beneficial reuse either for agricultural purposes or for upgrading and landfilling.

Pollution of the River Elbe put paid to that method of disposal in the late 1970s, when ecological degradation at former dredged material disposal sites became apparent, leading to major problems in the 1980s. Plant uptake of contaminants and seepage from unconfined disposal sites – with the potential to endanger Hamburg's drinking water supplies – were particular worries.

The result was the dredged material research programme, Baggergut- Untersuchungs-Programm (BUP), covering every aspect of dredged material management. The initial twin priorities of the BUP were how to deal with the old disposal sites and

coping with the future pollution problem. The latter was always going to be long-term, but it had to be the correct, sustainable decision.

Within a decade, treatment and disposal strategies were radically transformed into a sophisticated, high-tech approach that cost the port around \$50M annually even then. At its heart is the METHA plant for mechanical treatment of harbor sediments, an AMORAS forerunner inaugurated in 1993.

Dredged sediment is fed to METHA by barge-unloading dredgers, with coarse impurities separated out. Next, any particles larger than 10mm are sieved out and the remaining fine-grained sediment is mixed thoroughly in a homogenisation tank and then pumped into the two-stage separation plant.

But it will not last forever and Hamburg has already embarked on a far more sustainable 'clean up the Elbe'

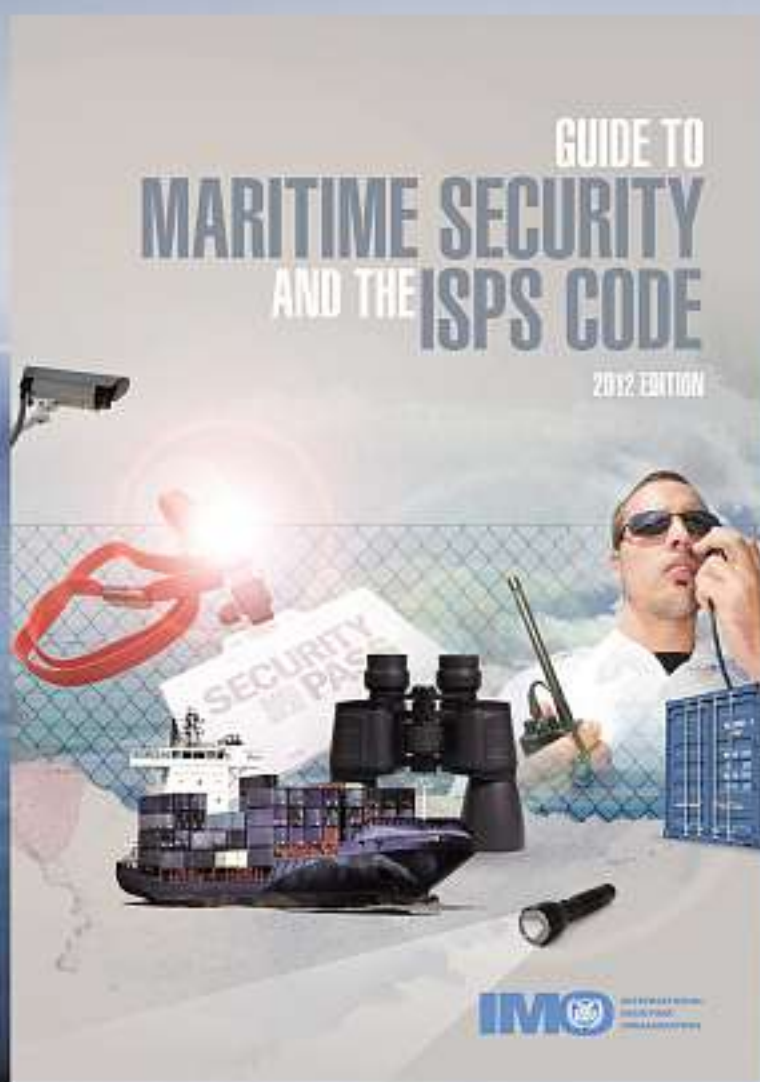
strategy. This was detailed by Hamburg Port Authority's Tidal Elbe Project head Manfred Meine at the 7th International SedNet conference in Venice last year. He listed three cornerstones for the action plan:

- Attenuation of tidal energy through river engineering in the mouth of the estuary
- More room for the river in the upper section, involving creation of tidal landscapes for windfarms and leisure along with a tidal polder and storm surge relief measures
- Optimisation of sediment management that takes the entire Elbe system into account and with remediation projects in the catchment area.

Progress is being monitored by the International Commission for the Protection of the Elbe River, which at its October 2011 meeting agreed an Elbe monitoring programme for 2012.

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Photo: Bert Visser

Kenya doubles its prospects

Anticipating a central African trade bonanza, Mombasa has invested in an extensive dredging and construction programme to double its container capacity. **Bert Visser** dons his hard hat for a site visit

The cutter suction dredger *Athena* operating off Mombasa

Kenya's major seaport, Mombasa, is carrying out important dredging and construction work as part of a series of projects to increase the port's container handling capacity and to enable calls by larger vessels, both in respect to length and draught.

Mombasa, which is managed by state-owned Kenya Port Authority (KPA), is probably the port that has shown the most significant improvement in the PMAESA (Port Management Association of Eastern and Southern Africa) region in the wake of the recent global economic crisis. In 2011, a total throughput of 19.95M tonnes was reached, very close to the estimated port capacity limit of 22M tonnes. With respect to container traffic, 770,804teu was handled in 2011; a remarkable performance in view of the design capacity of the port, which is only 250,000teu.

Unlike many other ports where container terminals are operated by dedicated private companies, container handling in Mombasa is carried out by the port authority itself. The fact that the port was able to handle many more containers than the existing design capacity is testament to the flexibility and ingenuity of the KPA's management.

The authority's strategy allowed for maximum flexibility by making use of the total quay length of the port, for example by having container vessels loaded and unloaded at general cargo berths. In these cases a certain degree of inventiveness was

required, such as deploying vessels' own cranes for loading and unloading.

Another important measure was the contracting of private companies outside the port to take charge of the onward handling and storage of containers. This allowed containers to leave the port area immediately after being unloaded, taking pressure off the port's own facilities and handling space.

Although these solutions have helped KPA deal with recent increased demand, they are not sustainable in the long term, particularly taking into account the anticipated growth in trade not only in the port's immediate hinterland, but also farther inland in Uganda, Rwanda, northern Tanzania, Burundi, DR Congo and to some extent South Sudan and Ethiopia. Political and economic developments in these countries are such that a substantial growth in cargo traffic can be expected.

KPA is well aware of these trends and has decided to implement three projects that would create a solid base from which it can cope with the demand for more handling capacity and the ability to accept larger ships. These are extensive dredging work, the construction of a longer container berth and a new terminal (see box).

To enable larger vessels to reach the port, KPA has undertaken a dredging project that chiefly involves deepening the main navigation channel in the port

from 13.5m to 15m, but also involves expanding the channel at its shallowest point to a width of 300m. This deepening project was initiated with a feasibility study carried out by Japan Port Consultants in 2007. The contract for the work was awarded to Van Oord Dredging and Marine Contractors, which started work in June 2011.

As part of this project, dredging will also take place in the outer access channel to the port, a turning basin, berths 4 to 18 and the access channel to, and future berths of, the new container terminal.

The berths of the existing container terminal have been dredged to a depth of 11m and the outer access channel to 15m. In addition, the berths of the new container terminal will have a draught of 15m alongside. The turning circle has also been dredged to a depth of 15m and a diameter of 500m.

For this project, Van Oord mobilised the trailing suction hopper dredger (TSHD) *Volvox Delta* and the new and powerful self-propelled cutter suction dredger *Athena*.

In total, some 7M m³ of material had to be dredged, of which 6.5M m³ was soft material and 500,000m³ hard material, mainly coral.

The 6.5M m³ soft material was dredged by *Volvox Delta* and placed at an offshore deposit site. The hard material was first crushed by the *Athena* and then re-handled by the TSHD and pumped ashore as the first part of reclamation for the new container terminal. The dredging works are expected to be completed by April.

One of the two landside projects was to lengthen the quay wall of Mombasa's existing container terminal. With a length of 600m, this facility was originally designed to receive three container ships

Box capacity to double

Although the construction of Berth 19 is expected to give Mombasa some immediate relief, the real boost will come from a new container terminal, construction of which is expected to span 2012 and 2019.

Made possible by financial aid from the Japan Bank of International Co-operation, the realisation of this new terminal will enable Mombasa to handle the latest generation of container vessels. It is designed to give KPA an additional annual 1.2M teu handling capacity, more than doubling the existing potential throughput.

To accommodate the terminal, around 50ha of land will be reclaimed west of the existing Kipevu Oil Terminal in an area known as Port Reitz. The new terminal will have three deepwater berths – Berths 21, 22 and 23 – with a total quay length of 900m. The depth alongside these berths will be 15m. Furthermore, an additional Berth 20 will be created at the terminal with 12m draught alongside.

The first phase of the construction, consisting of two berths with a total annual capacity of 450,000teu, has been awarded to TOYO Corporation of Japan and is scheduled to be completed by 2016.

After this, two more phases are planned for completion in 2017 and 2019, but these phases may be combined depending on the way that container traffic develops in the coming years.

of up to 180m in length concurrently. However, with container vessels growing in size over recent years and the average length of vessels calling at Mombasa reaching 200–225m, KPA judged it necessary to increase the length of the quay wall by 240m.

Known as Berth 19, the additional length of the quay wall will enable the terminal to accommodate three vessels of up to 235m each at the same time.

The quay lengthening work, carried out by contractor China Road & Bridge Corporation, is expected to be completed by the end of 2013. **PH**

The trailing suction hopper dredger *Volvox Delta* pumping ashore



Photo: Bert Visser



Image: Cargotec

Brave new ports world

From container terminals run by artificial intelligence to 'flying spreaders' and self-regulating machinery, the port of the future will look and run very differently from today, say those behind Cargotec's Port 2060 project. **Stephen Cousins** reports

Container vessels could be fully automated and powered by alternative energy sources such as solar power

As the global ports industry grapples with economic uncertainty, this seems the ideal time to put worries aside and indulge in a little future-gazing...

By 2060, containerisation will be 100 years old and, given the incredible technological advances that have already taken place, from fully automated terminals to all-electric cranes, it's exciting to contemplate the new technologies and work processes that may be transforming the industry in 50 years' time.

The Port 2060 project was set up last year by equipment manufacturer Cargotec as an attempt to understand what the terminal of the future might look like. It asked experts in computing, logistics, security and sustainability to highlight the technologies, processes and concepts that might underpin the future of containerisation and generate better terminal efficiency and operational performance.

"We let our imagination loose and came up with some realistic, and some less realistic, ideas," explained Ismo Matinlauri, senior vice-president for port cranes at Cargotec, who headed the project. Far-out ideas considered included airships designed to lift and transport containers and container yard trucks

powered by magnetic levitation instead of wheels.

Some flights of fancy turned out to have real potential, he told *Ports & Harbors*. "I have always been fascinated by writer Arthur C Clarke's concept of the space elevator, a 36,000km-long elevator that can lift people into a geostationary orbit. If built, the lift would require an ultra-tough continuous cable and I was surprised to read that very long cables made of microscopic pure carbon nanofibres have already been developed," he said. These super-durable, high-capacity cables could be used in 'flying spreader' cranes to load and unload feeder vessels, even at short notice. By 2060, container crane lifting capacities could increase from around 40–100 tonnes today to 1,000–2,000 tonnes, enabling them to handle much larger container packages in a single lift.

Terminal automation has already transformed operational efficiency, but in 50 years computerisation will have moved on to the extent that port systems will utilise artificial intelligence (AI) to monitor port processes and thereby optimise their performance.

Even today, the core of any successful automated terminal software solution is its ability to handle the exceptions that appear during operation, but



Bye bye diesel

Port operations involve the moving and lifting of heavy goods and therefore require a great deal of power. But by 2060, stringent carbon reduction targets will mean that ports either have to be more fossil-fuel-efficient or use alternative sources of energy. The move towards electrification of vehicles and plant will continue, believes Cargotec's Matinlauri. "When battery technology has moved on to the point where charging times are reduced and batteries don't need replacing so regularly, even the largest STS and RTG cranes will be using all-electric power. Diesel engines will be phased out entirely," he predicted.

Many cranes will be fitted with energy recovery systems, which harvest excess energy produced during hoisting and lowering manoeuvres and switch it to provide supplementary power. Steel, rubber and electrical components in machinery will also increasingly be recycled and it may be that in future crane chassis are kept in service for much longer and intermittently retrofitted with new electronics and guidance systems etc to improve their performance.

Ships serviced by 'flying spreaders' and maglev trucks

if software has the ability to learn, it can adapt and improve its behaviour based on the history of its previous actions.

This means the fully automated terminal of 2060 would rarely suffer from traffic congestion or accidents, the supply chain would be fully integrated and all vehicle movements co-ordinated to maximise efficiency, said Matinlauri: "A spreader will never be empty when going back and forth, truck loading and unloading will be more efficient and smooth."

In a similar way, AI will be installed in port equipment, including cranes, to give the machines the ability to self-monitor wear and tear, diagnose any problems and order maintenance and repairs remotely.

By 2060 the concept of 'ubiquitous computing' – whereby information processing will move from the desktop computer to become thoroughly integrated into everyday objects and activities – will become the norm, said Matinlauri. "Every container will be fitted with a radio-frequency identification [RFID] system, linked to internal sensors that keep a record of what's inside the container, the temperature, weight, when it was last opened etc, and this information will be communicated to the terminal operating system."

In addition to improving security dramatically, such RFID-tagged containers could help optimise container loading and unloading because crane operators will automatically know which container to lift in order to distribute the vessel load equally on the ship or to optimise stacking in the container yard.

Increased automation is likely to result in less dockside labour, so fewer safety concerns will arise. It would encourage a shift from a need for physical labour to the IT skills needed to run system software. In an extreme scenario, multiple terminals could be monitored and controlled from a single remote site.

Noise pollution – a real problem for ports in cities or near residential areas – could be avoided in future through the use of variable-speed hoists on cranes, which slow down as the container is placed on ground, avoiding loud bangs.

The effects of noise and pollution on portside communities, coupled with the associated escalation of land-bound traffic, could even result in the offshore relocation of ports, said Matinlauri: "We came up with concept of floating offshore mega-terminals or smaller floating terminals, which are able to move every so often if necessary."

If the concepts detailed here are difficult to get your head around, consider the possibility that our concept of 'hardware' might need to evolve and adapt in future. The basic idea of container shipping hasn't changed much in the past 50 years; it's still about ships, cranes and containers, but it's possible that by 2060 the way we move containers from ship to shore could have changed entirely. Cargotec said that it will analyse feedback on its Port 2060 website and produce a summary of its findings in due course. **PH**

More info: www.cargotec.com

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Making safety second nature

The Port Equipment Manufacturers Association is developing industry guidelines on safety. *P&H* talks to the vice-chairman of PEMA's safety committee, **Stephan Stiehler**, to learn more about the issues involved

While ports have become substantially safer over recent years, the fact that accidents persist – at great cost in terms of injury and loss of life, equipment damage and reduced productivity – remains a concern. PEMA's initial publication on port safety standards, *Recommended minimum safety specifications for quay container cranes*, a joint initiative with partners TT Club and ICHCA International, was published in June 2011. The recommendations prompted considerable feedback and discussion.

"We were extremely encouraged by the response. It signalled a high level of concern in the industry over safety and demonstrated there was a need for such materials to help improve standards," said Stiehler, who is strategic industry manager ports, Corporate Solution Center Logistics Automation, at SICK.

The initiative was prompted by a global analysis carried out by the TT Club showing that 34% of asset-related insurance claims are directly related to quay container cranes (see graphic on next page). While existing technologies greatly improve the safe performance of quay container cranes, many of these features are not included as standard on new QCs.

The report's authors stress that the safety recommendations are not legally binding and are independent of local, national and international



Collision prevention is achieved on the newest RTGs by adjustable laser fields on each leg of the crane

regulatory regimes on the safe design, manufacture, specification and operation of cranes, which must also be satisfied. Nevertheless, they provide a clear overview of common sources of QC accidents and give guidance on ways to address them and the technologies available to do so. The report's scope extends to issues such as wind damage, hoists, spreaders and ropes, plus structural and operational issues, hoist snag load protection, operator cabin air conditioning, anti-collision devices on booms, container weight and behaviour measurement, crane tie-downs and storm pins.

The hope of all three authoring bodies is that buyers and suppliers will embrace the safety features outlined in the document as a voluntary industry standard.

While this project has proved a success, the association recognised that the scope of its work needed to be broadened to include yard equipment.

Case study: hydraulic or electric cranes?

Both all-electric and hydraulic crane spreaders are widely used nowadays, but what do ports prefer?

Yang Ming Terminal in Kaohsiung was the first port in Taiwan to use all-electric spreaders, made by Bromma. Vice-president of engineering Sam Shen told *P&H* he preferred electric systems because they can be closely monitored by computer software. "You can click and check the troubleshooting very easily and the downtime is known, so it's good for maintenance. The electric system can be maintained and repaired very quickly. I think most other ports in Taiwan use only electric," he said.

Bromma VP for commercial management Vikram Raman told *P&H* that ports are increasingly opting for all-electric spreaders because, compared with hydraulic spreaders, they demonstrate a 90% saving in energy. The electric systems are also lighter and estimated to reduce crane power needs by 15%. The company said its electric spreaders are cheaper than comparable diesel-driven RTGs and are estimated to reduce CO₂ emissions by about 200 tonnes over a 10-year period.

Despite the benefits of electrics, about 15% of port authorities have chosen hydraulic options for their yards. The US port of Savannah in Georgia has 150 Bromma diesel

spreaders. "We tried everything to shift them to electric, but they were happy with hydraulic systems," Raman said.

Savannah's choice appears to be paying off in operational terms. Bromma said Savannah has a "very low" downtime of 0.5% for its crane and spreader operations. Richard Cox, general manager of equipment and facility engineering at Georgia Ports Authority, said Savannah chose diesel spreaders so it could standardise all equipment, allowing workers to predict problems and fix faults more quickly. "The less change you have, the better response time you're going to get," he pointed out.

Cost analysis of asset-related claims in ports and terminals

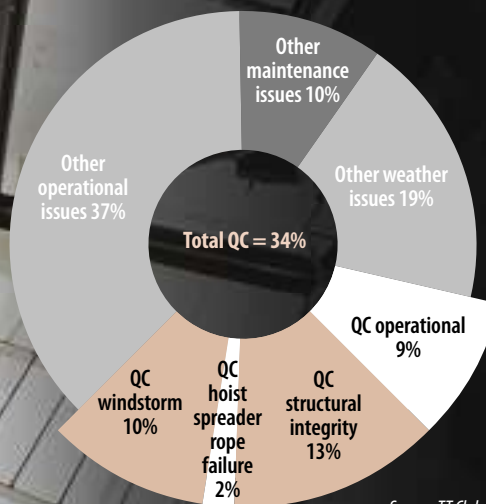


Photo: APM Terminals

Advanced crane technologies can enable preventative measures before accidents happen

PEMA members decided on a twofold approach to safety issues relating to yard equipment, looking at human safety and equipment protection.

PEMA established two working groups. Marco Bernacchioni, sales manager at Advanced Microwave Engineering, heads the human safety group and is supported by Walter Schneider of SICK and Rainer Kapelski of KALP Technologies. Stiehler chairs the equipment protection brief, supported by Oleg Ermolaev, president of Baltkran.

These initiatives will result in *Recommended minimum safety specifications for yard equipment*, which is scheduled for publication at this year's TOC Europe in June.

Once again a joint initiative between the three parties, the document is expected to include safety recommendations for rail-mounted gantry cranes, RTGs, automated stacking cranes, straddle carriers, lift-trucks and reachstackers, automated guided vehicles, terminal tractors and trailers.

Underpinning the proposals is a more structured appreciation of risk. "By analysing the likelihood of events that damage personnel or property, we can classify different types of risk," explained Stiehler.

Health risks, safety risks and cross-cutting or organisational risks all have the potential to result in injury to personnel. Cross-cutting or organisational risks include those dependent on 'business dynamics' – that is, the working relationships, interpersonal and organisational models that exist in a workplace.

The working group divides the process of risk assessment into five phases: identify hazards and risks; evaluate and assign a risk priority order;

decide on preventative action; implementation; and monitoring and review.

"The document seeks to advise port and terminal operators how to resolve and prevent safety risks that specifically concern workplace dynamics that pose an accident risk," said Stiehler. "The fundamental innovation in thinking about safety we are seeking to support is to make continuous risk assessment, in real-time, second nature to the ports industry."

He believes that serious accidents that cause injuries and damage equipment can be more readily avoided if the port introduces effective data communication and advanced technologies that actively sense danger, identify it and enable preventative measures to be taken before an accident occurs.

The legal framework governing such systems has yet to catch up with recent technological advances, according to Stiehler. "This is an area we hope to gradually improve in the future. We hope to see the wider introduction of active safety technologies in the ports industry and the regulatory framework associated with it," he said.

"Ideally, we'd like to see industry bodies supporting the trend towards active and detecting technologies through standards and certification that make such technologies standard in working environments that are considered high-risk," Stiehler added. "This document could form the starting-point for input to improve current legislation, which, given the new technologies in use and their continued rapid development, is still inadequate." **PH**

More info: www.pema.org



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China to drive up efficiency

Beijing wants to use its five-year plan to address oversupply at container ports and reduce congestion at its dry bulk terminals. China correspondent **Bouko de Groot** reports

Under the current five-year plan, Beijing is seeking to increase the efficiency of its ports and their hinterland infrastructure. Gone are the days that ports were planned and built as standalone projects. The ideal now is that ports co-operate with their city, industry, railway and inland waterways to maximise each other's benefits.

As part of the current plan, the Ministry of Railways and the Ministry of Transport have finally signed agreements to work closely together. Rail connectivity is severely lacking in most of China's ports, with the majority of the containers and dry bulk being transported on land by truck. Shanghai's Yanshan deepwater container port, for example, has yet to be connected to the mainland by railway.

There is still plenty of scope for improving transport on China's rivers too. Dredging continues up and down the Yangtze to deepen and widen the channels and river vessels are being standardised on bigger and more modern designs. Training has been improved and the latest management technologies implemented along the river.

Farther south, however, there is still much to be done on the Pearl River. "The most prominent problem is to solve the issue of locks and dams upriver," Jianhua Ren, deputy director of the Pearl River Water Transport Development Institute, told journalists recently. Beijing expects a great deal from this artery, which connects the southern provinces. Yunnan and Guizhou provinces should be unlocked so they can develop and act as hinterland for Guangdong province. Resources can be transported to the power-hungry Pearl River Delta, which now has to import a lot of coal from Indonesia. The planned overland crude oil route from Myanmar to Yunnan, which bypasses the Malacca Strait, will be

another driver to speed up development of this river. "At the moment, vessels upriver cannot go downriver and vice versa, [and] ships from Yunnan and Guizhou cannot enter the large channel of the Pearl River waterway," Ren explained. Less than 17% of the river is navigable and very few of its tributaries have been developed yet. Ports are often small and inefficient.

"There is a low degree of standardisation of vessels, the majority of enterprises are small and scattered, and overall the level of organisation is quite low," explained Ren, illustrating the major challenges ahead.

Similar issues have hampered development of the Yangtze River in the past. China's river ports will play a vital role in making the economy less dependent on exports. That dependency is still overwhelming and maintains the relative importance of its coastal container terminals, which have benefited greatly from Beijing's pre-crisis optimism and anti-crisis investments. Perhaps excessively so, since oversupply has now become an issue.

Looking at the four major regions, Jonathan Beard, global head of port and logistics consultancy GHK Economic and Management Consultants, explained at the Senior Maritime Forum in Shanghai that it is unlikely that the excess capacity in the Pearl River Delta can be soaked up by international transshipment.

Farther north, the excess supply in Fujian province



Photo: Southern Cross Maritime



Xiamen's overcapacity could be absorbed by an increase in Taiwan trade

may perhaps be taken up by further growth of direct mainland-Taiwan trade. In the Yangtze River Delta, "capacity is tight over the medium term, even without significant international transshipment," commented Beard. Up north in Bohai Bay, "geography creates a more segmented market, but overall there is a short-term supply surplus," he added. This might change into a shortage over the medium to long term, though. APM Terminals told *P&H* that it holds a similar view.

China's deepwater container terminals have been readied to receive the growing fleet of newbuild behemoths, but its drybulk terminals lag far behind. Perhaps that is why Beijing recently took back control from ports to approve berthing of oversized vessels. This announcement shows that these very large ore carriers (VLOCs) of 375,000dwt and above are being discussed at the highest levels in Beijing.

"Globally the trend is that vessels grow in size, so VLOCs won't be refused," Yunfei Chen, deputy chief engineer of China's Port Development Institute, told *P&H*. "However, more time is needed to construct compatible terminals," he added.

Dredging is being undertaken at several ports.

Dredging has improved access for oceangoing ships at Yangtze ports



Container throughput

	2011 (teu)	% increase on 2010		2011 (teu)	% increase on 2010
Total	162.3M	11.4	Tianjin	11.5M	14.1
Shanghai	31.7M	9.3	Xiamen	6.5M	10.9
Shenzhen	22.6M	0.3	Dalian	6.4M	22.1
Ningbo-Zhoushan	14.7M	11.7	Lianyungang	4.9M	25.3
Guangzhou	14.4M	13.4	Yingkou	4.0M	20.8
Qingdao	13.0M	8.9	Suzhou Port*	4.7M	28.6

* River port

Source: China Port Association

"Considering the costs of port construction and the distance to iron ore users, the most competitive ports for VLOC terminals are Dalian, Qingdao and Ningbo-Zhoushan," Chen said. He was unable to say how long it will be before they're ready, but in the middle of last year he correctly predicted to *P&H* that 2011 would see the first VLOC berth in China.

Many ports in China are still catching up to become 300,000dwt terminals, of which there are fewer than a dozen, almost all in the north. Worse, in the south there are not even many 200,000dwt terminals. In general, China's drybulk ports are too small, have insufficient storage and lack proper hinterland infrastructure.

Beijing wants to change all that during the current five-year plan. Big users and big ports will now be located close to each other wherever possible. To reduce distribution costs – the same reasoning behind the use of VLOCs – 40% of China's steel production should be in coastal cities and along the Yangtze River. As a bonus, being new, such facilities will be more environment-friendly than their predecessors.

Beijing's focus on efficiency instead of capacity should start to bear fruit before the end of the current plan in 2015, provided local, provincial and national ministries and departments are prepared to work together and put theory in practice. **PH**

More info: <http://english.chinaports.org>

Concern over port impact on reef

Industrial expansion at Queensland ports is creating concerns about the protection of one of Australia's unique natural features, the Great Barrier Reef, reports **Adam Rollason**

Anxiety is growing about the impact of port expansion on Australia's Great Barrier Reef after the announcement of two major Queensland developments: the Curtis Island LNG project and associated dredging at the port of Gladstone, and the massive expansion of the Abbot Point coal port.

BG Group's Curtis project will see the construction of an LNG plant with an initial capacity of 8.5M tonnes a year. To allow LNG tankers to access the site, Gladstone Port Corporation (GPC) is carrying out dredging that will result in a total of 26M m³ of material being removed over two and a half years.

The dredging has faced local opposition since it began in May 2011, and particularly in recent months after Gladstone fishermen claimed the works caused an outbreak of disease within local fish stocks.

Some fishermen have issued a lawsuit, claiming a total of A\$20M (\$21M) in compensation. However, the port and the Queensland government argue that scientific evidence shows dredging is not to blame.

GPC has previously stated that such claims are exaggerated because "estimates from fisheries data of the total annual gross revenue from the commercial seafood harvest in the Western Basin is around A\$350,000–400,000". It emphasised that it will make good its agreement to pay compensation to commercial fishermen for the loss of access to fishing grounds caused by the preparation work.

A spokeswoman for the corporation told *P&H* that the dredging project is "operating under more than 1,000 environmental conditions [and] is costing an extra A\$250M due to the stringent environmental conditions we have agreed to in order to minimise our impact on the harbor and its environs".

At Abbot Point plans are under way to expand the port from a single terminal to seven, with the state government reporting that it is also considering a further expansion to nine terminals "following overwhelming demand from the private sector".

The plan is one of several that led environmental

Preparation work on the Curtis Island LNG project in late 2011





Photo: NQBP

group Greenpeace to publish a report warning of the impact on the reef of port development and increased shipping traffic related to Queensland's coal export boom. "Up to 10,000 coal ships would travel through the Great Barrier Reef World Heritage Area by the end of the decade. This compares to less than 2,000 in 2011," the organisation said. "An average of two accidents has occurred every year since 1985. More ships mean more pollution, more spills, more groundings and more collisions," it added.

Countering this point of view, a spokeswoman for North Queensland Bulk Ports Corporation (NQBP) – the port authority for Abbot Point, Hay Point, Mackay, Weipa and Maryborough – told *P&H*: "The developers of the proposed new coal terminals at the Port of Abbot Point have come together to undertake comprehensive environmental studies for the expansions to be carried out by leading scientists.

"This cumulative impact assessment will help ensure that Abbot Point provides port best practice in environmental design and management," she said, adding that the report would then be available for public consultation before it is considered by the state and federal governments.

The spokeswoman also welcomed the decision by UNESCO to send a monitoring mission to the Great Barrier Reef in March to see for itself how the World Heritage Area is being protected from development. "We take very seriously the World Heritage Values of the reef and its importance and protection for future generations, so we think it is very important that UNESCO witness first-hand the level of rigour applied in managing any developments adjacent to the Great Barrier Reef," she said.

The UNESCO team will report on its findings by the end of April (after *P&H* goes to press). Its terms of reference include reviewing all planned and potential developments that could affect the "outstanding universal value" of the reef, although it makes specific mention of Gladstone's Curtis Island project.

Gladstone Port Corporation's spokeswoman said that the authority had "sought time with the UNESCO team so we have the opportunity to show the team the high standards that this project is operating under".

The review by the United Nations agency is not the only one in the pipeline. In response to worries expressed in the media and among local environmental groups, the state and federal governments joined with the Great Barrier Reef Marine Authority in February to announce a major assessment of development pressures on the reef.

The parties also signed an agreement on "processes to ensure future sustainable development along the Queensland coastline and protection and management of the Great Barrier Reef", they said in a joint statement. Those processes include plans to change environmental laws so that major port projects would be required to undergo only one overall environmental assessment, rather than facing both national and state review.

Australia's environment minister, Tony Burke, commented: "Rather than always dealing with one application at a time, this allows an assessment of the region as a whole. That gives us an opportunity to take into account the cumulative impacts and any indirect impacts such as increased shipping movement."

Queensland's major port authorities said they have long been committed to ensuring that any development takes place in a sustainable matter and that this commitment will continue in the long term.

"As stewards of the Gladstone harbor, GPC recognises the value the harbor plays in the future prosperity of the region," said the Gladstone spokeswoman. "GPC takes its responsibility to maintain the integrity of the harbor seriously and always looks for the balance between developing industry and protecting our marine environment."

NQBP's spokeswoman said the authority takes "great pride in its environmental management", adding that Queensland's ports are an example of how development can be managed sustainably.

"Our moral obligations to the welfare of the Great Barrier Reef [mean] it is in our business interests to see its ongoing protection from harm to allow us to have a social licence to continue to operate in the Great Barrier Reef Marine Park," she commented. "If there is any chance of unacceptable harm to the reef, we move to other options." **PH**



Malacca plans for the rebound

On the premise that the downturn can't last indefinitely, Singapore and Malaysian ports are investing heavily for a hoped-for container bounceback and bigger ships, reports **Vincent Wee**

The ports along the Strait of Malacca have always profited from their strategic location and have thrived in the present era of high-volume container shipping, relying on their traditional strengths of good interconnectivity and safe harbors. Stretching from Singapore at the southern end of the strait to the Port of Penang at the northern end, all have invested in expansion to prepare themselves for the future.

The Port of Singapore is the second-busiest container port in the world with total throughput of 29.94M teu in 2011. The dominant port operator, PSA Singapore Terminals, accounted for nearly all – 29.37M – of those containers, of which 85% are transhipped. PSA operates five container terminals at Tanjong Pagar, Keppel, Brani and Pasir Panjang (two), with a total of 54 container berths. The other boxes were handled by operator Jurong Ports, whose main focus is bulk handling.

Pasir Panjang Terminal with 16m draught berths and 22-row quay cranes can accommodate the world's largest container ships. PSA, however, is constantly planning for the future and despite the current slowdown has already fast-tracked its expansion plans, which envisage 15 more berths that are expected to raise total handling capacity at PSA Singapore Terminals by more than half to 35M teu a year.

Phases 3 and 4, expected to be completed by 2013, will add another 16 berths and bring total capacity to 50M teu/year. These new berths are meant to prepare for the latest 18,000teu mega container ships as well as to maintain PSA's hub status within the growing intra-Asia trade.

Moving over the border into Malaysia, the nearby Port of Tanjung Pelepas (PTP) is that country's largest terminal by volume. It has an ambitious target of 11%

growth in throughput this year compared with 2011, when the terminal's 12 berths handled 7.5M teu, which itself represented a 15% increase over 2010.

PTP created a stir in 2000, its first full year of operation, poaching key customer Maersk from Singapore by offering it a stake in the port. Maersk was followed by Evergreen in 2002. Most recently, the port welcomed new lines in 2011, including Mitsui and "K" Line of Japan, China Shipping and Korean lines Hanjin, STX Pan Ocean, Sinokor and Heung A. In all, 26 lines call at PTP.

The port plans to add two more berths, which will raise capacity from 8.4M teu to 10M teu next year. And looking ahead, the next phase of development will add a further eight berths and expand capacity to more than 15M teu. These volumes will get a significant boost when, as one of the service ports on the Asia-North Europe 'Daily Maersk' run, it starts receiving the Danish giant's game-changing Triple E Class ships in 2013.

Port Klang, in the middle of the Malacca Strait, is Malaysia's biggest and busiest port in terms of container handling. It has two terminals, Northport with 12 berths and a 4.9M teu/year capacity, and Westport with six berths and a total capacity of 8.4M teu/year. Westport handled 6.4M teu in 2011 but is planning further expansion to bring capacity to 10M teu within the next two years. The new facilities will also be able to handle the biggest Maersk ships when they come on stream.

Port Klang's current two terminals are expected to keep up with demand until 2016, but its operators are awaiting government approval to build a third terminal in anticipation of future need.

While still subject to the vagaries of global trade, overall prospects for the Malacca ports are good, believes Frost and Sullivan Asia-Pacific Transportation and Logistics Practice vice-president Gopal Ramasubramaniam. "Intra-Asia trade lanes are less sensitive to developments in the US and Europe. Asia is mainly being driven by economies in southeast Asia, which has seen over 10% compound annual growth in trade volumes over the past five years," he told *P&H*.

In fact, Gopal noted that volumes on the east Asia-southeast Asia trade lanes are now higher than trade with other regions such as South America, the Gulf or Africa. "Intra-Asia trade dominates the external trade for Singapore and Malaysia, accounting for

Little big Penang

The northernmost port in the strait is also the smallest. Penang Port's North Butterworth Container Terminal (NBCT) is just at the 1M teu/year level and deals mainly with domestic shipments to Malaysia's northern region and southern Thailand. However, it has big ambitions and has invested some RM1Bn (\$330M) to complete phase 3 construction.

The expanded facilities now include a berth measuring 1,500m, a 600m extension. The port's main approach, the North Channel, will also be dredged to 14.5m from the current 11.5m, to attract more mainliners and larger vessels.

In addition, Penang is also reported to be receiving increasing transshipment cargo from exporters in southern Thailand, who see it as a useful alternative to shipping out of the main Thai ports. Some reports suggest that up to 100,000teu/year is coming from this business.

approximately 70% of total trade," he pointed out.

With Singapore and Malaysia's trade volumes of 71% with the rest of Asia – compared with 10–12% each with the USA and Europe – Gopal sees intra-Asian trade volumes helping Malacca ports sustain their 2011 growth figures, even though some of the volumes towards Europe may be affected.

Among the challenges he sees ahead for the ports are potential declines in volumes resulting from the consolidation of the lines as they struggle to cope with the continuing downturn. "Consolidation thereafter may result in rationalising trade lanes and frequencies to make them more profitable. This could lead to potential declines in volumes if the routes are not profitable in the event that demand declines," he said. In the long-term, however, volumes may increase again.

Another concern for the future is the development of land transport modes within Asia for intra-Asia freight, he said. In a new era of enforced economies and cost-cutting, shippers are already looking at alternative transportation for intra-Asia freight. Rail is seen as being a strong competitor for ocean freight container traffic, but it is not clear how land transport modes will affect ocean freight volumes.

Finally, the big story for the key Strait of Malacca ports is the advent of the 18,000teu mega box carriers. No port can afford to ignore them and all but the smallest ports that are capable of receiving them are upgrading their facilities to prepare for their arrival. **PH**

Penang's expanded facilities include a berth of 1,500m

All the ports marked here are investing in expansion



Pioneering cargo modality for America

BNSF is leading the drive for innovative transport operations in the USA. Chief marketing officer **John Lanigan** describes the company's intermodal activities and its strategy for meeting customers' needs

BNSF Railway is one of the largest railroads in North America, covering 51,500km across 28 states in the United States and two provinces in Canada. Every hour of every day, its trains move products and raw materials produced in North America and around the world. The company claims it transports all of that freight with much greater fuel efficiency and fewer emissions than all-highway alternatives.

This vast network connects the west coast and Gulf ports to the middle and western US regions and two Canadian provinces. With direct access from ports to key inland markets, it can move goods along its rail network to state-of-the-art intermodal facilities that are strategically located in large US markets.

By volume, BNSF is the largest intermodal railway system in the world. In 2011, 4.5M intermodal truck trailers or containers were transported by BNSF rail in preference to America's congested highways. Through its own network and interchange with other railroads, BNSF is able to serve 100% of the US market. Of the top 20 US importers, 98% have distribution facilities within 32km of its intermodal facilities.

The railway works collaboratively with its trucking and ocean carrier customers to customise intermodal solutions for the retail companies it serves. Its

newest service product of this kind, Next Generation Intermodal, offers different rail speeds and multimodal rail options in the same shipping lane. Whether the freight is seasonal, promotional or needed for inventory replenishment or store delivery, Next Generation Intermodal provides solutions specific to the needs of its customers.

Next Generation Intermodal features include what the company calls the fastest and most consistent intermodal service in the industry; partnerships with asset-based carriers that can guarantee equipment; the industry's most comprehensive rail and over-the-road network; domestic and international delivery schedules to meet the customer's specific needs; and complete visibility throughout the supply chain.

Some examples of the way that this service works in practice and more information on Next Generation Intermodal can be found at www.bnsf.com/customers/next-gen-intermodal.

Intermodal is such a large part of BNSF's business, so naturally it is a strategic focus. Hence the company has been continuously investing in its infrastructure to ensure the safe and efficient transport of intermodal shipments. It recently finished a large expansion of an intermodal facility in Memphis, Tennessee, and is in the process of building a new state-of-the-art logistics facility in Kansas City. Some \$200M was invested in the expansion and rebuilding of the Memphis Intermodal

On a per tonne-km basis compared with trucks, rail has much lower emission levels



Facility, doubling its lift capacity in the Memphis market. At the same time, the new Kansas City Intermodal Facility is set to become one of the largest, most modern freight transport hubs in the industry.

Pending acquisition of the necessary permits, Southern California International Gateway (SCIG) will become the greenest intermodal rail facility in the USA. Today, trucks moving containers travel 38km from the Los Angeles and Long Beach ports to downtown railway marshalling yards. SCIG's location would reduce that trip to just 6.5km by allowing freight to be loaded on or off rail closer to the ports. SCIG will allow 1.5M more containers to move by more efficient and environmentally preferred rail through the Alameda Rail Corridor each year, greatly reducing truck traffic congestion in southern California.

BNSF is always interested in exploring new market opportunities. The way it identifies new market opportunities is by cultivating close relationships with its customers, who are on the front line and are the best gauge of what is happening in the market. It also closely monitors market trends.

The recent success and rapid growth in transporting crude oil in tank cars from the Williston Basin of North Dakota and Montana is a great example of this approach. While BNSF has been hauling crude oil for more than 100 years, the recent boom in North Dakota has increased this business substantially. In addition to transporting the crude oil to markets, BNSF supplies most of the materials needed for this exploration and production activity, including frac sands that are sourced from domestic and international sources. Its railway lines conveniently serve this area and allow producers to get their product to market quickly.

The European Union's policy of encouraging a shift from road to rail and barge is certainly a familiar dialogue in the USA. Rail continues to outperform trucks in producing lower emissions per tonne-km of freight. As BNSF takes freight off US highways, it also significantly reduces CO₂ emissions. For one gallon (3.8 litres) of fuel, trains move the same ton of freight more than four times as far as trucks, according to the Association of American Railroads.

A BNSF train can move 1 tonne of freight approximately 800km on just 1gal of diesel fuel.

BNSF timeline

1849: 19km Aurora Branch Railroad founded in Illinois

22 September 1995: BNSF created from the merger of Burlington Northern and Santa Fe Pacific Corporation

12 February 2010: BNSF became a subsidiary of Berkshire Hathaway

A double-stack intermodal train removes more than 280 freight trucks from the highway – the equivalent of 1,100 automobiles. In addition, on a per tonne-km basis compared with trucks, railroads emit about one-third of the particulate matter and carbon monoxide, and just one-half the nitrogen oxides based on trucks hauling an average 25-tonne truckload.

Nevertheless, some of BNSF's largest customers are trucking companies, so the company works together with them to offer intermodal services to its mutual customers. The railway handles the long-haul portion of the freight movements, while the trucking companies focus on the origin and destination points. That helps them reduce their transport costs while still providing their customers with reliable, cost-effective and greener intermodal solutions. In fact, BNSF states, its customers typically save 15–20% per load by shipping intermodally rather than going by the highway all the way.

As a result, ever more customers are incorporating rail into their supply chains because of the environmental benefits that it offers. BNSF provides its customers with an online carbon calculator, sending them an annual letter detailing how much carbon they saved by shipping their freight by rail instead of truck.

While BNSF is the rail industry's largest intermodal carrier, BNSF touches many other segments of the economy using a variety of rail configurations. In box cars, tank cars, flat cars and other wagon types, BNSF transports a variety of commodities and products such as whole grains, construction materials, new motor vehicles, low-sulphur coal and wind turbines.

For more than 160 years, BNSF and its predecessor railroads have played a vital role in the US economy. Today, it is a vital link connecting North America's producers and consumers to the global economy. **PH**

More info: www.bnsf.com

Photo: BNSF



How to attract a windfarm developer

The MD of the Danish port of Grenaa tells **Scott Berman** how it managed to secure the contract for one of the kingdom's biggest offshore windfarms

Back in 2006, the Danish government announced 20 prospective sites for offshore wind developments, including a site in the Kattegat near the island of Anholt, northwest of Copenhagen. At the port of Grenaa, just 20km away, MD Henning Laursen said: "We should look into this matter."

The Anholt site was approved and the port had the foresight to reclaim a 130,000m² parcel of land for the project's use as part of a larger €25M (\$33M) reclamation project. The developer, Danish utility Dong Energy, chose Grenaa to be the mobilisation and service port for the DKr10Bn (\$1.7Bn) offshore windfarm of 111 turbines that Dong is building. Slated to open in October 2013, it is expected to provide 400MW, or 4% of Denmark's power consumption.

Grenaa, a mid-sized port with a previously low profile, is a single spot on a dynamic landscape for ports involved in offshore wind development in Europe as manufacturing and/or mobilisation facilities.

The IAPH Port Planning and Development Committee is working on the Offshore Windfarms and Ports project and its outcomes will be reported at a committee meeting during the May Mid-term Conference in Jerusalem.

The European leaders for offshore are the United Kingdom and Germany, in that order, with the latter also an international leader in turbine exports. Bremerhaven exemplifies German ports' push along that line into offshore wind – a push that is likely to accelerate this year to industrial-scale development.

Financial and construction challenges face both developers and ports, for along with big volumes come industrial-scale freight, storage and logistics requirements. Also, concerns have been raised about offshore wind arrays posing extra navigational hazards.

Sarah Azau of the European Wind Energy Association (EWEA) told *P&H* that, in her view, the biggest port-related challenge for offshore wind is finding enough land: "As a newcomer, we have to ensure there is enough space in ports." Doing so will require planning development, she said. And as for navigation, Flemming Thomsen, Dong's project manager for the Anholt project, told *P&H* that restrictions at the Anholt windfarm will preclude this becoming a problem.

Things are moving ahead, but ports need strategic support. Laursen said it is essential to have state investment in hinterland road and rail projects to enhance the intermodality of ports for offshore

Offshore construction vessel *Svanen* with hydraulic hammer

Photo: Port of Grenaa

wind. He reported that the Danish government has approved and budgeted a Dkr111M (\$19.6M) ring road to boost such capabilities at Grenaa.

Looking at the broader European picture, an EWEA report released in November 2011 noted: "The availability of suitable ports is a major logistical consideration for the [offshore wind] industry. Within the next 10 years, manufacturers will have moved closer to, or located outlets at, port facilities."

According to EWEA, about 45 offshore windfarms have been set up across nine European countries, generating an estimated 10.6 terawatt-hours of electricity. The pace is accelerating: in 2010 alone, 308 new turbines started feeding the grid, a 51% increase in annual installation compared with 2009, the report stated. Last year, 16 offshore windfarms were being constructed in Europe, capable of generating 5,603MW. That represents about 10% of Europe's total annual wind capacity, which is still mostly land-based, "making the offshore industry a significant mainstream energy player in its own right," EWEA noted.

It identified eight ports as having a track record in both mobilisation and manufacturing or with such activity being imminent or likely: Bremerhaven, Cuxhaven, Emden and Rostock in Germany; Methil in Scotland; Rotterdam; and Aalborg and Esbjerg in Denmark. EWEA has also identified no fewer than 46 ports across Europe as active in either offshore wind manufacture or mobilisation, or as being suitable for such activity.

According to its report, growth forecasts for northern Europe indicate that offshore wind "is a significant opportunity for ports to counterbalance the economic downturn hitting traditional activities". Against this, the association sees a trend towards fewer mobilisation ports and greater emphasis on manufacturing facilities exporting directly to offshore sites. Logistics costs are the main driver. Nevertheless, there is public sector support in northern Europe for using ports as manufacturing centres for offshore wind.

Areas that are likely to be especially active in the near future include regions in Germany, where public-private initiatives are facilitating the process, and the

Port specifications

EWEA's recommendations for ports looking at this sector include:

- 300m–1km of quayside with a load-bearing capacity of about 15–20 tonnes/m²
- More than 10m of depth in a waterway wide enough for turbine blades with a rotating diameter of 150–200m
- 25ha of storage space for mobilisation facilities, 50ha for manufacturing
- 1,000t gantry crane, or a 750t crane on the quay with a floating crane to supplement it
- No tide, lock or water depth restrictions.

UK, where a \$92M incentive programme is spurring activity on port infrastructure. Several French ports and shipyards are generating considerable interest as well, EWEA reported, and in the longer term eastern Europe is likely to be a significant player. EWEA is also eyeing the Netherlands, Spain, Belgium, Sweden and Finland for the future.

Back at Grenaa, Siemens turbine equipment will be moving on to the new port land in May. Already on that land are two new warehouses and infrastructure awaiting use. Dong staff will service the farm out of the former port headquarters, which the utility has bought. Once construction has been completed, the reclaimed land will house a new tenant – the port is talking to companies now, Laursen told *P&H*.

At Grenaa, an installation vessel *Svanen* transports an enormous hydraulic hammer to the offshore site, where it drives steel pipes for turbine foundations 20–30m into the seabed. Ships and trucks deliver most turbine components, including Siemens blades and nacelles, to Grenaa, where they are prepared and stored awaiting assembly at sea.

The fact that Grenaa was the closest port to the designated offshore area was a major factor in securing the Dong contract, but it was also crucial to reclaim new land with the quay length, clearances and depths – 11m in this case – demanded by the industry. But it also involved the realisation that, as Laursen put it, "a port is all about location. We can't move with our clients to China. We're here, so we have to look into what's going to happen here for the next 10–20 years." **PH**

Offshore vessel *Sea Energy* loading blades and nacelles



Photo: Ed Wroom



The World Ports Climate Initiative is a series of projects and aims championed by members of the IAPH Environment Committee to reduce ports' greenhouse gas emissions and improve air quality. Any port can get involved. *More info: wpci.iaphworldports.org*

Photo: Port of Long Beach



Long Beach agrees green lease

Long Beach's new automated box terminal will be the greenest in the USA

The Port of Long Beach has unveiled what it describes as "the most competitive, technologically advanced and greenest terminal in the USA". The announcement refers to PoLB's agreement with liner OOCL, operator of the Long Beach Container Terminal (LBCT), on a \$4.6Bn sustainable lease that will run until 2052.

Work started last year on the Middle Harbor Redevelopment Project, to combine two ageing cargo facilities into a 21st-century terminal with outstanding environmental performance and full container stacking automation.

The provisions of the lease will cut air pollution and implement the Green Port Policy and San Pedro Bay Ports Clean Air Action Plan.

PoLB is investing \$1.2Bn to develop the 120ha-plus Middle Harbor terminal, while OOCL and LBCT will invest some \$500M in new cargo-handling equipment. The nine-year project will upgrade quays, water access and stacking areas and add a greatly expanded on-dock railway yard.

"We thank OOCL and LBCT for sharing in our commitment to this community and the city of Long Beach, while building the most

technologically advanced and greenest container terminal in the world," said PoLB executive director J Christopher Lytle.

California's ports have been the trend-setters in green terminal leases. The Port of Los Angeles negotiated the first-ever sustainable leases with terminal operators China Shipping and TraPac. Deputy executive director of development Kathryn McDermott told *P&H* that the port's negotiations with several other terminal operators also include sustainability provisions. *More info: www.polb.com*

Green operations

The sustainable lease agreement that terminal operator OOCL has made with the Port of Long Beach includes the following equipment and provisions:

- Low-emission yard tractors
- Replacement of RTGs with electric powered, rail-mounted gantry cranes
- 100% use by berthed ships of onshore power supply
- Energy-efficient lighting
- Solar car ports
- 100% compliance with the vessel speed reduction programme
- 100% compliance with use of low-sulphur fuels within 40nm of the port
- Trucks will comply with Long Beach's Clean Truck Program including minimising idling while in terminal
- Terminal recycling programme
- Carbon emissions associated with consumption of electricity will be offset through the purchase of Green Commodities
- Emission control technology to be reviewed every five years
- LEED certification to be obtained for terminal buildings.

LNG chosen for ultra-clean vessels

Wärtsilä will supply an ultra-clean engine for a new harbor vessel for Incheon Port Authority. The Korean government has specified environmental sustainability as a priority for this vessel of about 200gt, which will be designed and built by Samsung HI.

The nine-cylinder Wärtsilä engine ordered for this vessel can operate on either liquefied natural gas or on liquid fuel oil. While operating in gas mode the engine is able to comply with the most stringent emission regulations.

"The fuel flexibility that our dual-fuel engines offer enables not only environmental sustainability, but fuel cost savings as well since these engines can operate on a wide range of fuels," said Aaron Bresnahan, vice-president of Wärtsilä Ship Power, Specials.

The passenger-carrying vessel, called a guideship, will operate exclusively in the port of Incheon and is scheduled to be in operation by the end of this year.

At about the same time, the Netherlands'

inland waterways will see their first wholly LNG-fuelled petrochemical tanker. The *LNG Greenstream* will be the first inland ship to run exclusively on LNG, which will be converted into electricity for propulsion. The tanker was developed by Peters Shipyards and was built entirely in the Netherlands.

"With the *LNG Greenstream* tanker we have skipped the dual-fuel step for an entirely LNG-electric-operated ship," said Pieter Peeters, CEO of Interstream Barging, which owns the vessel.

Notable numbers

2,000

forecast crane lifting capacity in tonnes by 2060

17%

portion of the Pearl River waterway in China that is regarded as navigable

San Diego's green business challenge

How do you get nearly 50 port tenants to increase their energy efficiency, reduce their air pollution, consume less water, contribute less physical waste and adopt more sustainable business practices? Make it a challenge incentivised with awards and bragging rights.

That's exactly what happened in 2011 when the Port of San Diego threw down its Green Business Challenge, pitting port businesses against one another as they attempted to make their operations more eco-friendly over the course of a year. The challenge, which was the first of its kind, is an integrated energy efficiency and sustainability effort held in partnership with local utility San Diego Gas & Electric (SDG&E).

This friendly challenge brought together 49 local businesses based in the San Diego Bay area, which greened their operations throughout 2011. In January 2012 an awards breakfast was held to honour participants in four categories: Achievement in Sustainability, Commitment



Photo: Port of San Diego

San Diego port tenants reduced their GHG emissions by 843 tonnes in 2011

to Sustainability, Excellence in Sustainability and the 2011 Chairman's Award in Sustainability.

First of all, businesses evaluated their current practices against an energy scorecard, earning points for every green strategy the business already had in place. Based on the results of the scorecard, each business then set

a goal for the duration of the competition. To help them achieve their goal, SDG&E and the port provided online resources, training opportunities, energy efficiency programs and other tools to help green their operations.

One tool available through SDG&E is its on-bill financing program, which makes it easy and

affordable for businesses to finance the cost of qualifying energy-efficiency systems such as new LED lighting. With on-bill financing, the utility provides a 0% loan that tenants can repay on their utility bills with payments that are less than or equal to the value of the energy saved.

What did all of this effort add up to? Through increased energy efficiency, participating port tenants reduced their greenhouse gas emissions by 843 tonnes, equivalent to removing 160 cars from the road or 105 homes from the grid for a year.

The Green Business Challenge proved so successful that it is being relaunched as the Port of San Diego's Green Business Network, which businesses can join and obtain information on how to track their energy efficiency efforts. They will also be able to take advantage of SDG&E initiatives and professional development and training courses, which the port will help facilitate.

More info:
<http://greenportnetwork.org>

IAPH sets up LNG work group

Ever-stricter emission standards have stimulated international shipping's growing interest in liquefied natural gas as a fuel for ships. Anticipating the imminent introduction of emission control areas (ECAs) in the North Sea and the Baltic Sea, it is expected that by the 2015 ECA mandation date a number of pioneers will be operating cleaner LNG-powered ships in their fleet.

Norwegian classification society Det Norske Veritas has estimated that between 19% and 45% of ships will be powered by LNG by 2030. The spread of this technology will oblige ports to rise to the challenge of offering safe liquefied natural gas storage and bunkering for shipping lines.

In response, a work group has been set up within the World Ports Climate Initiative (WPCI) to arrive at early standardisation of the safety aspects of LNG bunkering operations, so that these can be dealt with on a port-wide basis. The work group will also look at other issues including port safety and computerisation.

At the IAPH conference in Busan last year it was announced that a new work group would be set up specifically to look at LNG-powered ships. This initiative met with a very positive reception: the launch meeting was attended by representatives from the ports of Amsterdam, Bremen, Brunsbüttel, Frederikstad, Gothenburg, Hamburg,

Los Angeles, Oslo, Rotterdam and Stockholm, class societies Det Norske Veritas and Germanischer Lloyd and Norwegian gas company Gasnor.

Antwerp Port Authority was asked to act as the lead port for this new work group. In view of its major involvement in current LNG projects – such as the European Clean North Sea Shipping project – this invitation was enthusiastically received. Tessa Major, technical manager of the authority's environment department, will chair this work group. The first meeting is planned for early May and will be hosted by the Antwerp Port Authority.

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

5,000

estimated capacity (megawatts)
of Chinese offshore wind by 2015

\$3Bn

targeted bilateral
trade between
India and
Myanmar by 2015

IMO puts ferry safety on agenda

IMO secretary-general Koji Sekimizu has reminded the IMO Sub-Committee on Radiocommunications and Search and Rescue of the organisation's ongoing project on domestic ferry safety and related technical co-operation activities, following a series of shipping accidents in recent months.

The most recent accident to which Sekimizu referred was the loss of the Bangladesh passenger ferry *Shariatpur-1*, which sank on 13 March after being hit by a small cargo ship in the Meghna River southwest of the capital, Dhaka. The secretary-general offered his condolences and sympathies to the families of all those who lost their lives.

He also mentioned a regional forum on domestic ferry safety that was held in Bali, Indonesia, in December 2011, which adopted an eight-point action plan. He indicated that IMO was ready to carry out more technical co-operation work on the domestic ferry safety project.

After the *Costa Concordia* incident in January, Sekimizu included an item on passenger ship safety in the agenda of the Maritime Safety Committee.

At its 63rd session, the Marine Environment Protection Committee (MEPC) adopted guidelines for the uniform implementation of mandatory measures to increase energy efficiency and reduce emissions of greenhouse gases from international shipping.

The MEPC also adopted amendments to the international Marpol Convention relating to regional arrangements for port reception facilities and adopted guidelines related to the implementation of the revised Marpol Annex V (Garbage) and the Hong Kong Convention for the recycling of ships.

More info: www.imo.org



Scattered containers made the port of Sendai unusable

carriers were either overturned or otherwise severely damaged.

Initial reports estimated it would take 12 months to repair and reconstruct No 2 Pier.

However, because of the enormous economic impact on local communities, repairing the pier was given top priority and engineers worked around the clock to restore the container service as quickly as possible.

On 22 January, reconstruction materials were unloaded at No 2 Pier for the first time, while containers carrying car tyres and printer ink cartridges were loaded for the North American market.

Since that date, Sendai Port has made a major contribution to the restoration and reconstruction of areas devastated by the earthquake and tsunami.

The restoration of container services to North America will speed up future reconstruction, because it contributes to the improving logistics environment of the local economy and has cut the cost of bringing in reconstruction materials.

Sendai – phoenix port returns to life

In January, container exports for North America resumed for the first time in 10 months at the port of Sendai, devastated by last March's earthquake and tsunami in eastern Japan. Four months later, Sendai is offering cargo services similar to pre-disaster levels. The port authority held a ceremony to commemorate the full resumption of services.

Before the disaster, Sendai Port, in Tohoku Region, was the largest cargo port in the earthquake-hit area and the only one to offer

container services to North America and to handle car exports.

The tsunami that followed the earthquake scattered containers and vehicles into the shipping channel, rendering it unusable. Areas around the port subsided by about 50cm as the land was deformed by the earthquake.

Takasago No 2 Pier, which accommodated the large vessels plying the North American container trade, was devastated. Cargo handling equipment such as gantry cranes and straddle

European Parliament proposes new SECAs

The ports of Hamburg, Antwerp and Rotterdam have expressed satisfaction with a recent European Parliament (EP) resolution to transpose international legislation on the sulphur content of marine fuels into European legislation, according to a statement released by the three ports.

The Environment Committee of the EP has voted to approve amendments to the European Commission's proposals to review sulphur content in marine fuels.

The committee has proposed that stricter sulphur standards should apply outside the already established sulphur emission control areas (SECAs) – North Sea, Baltic Sea and the UK's south and east coasts. In addition to the SECAs, it is proposed that from 2015 a general standard of 0.1% sulphur content in marine fuels should apply within the 12nm zone along all EU coastlines. The European Parliament is expected to vote on this in plenary session, probably towards the end of May.

The statement said the European proposal fits within the objectives of the three north European ports to improve air quality, make transport more sustainable and create a level playing field for all European ports. Hamburg, Antwerp and Rotterdam support the principle that the proposed SECAs should be established by the International Maritime Organization and that the result of the vote in the EP's Environment Committee is an important step in this direction.

Notable numbers

34%

asset-related insurance claims directly related to quay container cranes

8

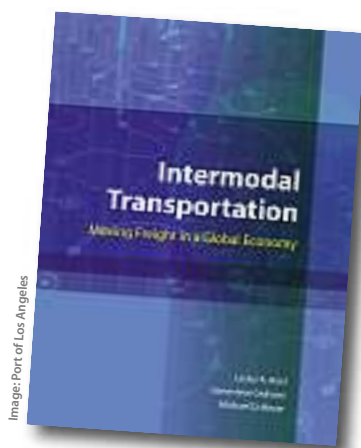
estimated percentage of Baltic ships that could fit efficient scrubbers

A new intermodal textbook

I had already used the Eno Center for Transportation's classic publication Mueller's *Intermodal Transportation*, 4th edition (1999) as a teaching text for classes in Seaport Policy and Management and Intermodal Transportation, writes IAPH president Geraldine Knatz, so I was pleased to see Eno continue the tradition of producing high-quality texts with *Intermodal Transportation, Moving Freight in a Global Economy*. Unlike Mueller's book, this new work brings together transport experts as authors of chapters in their respective fields. Chapters cover background on intermodal transportation, the means of cargo transport, transportation modes, planning for data analysis and issues affecting US freight systems.

While Mueller's book was geared towards the practitioner, the new title not only provides a technical overview of the subject matter, but also covers policy issues that could help stimulate classroom discussions.

I started by reading Mary E Brooks's 'Seaports' chapter, which begins with a good introduction. Brooks makes the point that shipment of fuel is the largest single waterborne trade by tonnage. She then focuses on



container operations, which drive most of the challenging issues in intermodal freight transportation. The most interesting aspect of this chapter was the discussion of the ongoing changes in the industry that could lead to ports being viewed as commodities.

The discussion of trends in routing decisions, the emphasis on the total logistics cost approach, industry consolidation and the move away from terminals dedicated to only one shipping line are all timely and relevant, as all have consequences for seaports. The discussion on measuring productivity really resonated with me, especially as I have posed the following

question to my customers at the Port of Los Angeles and not got an answer: "If I was going to give a financial incentive to improve terminal performance, what measure should I use?" Brooks hits home by recognising that ports do not have the data that their customers possess, making it difficult to determine or ensure productive use of the port's assets.

'Seaports' drew me immediately into Chapter 15 as I was intrigued by Brooks's lead in "what governments' support should look like". Isn't that what a text should do: capture the reader and lead them to where they need to go?

Intermodal Transportation presents the topics as they really are – integrated systems within the global economy. It will provide transportation professionals and even casual readers with a good overview of intermodal transportation. It should be required reading by US legislators and congressional staff who have the responsibility of dealing with the country's freight system.

Intermodal Transportation: Moving Freight in a Global Economy, by Hoel, Giuliano and Meyer (eds), \$100 hardback. To order, go to: <http://enotrans.org/ctp/enopublications.php>.

EU Navfor to patrol until end of 2014

The Council of the European Union confirmed in March its intention to extend the EU Naval Force (EU Navfor) counter-piracy mission off the Somali coast – Operation Atalanta – until December 2014. At the same time the Council also extended the area of operations to include Somali coastal territory and its internal waters.

The decision will enable Operation Atalanta forces to work directly with Somalia's Transitional Federal Government and other Somali entities to support their fight against piracy in the coastal areas.

Meanwhile, the International Bargaining Forum has declared the territorial waters of Benin and Nigeria in west Africa to be a high-risk area. The designation reflects the steady rise in the number of attacks on vessels and crew kidnappings and will afford seafarers in west African waters the same benefits and protections as apply in the high-risk areas of the Indian Ocean. These include the need for enhanced security measures, advance notice of intent to enter the area and a doubling of the daily basic wage and of death and disability compensation while seafarers are within the area.

The president of Intermanager has warned that any move at government level to forbid the payment of ransoms to pirates would have a hugely detrimental effect on the risk to the world's seafarers and to the global economy.

Addressing the opening session of this year's Connecticut Maritime Association (CMA) conference in Stamford, USA, Alastair Evitt, managing director of Meridian Marine Management, said such a ban would reduce the willingness of seafarers to transit high-risk areas.

More info: www.itfseafarers.org

Sept-Îles joins green incentive scheme

Since January, the Canadian port of Sept-Îles has awarded a reduction on port dues to seagoing vessels certified by the Green Award Foundation. The Port of Sept-Îles Authority will offer a 10% reduction on standard harbor fees for all Green Award-certified ships.

The Port of Sept-Îles, in eastern Quebec, is Canada's most important ore handling port and is distinguished by its deepwater berths. Each year, nearly 25M tons of bulk cargo is handled, mainly iron ore, alumina,

aluminium, petroleum coke and limestone.

"Under Green Award schemes, ports receive more quality ships and shipowners who want to invest in cleaner, safer ship management are in turn rewarded for this," said Jan Fransen, Green Award's managing director. Green Award incentive schemes are running in at least nine countries and around 30 ports offer a reduction on port dues to some 227 seagoing vessels already certified under the scheme.

\$50Bn

estimated Chinese investment in Africa by 2015

10%

2011 growth and forecast 2012 growth for the Maldivian port of Malé



A meeting to remember

Speakers at the Port Forum held in conjunction with the IAPH Asia-Oceania Regional Meeting discussed the impact of the global recession on trade in the region and on the ports industry in particular

The keynote speech at the conference was given by the governor of the Central Bank of Sri Lanka, Ajith Nivard Cabraal, who spoke of the opportunities for trade in the Indian Ocean region despite the continuing global challenges raised by a stuttering economic recovery after the worldwide recession.

Cabraal was followed by Michael Proffitt, an independent strategic adviser based at Dubai Logistics City, who gave his assessment of the recent economic slowdown and its impact in Asia.

The final presentation of the first session was a case study on the situation in Oman's ports. The

Forum focused on a couple of national port situations in more detail. The spotlight of the first presentation was on the conference host, the Sri Lanka Ports Authority. Its chairman Dr Priyath Wickrama talked about opportunities and challenges for port development on the island.

Next, the chief executive of Port Nelson, Martin Byrne, set out the issues facing New Zealand port companies and also considered the wider region, looking at capacity building and new port development in Oceania.

The second session was brought to a close with a fresh perspective on port issues from a mariner. Captain Sivaram Krishnamurthi, senior vice-president of the Nautical Institute, gave a seafarer's perspective on port issues.

The final session was dedicated to the hot topic of the moment – sustainable shipping.

The president for the South Asia region of Singapore-based



Sri Lankan president Mahinda Rajapaksa (left) chats with IAPH regional meeting delegates

Port of Salalah's commercial manager, Iain Rawlinson, explained how the sultanate's ports had coped with the slowdown in



SLPA chairman Dr Wickrama presents a gift to the first vice-president, Grant Gilfillan

cargo volumes in the past few years and some of the counter-strategies they had adopted.

The second session of the Port



Delegates had a chance to experience Sri Lankan folklore and music at Nelum Pokuna Theatre in Colombo



Photos: SLPA

container liner APL, Goh Teik Poh, described his company's well-established programme of sustainable operations. APL has been a pioneer in reducing ship emissions and was an early adopter of onshore power.

In the final session, Tony Wines, director of the Turnkey Group, described a method of measuring supply-chain environmental performance. He explained that shipping companies are now able to independently assess and compare how sustainably supply chains operate, allowing shippers to differentiate positively between chains and at the same time reduce their costs.

More from Colombo on p42

Regional meeting minutes

Extracts from the minutes of the 12th Asia/Oceania Regional Meeting held on 9 March 2012

IAPH Secretary General Susumu Naruse updated those attending on the latest activities and achievements made since the Busan Conference in May 2011. He focused on the following main points:

IAPH Technical Committee activity

- The legal database being updated by the Legal Committee
- Projects now tackled by the Port Planning & Development Committee: 'Northern Sea Route and Ports' and 'Offshore Wind Farms and Ports'
- A second phase of the Port Community Systems Benchmark Survey is planned by the Trade Facilitation and Port Community System Committee to cover ports in Africa, South Asia and Americas
- Survey on overweight containers – the responses are being compiled and analysed by the Port Safety and Security Committee.

Election of third vice-president

As a result of Grant Gilfillan becoming the IAPH president at the Los Angeles Conference in May 2013, the region needs to elect a new third vice-president for the term of 2013–2015 towards the end of this year. A tentative schedule for the election process was proposed.

Vacancies in the Executive Committee

Two Exco vacancies have been caused by Nasreen Haque leaving Karachi port, Pakistan, in

late 2011 and Manjit Singh leaving MPA Singapore early this year. The process to elect their regional successors will be initiated in due course.

Venue of future IAPH events in the Asia/Oceania Region

The following IAPH events will be organised in the region, with tentative hosts or candidates in parentheses, pending approval:

- IAPH Mid-term Conference and Board Meeting in 2014 (Sydney Ports Corporation, Australia)
- Asia/Oceania Regional Meeting in 2013 (Abu Dhabi Ports Company, UAE)
- Asia/Oceania Regional Meeting in 2014 (Yeosu Gwangyang Port Authority, Korea)
- IAPH World Ports Conference in 2017 (to be determined).

Update on Mid-term Conference and Board Meeting, Jerusalem, Israel, 21-24 May 2012

On behalf of the Israel Ports Company, our host for the event, Joseph Bassan of Ashdod Port made a presentation welcoming all IAPH members to Jerusalem in May, followed by a promotional video on the Port of Ashdod.

Report from the IAPH Europe office by Fer van de Laar

Fer van de Laar, managing director of IAPH Europe, made a presentation entitled 'Greening the Maritime Industry', which focused on three projects that come under the umbrella of the World Ports Climate Initiative:

- Environmental Ship Index
- Onshore power supply
- LNG-fuelled vessels.

Report on promoting IAPH by Hiro Nagai

IAPH undersecretary Hiro Nagai made a presentation focusing on ways and means of promoting IAPH and increasing value for money for the association's membership, namely:

- Development of databases in key areas, such as port financial reports, terminal lease agreements, environmental impact statements
- Posting the IAPH logo on members' websites
- Listing IAPH associate members by expertise

Introduction of new Exco members

Two new Exco members present who were elected in the period following last year's Busan Conference – Atsushi Fujii, MLIT, Japan, and Martin Byrne, Port Nelson, New Zealand – introduced themselves. Those attending warmly welcomed and congratulated them.

Any other business

Grant Gilfillan took the opportunity to thank all those who attended for their support and co-operation in making the meeting a great success, especially Dr Priyath B Wickrama, chairman of Sri Lanka Ports Authority, the host and organiser of the event. The meeting was then adjourned.



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

Port in profile

Name

Haifa Port

Country

Israel

Type

Deepwater port for containers and bulk

Max depth alongside

15.5m

Quay length

6km-plus

Total tonnage

22.6M tonnes (2011)

Containers handled

1.24M teu (2011)

Other sectors

Grain, breakbulk, cruise



Plenary session at the Asia/Oceania Regional Meeting in Colombo

A first for Sri Lanka

The Asia/Oceania Regional Meeting was an opportunity for the island to showcase its potential as a transshipment hub (see main report, p40-41).

Hosted by the Sri Lanka Ports Authority, the 12th IAPH Asia/Oceania Regional Meeting/Port Forum was held on 8 and 9 March at the Bandaranaike Memorial International Conference Hall, Colombo. The event was of particular significance because this was the first time an IAPH event had taken place in Sri Lanka and it gave the island republic a

forum to showcase its potential and service excellence to port industry stakeholders.

With a long history as a centre of east-west oceangoing trade, it is not surprising that the port of Colombo plays a critical role as a transshipment hub in the Indian Ocean. The venue offered an excellent platform for nearly 50 IAPH members from 18 countries to discuss issues under the theme 'Global Challenges: Impact on the Asia/Oceania Region'.

In addition, several hundred local delegates are reported to

have attended the Sri Lanka International Air Freight, Shipping and Logistics Expo, the country's first-ever expo held in tandem with the IAPH Regional Meeting/Port Forum.

The two-day IAPH event was officially opened by Dr Sarath Amunugama, senior minister of international monetary

co-operation, who read a message from President Mahinda Rajapaksa. The ports managed by the SLPA have experienced a bounceback in cargo throughput over the past two years. In 2010, the Port of Colombo handled a record 4M teu, an increase of 20% on the previous year.

Sri Lanka is on a major development drive that involves investments totalling \$1.5Bn. These development opportunities are particularly important since the Asia region is likely to drive future economic growth globally. With strong trade and investment linkages, Sri Lanka is well placed to take advantage of this dynamism.

In the latter part of the event, SLPA arranged technical tours for IAPH delegates of Colombo South Port and the Port of Hambantota greenfield development project.

Dredged material report

IAPH has made a financial contribution to the development of the report *Waste assessment guidelines training set extension for the application of low-technology techniques for assessing dredged materials* and provided expert advice from the standpoint of port authorities.

The IMO guidance is designed to assist individuals

or bodies in reviewing operations and provide the tools from a simple starting point to building an assessment, management and permitting system for dredged material to be considered for disposal to sea.

You can find the full document on the IMO website at: www.imo.org/bast/bastDataHelper.asp?data_id=30961&filename=WAGTE-Vers1.0.pdf.



Photo: Israel Ports

Membership notes

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

Regular member

Canaveral Port Authority

Address 445 Challenger Road, Suite 301, Cape Canaveral, FL32920, USA
Telephone 1-321-783-7831
Fax 1-321-783-4317
Email spayne@portcanaveral.com
Website www.portcanaveral.com
Representative J Stanley Payne, chief executive officer

Associate member

Marine System Ltd

Address 2-11-18 Heiwa-dori Shiroishi-ku, Sapporo, Japan
Telephone 81-11-863-5927
Fax 81-11-863-6833
Email otsuka@njpc.co.jp
Representative Dr Senji Osanai, CEO
Nature of business activities Consultant



Tell us about your plans

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

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

For the Sept/Oct and Nov/Dec

issues we have a mix of technical and managerial themes planned:

September/October issue

- Cover feature: Americas regional focus
- Feature: Port software
- Feature: Port maintenance and new infrastructure

November/December issue

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

If you have ideas for articles that you would like to discuss with the acting editor, please email Jem Newton at jem.newton@ihs.com.

Visitors to Tokyo HQ

The IAPH Secretariat welcomed two IAPH members at Tokyo head office in February and March. Headed by its president and CEO Magnus Kårestedt, a delegation from the Port of Gothenburg (www.portgot.de) visited head office on 28 February. On 15 March, Myanma Port Authority, headed by its general manager Cho Than Maung, paid a visit. Secretary General Naruse exchanged views on the World Ports Climate Initiative and regional maritime topics with the two delegations.



Secretary General Naruse with Myanma Port Authority delegates



SG Naruse with delegates from the Port of Gothenburg

Dates for your diary

A selection of forthcoming maritime courses and conferences



May

- 14–18** IMO Asia-Pacific Regional Workshop on the London Protocol – Jeju, Korea
www.imo.org
- 21–22** PIANC Annual General Assembly – Valencia, Spain
www.pianc-aga2012.org
- 21–24** IAPH Mid-term Ports Conference – Jerusalem, Israel
www.iaph-jerusalem2012.com
- 22–24** Breakbulk Europe – Antwerp, Belgium
www.joc.com/events
- 22–24** RORO exhibition and conference – Gothenburg, Sweden
www.roroex.com
- 25–6 July** Port Management and Operations Course – Singapore
www.psa-institute.com
- 30–31** 10th ASEAN Ports and Shipping 2012 – Jakarta, Indonesia
www.transportevents.com

June

- 4–5** JOC Container Shipping Conference – Shanghai, China
www.shanghai.joc.com/
- 4–7** 2nd Combined Maritime Security Conference – Halifax, Canada
www.maritimesecurityconference.org
- 4–15** Seminar on Customs, Taxes & Trade Affairs – Antwerp, Belgium
www.portofantwerp.com/apec
- 7** Port Finance and Investments 2012 – Amsterdam, The Netherlands
www.millenniumconferences.com
- 12–14** TOC Container Supply Chain: Europe* – Antwerp, Belgium
***20% discount for IAPH members**
www.tocevents-europe.com
- 18–21** 13th World Conference Cities and Ports – Nantes, Saint Nazaire, France
www.citiesandports2012.com/en
- 18–22** Seminar on Dredging and Reclamation – Delft, The Netherlands
www.iadc-dredging.com
- 28–29** The Port Executive Course – Marseille, France
www.porteconomics.eu/portexecutive.html

July

- 1–6** International Conference on Coastal Engineering 2012 – Santander, Spain
www.icce2012.com

Photos: Israel Ports



Yechiel Leiter

A spring festival of port innovation

Israel Ports chairman designate **Yechiel Leiter** (top) and CEO **Shlomo Breiman** (below) welcome IAPH members to the Mid-term Conference in Jerusalem in May



Shlomo Breiman

“A platform to promote the interests of the world’s ports”

The Israel Ports Company (IPC) is proud to host the 2012 Mid-Term Conference and Board Meeting in Jerusalem, which runs from 21 to 24 May.

Israel’s geographical location links Europe, Asia and Africa. Jerusalem, as the spiritual centre of three monotheistic religions, is a source of inspiration that brings believers from around the world together.

Likewise, we hope that the IAPH Mid-term Conference in Jerusalem will create a platform to link and promote the interests of the world’s ports network and highlight its critical importance to international commerce and trade. Ultimately, we hope the conference will contribute to the economic development and welfare of all our countries.

We are working hard to create a stimulating professional programme that will address issues of common concern. Special emphasis has been given to economic developments and their impact on shipping and port infrastructure. Our keynote speaker will be Professor Stanley Fisher, the governor of the Bank of Israel, who was named the world’s best central banker last year.

We will also be exploring a number of the environmental issues that are of importance to our sector and a whole day is dedicated to the valuable work of the various IAPH

technical committees. The agenda of the committees will be published in advance and the meetings will be open to any conference participant who wishes to join a particular discussion.

The media has recently reported on an Israeli initiative to construct a canal port on the Red Sea that would be connected by railway to the Mediterranean, potentially creating a parallel route to the Suez Canal. The scope of the project will be presented at the conference.

Israel is renowned for its technological development and we plan to expose you to some of those advanced technologies at the conference through presentations of security and operational technology that have been applied in a port environment.

No visit to Jerusalem is complete without a visit to the city’s historical, religious and archaeological sites. We have prepared an extensive social programme that will introduce you to Jerusalem’s unique character, while allowing you to mingle and share experiences with colleagues from around the world. And while we are working, accompanying persons will be kept busy with their own entertaining programme.

We look forward to welcoming each of you in Jerusalem and are confident that you will leave with lasting memories of the experience. **R&H**



People and vessels

These are the driving forces behind Jan De Nul Group. Thanks to its skilled employees and ultramodern fleet, Jan De Nul Group ranks at the top of the international dredging industry as well as being one of the largest civil engineering and environmental contractors.

The supporting services of the dredging, civil and environmental division enable Jan De Nul Group to perform large-scale projects to its clients' satisfaction, whether this concerns a Palm Island in Dubai, a new port facility in Australia or the construction of the new locks in the Panama Canal.



www.jandenul.com



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G R O U P

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Van Oord is a leading international contractor specialising in dredging, marine engineering and offshore projects (oil, gas and wind). Our clients and business partners can rely on Van Oord to come up with smart and innovative solutions to the challenges they face in marine environments. We are driven by our passion for water and technology and applying our ingenuity to achieve the best and most sustainable results.

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Dredging and Marine Contractors

Offshore



Marine Engineering



Offshore Wind Projects



Soil Improvement



Dry Infrastructure

