



# PORTS & HARBORS

Official Journal of the International Association of Ports and Harbors

## Prospects for Panama

Alemán's perspective on canal expansion

## Waste not, want not

Beneficial reuse of dredged material

## Profitable greening

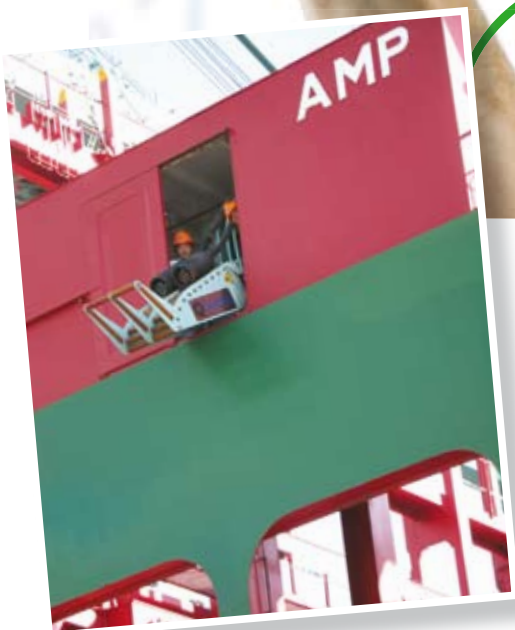
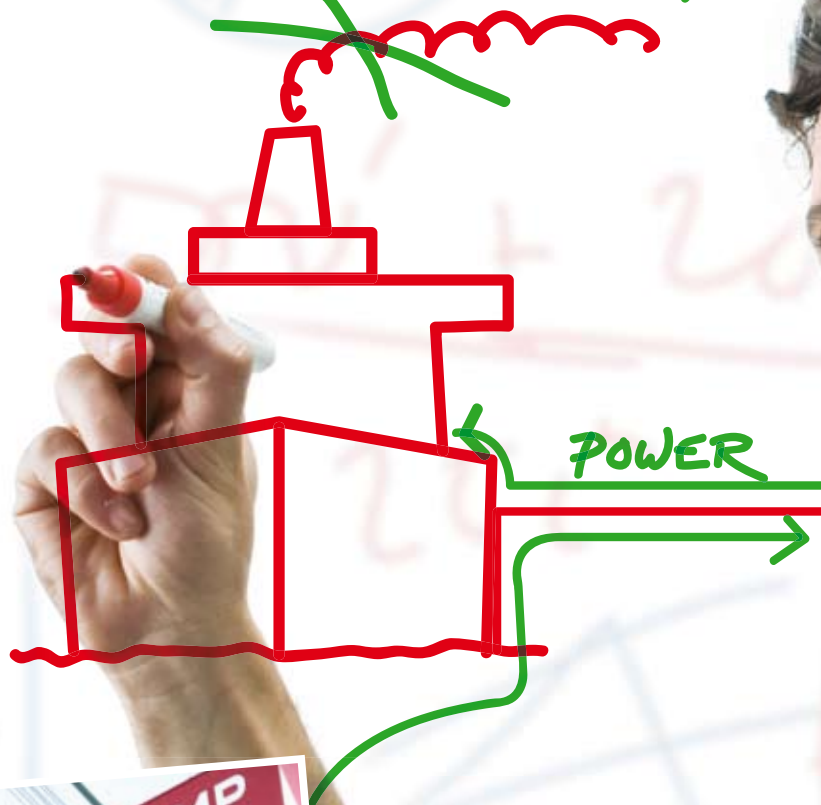
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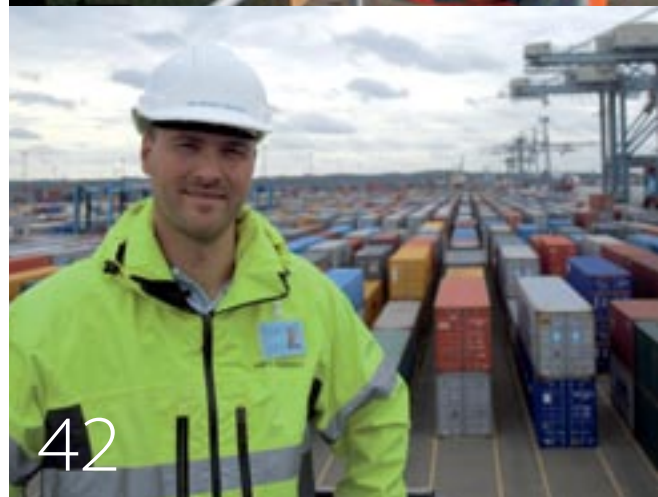
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All part the supply chain... a container is inspected by the Jacksonville Sheriff's Office Canine Unit, as it leaves the Port of Jacksonville, US

Photo: USCG

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## THE CONTINENTAL GATEWAY



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# PORTS & HARBORS

Official Journal of the International Association of Ports and Harbors

## PORTS & HARBORS

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# Climate-proofed

Ports should act together, and learn from each other, to prepare for the risks that come with climate change

“Along the US Gulf Coast, a sea-level rise of 4ft [1.2m] could permanently flood 24% of interstate highways, 72% of cargo handling port facilities and three airports,” said Mike Savonis, senior policy adviser, US Department of Transportation. During an expert meeting of the United Nations Conference on Trade and Development (UNCTAD) in March, he highlighted the vulnerability of ports and other logistics infrastructures in a region where ports handle 40% of the country's maritime tonnage.

To address climate change effectively, action to reduce greenhouse gas emissions alone is not sufficient. New measures need to be adopted to minimise impacts. The rise in sea levels represents a critical threat to ports throughout the world. It

could also lead to increased sediment movement, silting up access channels and harbor basins. More frequent extreme weather conditions, such as hurricanes, storms and floods, are likely to disrupt port operations and damage facilities.

We have to work towards 'climate-proof' ports, where ports are well-prepared for adverse weather conditions. Risk assessments on the impact of climate change on

“The rise in sea levels represents a critical threat to ports throughout the world”

our ports and related transportation systems should be carried out. We should then prepare an integrated action plan and implement it through phases. A wealth of experience and knowledge accumulated by certain ports prone to natural disasters – such as those in Japan and the Netherlands – should be shared among ports. The World Ports Climate Initiative (WPCI) launched by IAPH is well positioned to provide a platform for this function. Funding will have to be secured so that the appropriate measures can be carried out in a timely manner. This is especially crucial for ports in developing countries where funds are always scarce.

The IAPH World Ports Conference from 25 to 29 May will facilitate discussion on the challenges of climate change. The conference will showcase a unique venture, already under way in Italy, called MOSE Project, which aims to protect both the city and the Port of Venice from severe storms and rising sea levels.

I look forward to welcoming you all in Genoa. PH



**Dr. Satoshi Inoue**  
Secretary General – The International Association of Ports and Harbors

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## Port updates

### ICTSI ECUADOR CRANES

Contecon Guayaquil, manager and operator of the Guayaquil Container and Multipurpose Terminals (GCMT) in Ecuador, has taken delivery of three new quay cranes and eight rubber-tyred gantries, manufactured by Shanghai Zhenhua Port Machinery of China. The equipment is the first of its type in Ecuador. In 2007, CGSA acquired two mobile harbor cranes after its takeover of the port.

### MATCHING THE DRAUGHT

Four new super-post-Panamax twin-lift cranes by ZPMC have been delivered to the Port of Salalah in Oman. "The more cranes we have, the faster we can service the ships," a spokesman said, adding that the port is recording productivity statistics of 25 to 26 box moves an hour per crane.

"We've got 18m draught berths; we're built for the larger ships. If you have the depth you've got to have the cranes. We build for the future," he declared. Salalah is also converting a general cargo berth to box traffic by installing crane rails to give an extra 300m of quay.

### CALLS FOR CHARLESTON

The National Shipping Company of Saudi Arabia now includes calls at the Port of Charleston, South Carolina, on a North American rotation that began at the end of March. "This is great news for South Carolina Ports and the maritime community," David Posek, chairman of the South Carolina State Ports Authority, wrote in a statement.

### MICROWAVE MONITORING

Mitsui OSK Lines (MOL) has adopted the Hawk Eye crane safety monitoring system on transfer cranes at the Tokyo International Container Terminal. The system uses a microwave sensor that was developed by MOL subsidiary Nihon Engineering.

The company claims that the system will enhance safety and reliability of loading/unloading operations, and help prevent accidents. The Hawk Eye is claimed to be the first system in the world to use a microwave sensor.



Photo: Capt Peter Newton

**Maersk is showing commitment to reducing emissions in California's ports, including Los Angeles**

## Mærsk pioneers LA project

Denmark's AP Møller-Mærsk Group is making serious efforts to reduce emissions from its ships in ports, with a focus on the west coast of North America. "We are a pioneer in a project in California," Maersk Line chief executive officer Eivind Kolding told *P&H* at the group's Copenhagen headquarters in March.

Since the initiative began in 2006, 111 vessels have participated and at the end of February this year the milestone of the 1,000th vessel call was passed. The initiative has reduced vessel-related air emissions of the Maersk Line fleet by over 2,400 tonnes when calling at the ports of Los Angeles, Oakland, Tacoma and Vancouver.

The idea is that Mærsk container vessels switch to a low-sulphur distillate fuel (0.2%) in their main

and auxiliary engines while underway in port areas and in the auxiliaries while at dock in Tacoma and Vancouver.



Photo: Maersk Line

**Maersk's Kolding wants the shipping industry to come together to discuss environmental matters**

The fuel changeover is made 24nm from the coast.

Reducing the amount of sulphur in ships' fuel in this way will help improve air quality, which has suffered from high levels of pollution for many years.

Maersk believes that participation in this project demonstrates the group's commitment to environmental issues. The shipping industry should join together to discuss these environmental matters, Kolding told *P&H*, stressing that "it's important".

Maersk also recognises that the California ports project offers useful experience about the way changing fuel affects the performance of a vessel.

The company was at pains to emphasise that the project is entirely voluntary.

## Bonus for LB low-sulphur fuel scheme

Carriers serving Long Beach are being offered a sweetener to sign up to the port's low-sulphur fuel scheme. A 50% bonus is being added to the subsidy that covers the cost of switching to low-sulphur fuel within a 20nm or 40nm range of the port. Port spokesman Art Wong told *P&H*: "This is to help them cover some of the extra costs involved in changing over and to get more carriers to join the scheme."

Only 17% of vessels – 20 in all – have joined since the scheme began in July 2008.

"Carriers such as Maersk have been doing it for two years," said Wong, "but others cite warranty conditions on equipment and the general cost. This new incentive applies only to the last three months of our programme – on 1 July state laws make it compulsory to switch to low-sulphur."

## MoU links Adriatic and Baltic ports

A memorandum of understanding (MoU) was signed between the Italian port authorities of Venice, Trieste and Ravenna, and the port authority of Koper in Slovenia, on 17 April.

It is hoped the move will generate co-operation between the four ports, in order to create a single multi-port gateway for ships sailing in the Adriatic Sea, increasing the potential, quality and efficiency of northern Adriatic ports.

The four port authorities have agreed to:

- Harmonise and co-ordinate common policies and activities between the ports
- Strengthen links from northern Adriatic infrastructure to European transport corridors
- Establish a network of northern Adriatic port community systems capable of integrating, through the internet, with the wider transport community
- Create a 'single-window' that guarantees inter-modality between ports
- Support the Adriatic-Baltic corridor through Ten-T

(Trans-European Network for Transport) projects. Through common policies and activities, explained a press release, the four ports will together present themselves to the international market as a unique port system for goods and passengers.

Enhancing hinterland infrastructures that connect the inland port areas with new emerging markets such as Poland, Czech Republic and Slovakia, as well as Russia, Ukraine and Belarus, is an important aim of the understanding.

"Europe has invested a lot in the idea of connecting Antwerp and Genoa," said Paolo Costa, the chairman of the port authority for Venice. "It is the right time to invest in the link [for] the Adriatic ports with the Baltic ports".

The rise of economic centres in Eastern and Central Europe will create strong opportunities for northern Adriatic ports, believes Costa. He said: "We have to transform [the] geographical centre into [the] economic centre".

## Pirates look farther afield

Somali pirates have shown themselves to be completely undeterred by the fatal shootings of five of their colleagues – three aboard a lifeboat from the *Maersk Alabama* and two aboard the French yacht *Tanit*. In both incidents special forces killed the pirates during hostage rescue operations. Somali pirates immediately vowed revenge, in one case claiming that they would slaughter any US citizens that they found.

Following the *Maersk Alabama* rescue, pirates embarked on a hijacking spree, with the latest

casualty being a Belgian stone-dumping vessel operated by Jan de Nul. The *Pompei* was seized over 700nm from shore, proving that distance is no longer any barrier to hijack.

The location of the latest successful pirate attacks has moved from the Gulf of Aden to the sea lanes off east Africa. The Gulf has seen a massive build-up of naval presence, with vessels from many countries joining the anti-piracy fight. Commercial shipping is, by and large, following the recommended route through

the Gulf, which enables better co-ordination and concentration of operations in a more narrowly defined area. That in turn allows naval commanders to move military assets – helicopters or ships – to the scene to disrupt the attacks. But although the attacks are increasingly being disrupted, the concentration of force appears to have had limited deterrent value overall.

From time to time, hijackings still occur in the Gulf of Aden. As military commanders have repeatedly emphasised, the area is not yet wholly secure.



*Maersk Alabama's master was held captive by pirates on one of the container ship's lifeboats*

## Port updates

### DP WORLD CELEBRATES

DP World Southampton has achieved two globally recognised standards in occupational health and safety and the environment. The company has been certified to OHSAS 18001, the occupational health and safety management standard, and ISO 14001, the environmental management standard, by Lloyd's Register Quality Assurance.

### REDUCING POLLUTION

Omar Benjamin, executive director of the Port of Oakland, California, said its main aim is to reduce diesel fumes by 85%. This will be achieved by installing shore power facilities at all 10 of Oakland's box terminals, fitting filters to cargo vehicles and getting rid of older types of vehicles – similar to Southern California's Clean Truck Program. The port will pay \$215M of the costs, while \$250M will come from tenants and customers, largely through container fees. Cargo operators and customers will contribute \$185M.

### TRACKING SMALL VESSELS

A congressional watchdog agency has acknowledged in a report that small vessels remain a threat to the US and are hard to track. The report from the Government Accountability Office said awareness of such threats could help the Coast Guard detect, deter, interdict and defeat attacks. It suggested that the "Commandant of the Coast Guard determine the extent to which duplicate vessel tracking information from LRIT and commercially provided long-range AIS is needed to accomplish Coast Guard missions."

### TAKEOVER AT ALGIERS

DP World took control of operations at the Port of Algiers on 19 March and it will now be known as DP World Djazair. The port, which handles more than 60% of Algeria's external trade, will be developed further to serve mainly domestic needs.

DP World has committed to redevelop the main container terminal to expand capacity to around 800,000teu, up from 500,000teu. Investments will include new cranes, equipment and training.



## Cash and Cargo

### ICTSI HALVES COSTS

Philippine port operator International Container Terminal Services Inc (ICTSI) has cut capital expenditure by 50% this year in response to the economic slowdown. Only \$50M of the planned \$100M investment to build a sixth berth at Manila International Container Terminal (MICT), plus new equipment, will be allotted. MICT is targeted to handle 25% more containers from its current capacity of 1.6M teu and to service post-Panamax ships.

### NEW ORLEANS CRUISES

The Port of New Orleans, which is still recovering from Hurricane Katrina, has taken a step forward with a long-term pact with Norwegian Cruise Line (NCL). The port announced a three-year agreement with a three-year option for continued calls by the "freestyle cruising" ships. NCL was the first line to re-commit to the 'Big Easy' following the devastating 2006 hurricane.

### INVESTMENT AT SEAFORTH

A new £5.1M ship-to-shore Liebherr gantry crane has gone into operation at Port of Liverpool's Royal Seaforth Container Terminal, increasing berthing for deepsea vessels by one-third. Together with three new Noell straddle carriers recently installed, the new crane spend takes total investment in new equipment at Seaforth to £6.5M in the last quarter.

The new crane, the sixth installed at Liverpool since 2000, will have the capability to corner onto the terminal's Berth S6, creating a fourth deepsea berth and increasing operational capacity and flexibility. It is able to handle Panamax-class cargo ships.

### PRIVATE PORTS SOAR

Ukraine's privately owned ports outperformed their state-owned counterparts during January and February, according to figures from the country's bureau of statistics, Goskomstat. Transhipments at private ports increased by 40.7% during the two months compared with the same period in 2008. Results for Ukraine's 19 state-owned ports showed a cumulative drop of 16.4%.



Photo: Hal Brown

**Completion of Oslo's new container terminal – Sjørsøya – is delayed until 2014**

## New Oslo terminal on hold

Opening of the new container terminal at the Port of Oslo has been postponed due to the global recession. "It's hard to say when it will open," Dag Sem, director of the terminal department, told *P&H* recently. It could be delayed until 2014, he added.

The first phase of the new terminal at Sjørsøya started back in January 2008. All of the port's lo-lo traffic will be handled at the new terminal and the ambitious project is part of the Port of Oslo's move to "streamline operations", according to Sem.

Improvements in freight handling, port calls, depot facilities and transport options will be delivered by the new terminal. The first phase of the new development has a capacity of 143,000teu and covers 6ha (1,000m<sup>2</sup> units).

When stage two is eventually completed, the terminal will have a total capacity of 450,000teu a year and an extra 9ha of space will be made available.

Port of Oslo plans to invest up to Nkr1Bn (\$147M) in the project. When the finances are eventually found to complete the new

terminal, it will be operated by Norsteve and Finsteve.

Four ship-to-shore cranes and nine stacking cranes will be available for use.

New warehouses for packing and unpacking containers, complete with temperature-controlled storage, are also being built at the terminal.

Substantial port areas close to the city centre will be freed up for urban development. "The port of Oslo is gradually moving away

from the old port," explained Sem. "There will be major changes both to the look of the city and to the port itself," Anne Sigrid Hamran, port director, stated in the port's newsletter. These changes include environmental improvements in the form of noise reduction walls and trees planted to obscure the port's activity.

In addition, a new cruise and ferry terminal is being planned at the port, which will be ready by 2025, according to Sem.

It should be officially approved at the end of 2010 or the beginning of 2011, with work starting in two or three year's time. "Then we can start to sell it, if the market is there," Sem told *P&H*.

The Port of Oslo is Norway's largest general cargo port and its leading container and passenger gateway. In 2008 there were 146 calls at the port from passengers coming from as many as 133 countries. In total some 2.7M passengers take ferries from the port each year.

Close to 5,000 ships dock annually at the port and most goods received from these vessels are destined for the Oslo region.



Photo: Hal Brown

**Oslo's Dag Sem does not know when the new container terminal will be opened**



## More depth for Walvis Bay

Expansion of the Port of Walvis Bay container terminal in Namibia is now close to approval, according to the port's marketing director Elias Mwenyo. Speaking at the Railways and Harbors conference held in Cape Town in March, Mwenyo said construction of phase one of a new container terminal is expected to begin in 2010, with commissioning set for 2012 and an initial capacity of 500,000teu. Constraints on the existing port site mean that, if approved, the new terminal will be developed in three stages on the sand bank that forms a peninsula facing the port.

Reclamation of 20ha would be required to provide the initial two berths with a draught alongside of 14.8m chart datum, enabling box ships up to 8,000teu to call. The project calls for further expansion in phases two and three. In 2008 Walvis Bay handled a record 200,000teu, up from 30,000teu in 2004. Mwenyo said the focus of Walvis Bay would be on feeder and transshipment container traffic, particularly utilising the three corridors into neighbouring SADC countries – Botswana, South Africa, Zambia, Zimbabwe and the Democratic Republic of Congo.

## Agreement for port bodies

The European Sea Ports Organisation (ESPO) and the European Federation of Inland Ports (EFIP) have entered into an agreement to set up a joint office in Brussels. The agreement, which was signed during an official ceremony at the Port of Brussels in April, will see ESPO co-ordinate the secretarial services of both organisations. EFIP and ESPO will remain separate legal entities and keep their independent decision-making structures, however.

The agreement is an extension of the Platform of European Sea and Inland Ports, which was established by both associations in 2007 to encourage better co-operation between sea and inland ports in the European logistical landscape and to "reinforce the voice of European port authorities in Brussels".

Patrick Verhoeven, secretary general of ESPO, told *P&H* that the joint office arrangement will provide significant benefits for



**ESPO's Patrick Verhoeven believes that ESPO and EFIP will benefit from their union at a European level**

both parties. "The agreement leads to a reinforcement of the lobby power of port authorities in Brussels. It creates synergies in terms of staff and resources for both organisations [and] provides a platform for exchange of know-how on challenges common to

sea and inland ports," he said.

Verhoeven added that the timing of the agreement was ideal given the challenges currently facing both ESPO and EFIP: "The transport agenda of the European Union contains a number of challenging initiatives for both organisations, such as the review of the Trans-European Transport Networks, the revision of the Transport Policy White Paper [and] modal policies aimed at promoting inland navigation and shortsea shipping and improving the efficiency of railway transport."

EFIP president Willy Robijns agreed that the evolution of the Platform of European Sea and Inland Ports was right for both organisations. "Both ESPO and EFIP will benefit from this joint secretariat. I firmly believe that a stronger co-operation will lead to a better understanding of their mutual needs and thus to an increased effectiveness of both sea and inland ports," he said.

## Joining up for safety equipment

TT Club has agreed to work with the Port Equipment Manufacturers Association (PEMA) to promote best practice in the design of safe port operating equipment worldwide. The move comes after PEMA's annual general meeting in Amsterdam in January, where Laurence Jones, director of global risk assessment for the TT Club, presented the results of his recent research into causes of equipment accidents and loss in the port and terminal sector. Given its position as a leading insurer globally to the marine terminal market, TT Club has a wealth of insight into the key factors contributing to such

accidents. "We are delighted to co-operate with the TT Club in increasing knowledge and awareness of such a vital aspect of the port equipment business," said Ottonel Popesco, PEMA president.

The TT Club's research showed that, although human factors were the major cause of accidents, attention to existing systems and technologies in the design of equipment could help operators avoid accidents. Jones also called for continuing development of new technology to improve the safety of personnel and equipment, citing as an example quay-crane booms colliding with ships.

## Cash and Cargo

### HHLA FEARS BLEAK 2009

Hamburg container terminal operator HHLA saw its net result jump by 43% to €217.5M last year on strong demand for cargo handling in the first six months. Turnover was up 12.4% at €1.32Bn but the outlook for HHLA in 2009 is bleak. The company, majority-owned by the City of Hamburg, recorded a 10% slump in teu lifts across its terminals in Hamburg and Odessa in 4Q08 while its liner customers are pressing for a reduction in handling charges.

### PPA BUILDS FOR RO-RO

Philippine Ports Authority spent 7.2Bn pesos (\$150M) on locally funded port projects in 2008, most of which were focused on developing facilities related to the government's nautical highway project.

The PPA said the project is in fulfilment of president Arroyo's commitment to establish nationwide ro-ro links for a more effective transport network. Fifty-two out of the 84 ro-ro port projects were completed at a cost of 3.9Bn pesos.

### SMIT SEES OPPORTUNITIES

"The declining market will offer opportunities for takeovers," Smit Internationale's CEO Ben Vree stated, while reporting another record year in 2008, with net profit up from €105.6M to €107.8M.

"Despite a major increase in our depreciation charges and the low US dollar rate, it underlines the success of the strategy we adopted of synergy and focusing on our more stable activities," Vree said.

### DP WORLD RETURNS

With throughput up 15% to 27.7M teu in 2008 and revenue climbing 20% to \$3,283M, terminal operator DP World reported great results – but warned of a challenging year ahead.

Consolidated after-tax profits rose by 48% to \$621M, but volumes were down during the last quarter of the year. Chief executive officer Mohammed Sharaf warned that "volume decline has continued into 2009. In the first two months of the year we've seen an average fall of 8%."

## People

### NEW CHAIR IN DELAWARE

The Delaware Senate in the US has confirmed Alan Levin, director of the Delaware Economic Development Office, as the new chairman of the Diamond State Port Corporation's (DSPC) board of directors.

Established by the State of Delaware in 1995, the DSPC owns and operates the Port of Wilmington, which is the largest banana port in the world and the country's leading gateway for the import of fresh fruit and juice concentrates.

### IMAREST'S NEW PRESIDENT

Michael Everard, a major player in the shipping industry over many years, was appointed the 107th president of the Institute of Marine Engineering, Science and Technology at its 120th anniversary AGM in March, taking over from Professor Yoo Sang Choo.



## APM trials hybrid tractor in the US

A new and environmentally friendly 'yard hostler' (tractor) is to be tested at APM Terminals Port Elizabeth, New Jersey, US.

The Series Hydraulic Hybrid Yard Hostler was developed as part of the US Environmental Protection Agency's Clean Automotive

**The tractor could save more than 3,800 litres of fuel a year**

Technology Program. It is claimed as the first use of this technology in a freight transport vehicle.

"APM Terminals places a high priority on environmental stewardship in managing our business and we are proud to partner with the EPA on this innovative project," said Eric Sisco, president of APM Terminals Americas. "We are continuously looking for ways to improve our environmental performance and will aggressively pursue projects that increase our efficiency and allow us to preserve and improve the environment."

The EPA anticipates that each high-efficiency tractor could save over 3,800 litres of fuel each year, improve stop-and-go fuel efficiency by 50–60%, and also reduce emissions of greenhouse gases by more than 30%.



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Photo: Oliver Sesemann

**Prinsendam leaves Amsterdam... sustainability is key to the port's new environmental policy**

## Amsterdam's plan: clean and green

The Port of Amsterdam has developed an environmental policy plan for the period between 2008 and 2012. The plan's title translates into English as *Sustainability: Boldness, Action and Resolve* and the plan fits in with the city-wide environmental policy plan that has been adopted by the City of Amsterdam.

The new plan from the port authority has also fleshed out part of the sustainability theme found in the Port Vision 2008–2020 plan (see *P&H*, March issue, page 14) and, according to a press release, has received clear support from all parties involved.

It is now expected to receive the green light from the city council. In developing the plan, the Port of Amsterdam has consulted all stakeholders, including environmental groups, industry organisations, city departments, city-district

governments, regional players and central government. Much of their feedback has found its way into the plan.

According to the press release: "The consultation process has also involved other seaports in the Netherlands. All Dutch seaports have agreed to adopt a uniform policy for maritime shipping and barging, with a particular focus on, among others, cleaner maritime shipping and barging. The ports will not compete on environmental policy, but share their knowledge."

The plan will cover:

- Physical and environmental space – the port will make a proportionate contribution to the City of Amsterdam's objective of reducing carbon dioxide by 40% in 2025 (compared with 1990)
- Greener maritime and river transport – including an increase in the number of shore-power

outlets for river barges and river-cruise vessels. The port authority will also consider shore-based electricity to sea-going ships

■ Barging and rail transport – the port will concentrate on encouraging sectors of the economy and goods flows that are currently making little use of hinterland transport by river barge or rail

■ Hazardous materials – enhancing safety and security surrounding them. In addition, the Port of Amsterdam will professionalise its berthing policy for sea-going ships and barges carrying hazardous materials, with more staff available to enforce rules and regulations

■ Sustainability – Port of Amsterdam is keen to take the lead in sustainable operation. As part of its effort, the port authority aims to become a carbon-neutral organisation by 2015.

## LA incentivises rail cargo

The Port of Los Angeles is launching an intermodal container incentive programme that will pay shipping companies \$20 per teu for each additional container they bring into the port by rail in excess of their 2008 level. Intermodal cargo accounts for just over 40% of the total container volume at the nation's largest container port. The new incremental incentive programme began on 1 May and is expected to cost \$900,000.

"Given the nation's current economic climate, we need to help our steamship lines," said the port's

executive director Geraldine Knatz. "Coupled with the recent rate reduction for our terminal operators, this new programme will help the port remain competitive," she said.

The initiative is the second of two year-long cost reduction programmes introduced by the port this year. An intermodal discount scheme took effect in February and gave terminal operators a 10% discount on each container they transported to or from the port by rail. That programme is retrospective to 1 January 2009 and is expected to cost \$13M.

## Port updates

### FIRST CHIEF AT CANAVERAL

The Port Canaveral Police Department has a new chief. Appointed in April, Joseph Hellebrand has a 30-year law enforcement background. The Canaveral Port Authority Board of Commissioners established the department in late 2008 to enhance public safety. "The formation of the Police Department is simply the next step in the evolution of public safety at Port Canaveral in the aftermath of 9/11," said port CEO Stan Payne.

"Canaveral has the unique challenge of maintaining a secure environment for both commerce and recreation and the department's blend of law enforcement officers, seaport security officers and public safety officials clearly is the best structure to meet these changes."

### CENTURY FOR PLA

The Port of London Authority (PLA) celebrated a century of service to the tidal Thames with *A Century Of Service* exhibition at the Museum of London Docklands in April.

Images, films and other archive material told stories from Polar expeditions to 1930s Christmas parties. PLA CEO Richard Everitt said: "Since the first Londoners settled on the banks of the Thames thousands of years ago, the river has fed, supplied and transported them. It still fulfils this vital task today."

### CPT IS NOW ACT

Ceres Paragon Terminals (CPT) was renamed Amsterdam Container Terminals (ACT) in March, while Ceres Amsterdam Marine Terminals became Amsterdam Marine Terminals. The name changes arose from a share-swapping agreement in which Hutchison Port Holdings became the majority shareholder of Ceres Container Terminals Europe.

### NO CONTAMINATION

Fears of contamination from the 54-ship 'ghost fleet' in Suisun Bay, California, appear unfounded. A March National Oceanic & Atmospheric Administration study said the bay bottom beneath the ships is no more polluted than other nearby waters.

## Dredging

### OAKLAND FUNDED

The Port of Oakland, US, has been voted \$32M in federal funding by the House of Representatives, of which \$25M will go to a harbor dredging project. The proposal still has to be approved by the Senate and the President. Together with \$7M expected from the recently passed Stimulus Act, the money will be enough to finish deepening the main port channel to 15m in 2009 from 13.5m.

### DEEPEN FOR DOWNTURN

"One effect of the global recession may be that, as shipping lines consolidate their operations, larger vessels arrive in New Zealand sooner than anticipated," Ports of Auckland MD Jens Madsen told *P&H*. Madsen has applied for consent to deepen a Fergusson Container Terminal berth as soon as possible.

### PAKISTAN CONNECTIVITY

China Harbour Engineering Co (CHEC) has signed a deal with Pakistan's newly established National Dredging Company (NDC) to execute a project to connect Karachi with Kalabagh – cutting transportation time and costs from the north of the country. Pakistan has asked the Asian Development Bank for financial assistance for the project that will see CHEC help NDC dredge the ports of Karachi, Qasim and Gwadar, plus canals and rivers.

### MICHIGAN EYES CASH

Michigan's lawmakers have set their sights on over \$95M of president Obama's stimulus package for much-needed dredging – including a \$30M bid for St Mary's River; \$5M for Michigan harbor and over \$11M for dredging of the Detroit, Saginaw, St Clair, Rouge and Clinton rivers.

### FUNDING VIRGINIA

Senator Jim Webb has obtained nearly \$10M for critical maintenance dredging of the inbound channel at Norfolk Harbor. In addition, \$1.3M has been obtained for Virginia Beach hurricane protection that will enable beach monitoring to continue as well as pay for initial renourishment.



Limited reception facilities results in dumping, say operators

## Blocks to MARPOL compliance in US

Vessel operators at a USCG hearing in March stated that inadequate shore reception facilities are a major problem and asked the US government to use some of the massive oil dumping fines recently collected to improve the situation in its ports. Capt Rob Lorigan, VP of operations compliance at OSG Ship Management – which has itself been penalised with massive fines – complained that too many shoreside reception facilities take days to test waste before agreeing to accept it. He told *P&H* that some terminals will allow offloading of waste at some piers, but not at others.

"After conducting cargo

operations at one pier, it's often difficult to move to another pier just to offload oily water," he said, noting that some terminals do not want vessels coming alongside just to offload waste.

USCG Cmdr Michael Roldan called the hearing a brainstorming session, adding that he welcomed the comments. "We need to work together to make this programme effective and workable," he said. One issue that the USCG noted was that few complaints about specific refusals to accept waste had been received. He and Capt David Condino said that over the past two years "only nine documented reports of inadequacies" had been received

by the Coast Guard through IMO channels. "There have also been some anecdotal reports," he said, "but they have often been after the [event]."

Roldan urged vessel operators and captains to advise the USCG captain of the port of any problems experienced while still alongside in the port. "Then, we might be able to do something to fix the problem while the ship is still in port."

As to notifications, Elizabeth Bouchard, marine policy adviser for International Registries, which administers the Marshall Islands flag, told the hearing that owners of all 1,900 Marshall Islands-flagged ships (500 of which visit US ports) have recently been urged to use the standard IMO form to report reception facility problems if required.

Roldan added that there are presently 2,130 ports and terminals in the US that have "certificates of adequacy" (COAs) attesting to functional reception facilities. He acknowledged some complaints but said that while fines have been levied against non-compliant facilities and letters of warning written, no COAs have yet been revoked. He noted that a port or terminal would not be able to accept ship calls if the COA was withdrawn.

One further suggestion to come from the carriers was that the USCG combine advance notifications of intent to offload waste with the electronic advance notice of arrival that is already mandated.

"That would simplify the process," Lorigan commented. Roldan said the issue will be further discussed at the Chemical Transport Advisory Committee meeting in April.

## Safe getaway for Oz nuclear waste

Port Kembla has successfully handled its first shipment of export nuclear waste after the New South Wales government decided to abandon the previous practice of shipping through Port Botany.

The 159 used fuel elements were packed in an undisclosed number of containers. These were trucked 56km to Port Kembla from the Australian

Nuclear Science and Technology Organisation's (ANSTO) Lucas Heights reactor in southern Sydney in March. The operation was overseen by 400 police and road authority staff and a helicopter.

The radioactive material was loaded on to the small Danish-owned general cargo ship, the 2,120dwt *Lynx*, built in 1994.



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# Maintaining the green momentum

**Oh Bee Lock**, senior vice-president of corporate planning at PSA Singapore Terminals, explains why sustainability is key for ports' green activities

**T**he maritime industry has prospered from the boom in international trade since the launch of containerisation in shipping more than 50 years ago. Today, seaborne shipping accounts for more than 90% of global trade. It will continue to play a significant role despite the current global downturn and will continue to be the most used mode of transport for world trade.

The maritime industry has a stake in ensuring that shipping remains the most secure, efficient and environment-friendly mode of transport. Sustainable growth is therefore intertwined with the environment. Risks to this environment include potential oil and gas spills from tankers, waste and ballast water discharges at sea, reclamation and dredging works for port development and shipborne air pollution by greenhouse gases (GHGs).

Increasingly, ports, shipping lines and equipment manufacturers recognise green efforts as good business practice, and some even see it as a competitive advantage. Having green initiatives is a good start, but as in all programmes, sustainability is key. This must be realised at an international level and the international playing fields and rules are being established through numerous organisations and programmes, most of which are UN-related.

The International Maritime Organization (IMO) remains an important platform to address environmental challenges. In recent years, the IMO has been tackling air pollution and, through the provisions contained in Annex VI of the International Convention for the Prevention of Pollution from Ships, has set mandatory limits on sulphur and nitrogen oxide emissions from ship exhausts and prohibits emissions of ozone-depleting substances.

The industry itself has stepped up its commitment. Maersk, for instance, has recently announced that an \$18M programme to switch its vessels from 'bunker' fuel with relatively high sulfur content to low-sulphur distillate fuel has resulted in an 86% annual reduction in particulate matter, a 95% reduction in sulphur oxides and a 12% reduction in nitrogen oxides.

Carbon emissions and fuel efficiency are linked. CMA CGM's latest 11,500teu ship, *CMA CGM Andromeda*, is reported to be the greenest, most efficient and most cost-effective container ship in the world. Its electronically controlled main engine ensures savings of 25% on fuel consumption and 3% on lubricants. Its optimised hull design and twisted leading edge rudder bring about another 4% reduction in fuel consumption.

Organisations such as IAPH have also stepped up efforts to encourage the green movement. Its web-based guide – IAPH Tool Box for Port Clean Air Programs – provides useful strategies that help reduce diesel emissions, improve air quality and tools that give basic knowhow on implementing clean air initiatives.

PSA Singapore Terminals (PSA) believes that for a company to thrive and sustain in the long run, it has to be accountable to the immediate business environment in which it operates as well as to the global community. It is obvious that sustainable development does not take place independently of our community. From a container terminal operator's perspective, the key areas that PSA Singapore Terminals has focused on are its people, infrastructure and equipment. Protecting the environment is a global issue that requires everyone to make an effort. However, it also needs to be tackled in a holistic manner with a multi-pronged approach.



**PSA believes that green activities lead to good business practice**

PSA's commitment to long-term sustainable growth has led it to focus on reducing the use of fossil fuels in its infrastructure development and equipment, to use cleaner sources of fuel where feasible, and to foster a 'green-conscious' culture among its staff.

One area identified is the use of equipment and this equipment's reliance on diesel. Like other ports around the world, PSA has moved to low sulphur-content fuels in its terminals and is adhering to sulphur emission control areas. PSA's prime movers are compliant with either Euro III or Euro IV European emissions requirements. The use of cleaner fuel will result in reduced emissions of sulphur, which is one of the leading contributors to the problem of acidification.

Another key initiative is to explore where it can be more efficient and to reduce any slack in fuel usage. For example, PSA is phasing in fuel-saving devices on its fleet of diesel-operated rubber-tyred gantry cranes (RTGs). These devices regulate the engine speed according to load, and help reduce fuel consumption during idle





Photo: PSA

periods. Past trials have shown an overall reduction of 12–15% in fuel usage.

PSA is also introducing electric RTGs to replace some of its diesel-powered versions and is considering converting more of its RTG fleet to run on electricity.

Buildings and port infrastructure figure prominently in PSA's drive to be more energy-efficient. Green building technologies and practices are being adopted in some of PSA's newer buildings under Singapore's Building and Construction Authority (BCA) Green Mark Scheme. For example, a rainwater collection system has been implemented in our engineering workshops to utilise and recycle non-potable water for the washing of vehicles and equipment.

In addition, PSA conducts regular audits to identify areas for energy conservation. Projects resulting from these audits include installing energy-efficient light fittings on the lighting masts and the use of natural day-lighting systems in its new engineering workshops and

stores. To inculcate a mindset for energy conservation and sustainable practices among all staff, PSA began energy-efficient and green awareness campaigns in 2007, which gathered more momentum in 2008 and 2009.

The hope is that with greater awareness, staff will proactively help reduce waste produced in the workplaces and find new ways of doing their jobs in more efficient and sustainable ways.

At the national level, PSA works closely with the Maritime and Port Authority of Singapore (MPA), the National Environment Agency and other partners and related agencies. The port operator or regulator is usually the first line of defence in the potentially environmentally damaging events of waste or oil spillage.

The MPA has invested time and capital to carry out regular multi-agency joint simulation exercises. It also introduced an aerial dispersant aircraft in October 2008, to further ensure a swift and comprehensive response to oil spill incidents, should preventive actions fail.

As an industry, the potential scope of environmental improvements for ports extends beyond merely reducing GHGs. Reducing the generation of environmental waste and the risk of environmental pollution through spillage, being mindful of any potential marine damage through better management of coastal activities such as reclamation and dredging, and being part of the growing chorus encouraging the maritime industry to move towards cleaner fuels all require a concerted effort.

The measures we have put into place are a step in the right direction. But more can be done. Being 'green' is a mindset that begins with people and the way in which they work to achieve excellence with sustainable greener practices. As the world's largest transshipment hub, PSA respects the code of best practice for environment management. We shall continue to enhance our port efficiency so that our customers enjoy high service levels and an environment that they enjoy doing business in. **PH**

# Boxing up bulk cargo

Containerisation opens up options for bulk exporters and can help overcome port and logistical challenges, reports **Terry Hutson** from South Africa

**C**reation of a new terminal near the port of Maputo to tranship bulk ores into containers for export is the latest in a number of similar developments aimed at overcoming port and logistical challenges throughout Africa.

These challenges can be the result of a lack of capacity and infrastructure, or, as has been the case in South Africa, the unwillingness of the railway network to handle certain bulk items along some corridors.

The geographic position of Mozambique's Port of Maputo makes it the logical gateway for South African mining and agricultural export and import activities from neighbouring provinces such as Limpopo, Mpumalanga and even South Africa's industrial heartland of Gauteng.

Other major ports in South Africa, such as Durban, are also following the trend towards containerising bulk commodities – in a similar way to fruit exports, which have steadily migrated from specialist reefer ships to containerised reefer cargo.

particularly smaller shipments of specialised ores. However, some substantial volumes of manganese, magnetite and even coal are now being shipped in the ubiquitous box.

The recent opening of the new Mahotas Terminal at Maputo for the South African-based Super Group has provided an outlet for mines that were previously unable to gain access to export markets. It is strategically situated alongside improved land transport links to South Africa, Zimbabwe and Zambia.

Development of the terminal and the method of containerising ores will go a long way to furthering the appeal of Maputo as a port of choice for South African exporters, said St John Baxter, chief executive officer of Trans Africa Logistics, the Super Group division with responsibility for the new Mozambique operation.

Baxter said that the Maputo terminal is targeting on-site containerisation of bulk minerals brought in by rail from South Africa for export.

Much of this cargo is arriving from South Africa's northern mining areas, notably Steelpoort, but also from Rustenburg to the west of Pretoria, for which the Port of Maputo is now more readily accessible in terms of distance and time than other ports such as Durban or Richards Bay. In any case, the latter port lacks

facilities for container handling.

Facilities on the site of the Mahotas terminal, constructed almost 40 years ago for the then state-run CFM rail corporation, were reopened to private enterprise in the late 1990s, but expansion there was hampered by the reluctance of the City of Maputo to allow access for road transport. The city feared that its inadequate road system would deteriorate further. In the meantime, the rail service was also in decline, preventing significant development of the port.

Meanwhile, talks aimed at privatising the southern Mozambique railway system dragged on.

Many of these issues were finally settled when CFM cancelled existing railway concession contracts or preferred bidder agreements with private consortia and took over the rehabilitation of the network between South Africa and Maputo, and also the lines to Zimbabwe and neighbouring Swaziland.

At the same time, considerable energy went into improving road access between the South African border and Maputo, while an extensive marketing programme set out to woo South African mining

Substantial volumes of manganese, magnetite and coal are now being shipped in the ubiquitous box

Until recently a lack of modern facilities and infrastructure both inside the Port of Maputo and its immediate hinterland, coupled with poor transport links, was the stumbling block to the port's progress with bulk commodities.

Now under private management, the port has been fully modernised and re-equipped and is capable of handling ships with draughts up to 12.5m. It benefits from modern container terminal facilities both inside the harbor and nearby.

Of equal importance, road and railway connections between South Africa and Maputo and between the port and Zimbabwe have undergone complete rehabilitation, with the only outstanding item being the antiquated border crossing facilities between South Africa and Mozambique.

Customs and revenue authorities from both countries say this is receiving urgent attention and a one-stop modern border post can be expected within 12 months. Despite these developments, many mines in South Africa are opting to send ore exports out of the country as containerised cargo,





houses and the agricultural sector into using the Maputo Corridor as their preferred choice.

Mahotas terminal is serviced by a railway line feeding in directly from the Port of Maputo and lies astride the main line to Zimbabwe. Shunts to and from the port are carried out using dedicated rolling stock to ensure both availability and full security, and the terminal is bonded, with customs officers on site.

According to Baxter, a 5,000m<sup>2</sup> concrete slab was recently laid in the terminal to enable the introduction of modern container handling equipment capable of lifting both 20ft and 40ft containers. Railway wagons arriving from South African mines are taken under an excavator constructed on stilts that straddles the line and ore is then moved by a conveyor system to hoppers for loading directly into containers.

A number of forklift vehicles are provided for handling general cargo.

"We obtain empty containers via rail giving us direct connectivity with Maputo International Port Services (MIPS), the DP World-operated container terminal in Maputo, and once loaded these are returned to the port for export, providing a seamless operation," he said.

Baxter said the Super Group is also targeting mineral cargoes from Zambia, which would be railed in bulk to Maputo for loading into containers for export.

The Maputo terminal is similar to another new development at Ladysmith, about 220km from Durban, which is owned and operated by private logistics company Nzenga Junction. The site is an old railway marshalling yard, but today chrome ore and other minerals are trucked into Ladysmith from the distant Northern Cape mines and transhipped into containers for despatch by rail to the Durban Container Terminal. This has the advantage of removing a large number of trucks from the streets of Durban, where road congestion around the port has become chronic.

Nzenga's executive chairman, Nathi Thusi, told *P&H* that agreements have been reached with Transnet Freight Rail to run shuttle trains between the terminal at Ladysmith and the Durban Container Terminal. He said the containerising of bulk ores at Ladysmith brought savings in overland transport but also meant that Durban was available as a port for export of these commodities. Benefits to truckers include less mileage, fewer tolls to pay and quicker turnaround times.

Interestingly, the Durban Coal Terminal, which has been in existence since the late-19th century, has also begun handling containerised cargoes of ore, including specialised sized-coal parcels. These are loaded into containers at the mines and railed to the coal terminal, where specially adapted container gantry cranes are used to tip the contents of the containers into ship holds.

This terminal, operated privately by Bidfreight, has gone down this route in recent years because of the difficulty in obtaining sufficient railway wagons to bring sized-coal shipments from the mines to the port – the rail company's story being that it lacks sufficient coal wagons and that coal should be exported via Richards Bay.

On the other hand, Richards Bay Coal Terminal (RBCT) has generally declined to handle small shipments of sized-coal while the ability of additional mining houses to gain access to RBCT has been severely hampered.

By making use of containers from the mines to the port in this way the problem is being overcome to some extent. **PH**

**The Durban Bluff coal terminal has converted equipment to load coal into bulk carriers. Open-top containers loaded with coal are used to tip the ore into the vessel hold**



Photos: Terry Huston / DP world



Photo: TNO

## Capture and keep safe

A new opportunity beckons for the world's ports as CO<sub>2</sub> is increasingly traded and transported for safe environmental disposal. Journalist **David Worwood** reports

**Caught up... TNO's CATO CO<sub>2</sub> catcher at an E.ON Benelux site in Rotterdam**

**J**ust as some terminals currently cater for liquefied natural gas, larger ports with industrial hinterlands could soon become CO<sub>2</sub> hubs, accommodating specialised shipping terminals and storage facilities for onward movement of the gas.

This scenario may be a lot closer than people imagine and the key to its development is carbon capture and storage (CCS) – the technology that strips CO<sub>2</sub> from fossil fuel emissions and sequesters the gas in underground strata. Because renewable energy capacity takes time to come on stream, countries struggling to cut their carbon emissions will almost certainly resort to CCS as a stopgap measure.

The final resting place for the greenhouse gas is based on the location of empty oil or gas fields, rather than port position.

A glimpse of how things may develop comes from northern Europe. By 2012, Rotterdam-based power stations will probably generate about 7,000MW (molecular weight) – a doubling of output in only 12 years. A further motivation for carbon reduction stems

from the Rotterdam Climate Initiative, which is pushing for a 50% cut in CO<sub>2</sub> emissions by 2025.

The regional and local authorities in Rijnmond ('Rhine mouth'), which encompass the Port of Rotterdam, are keen to take on the challenge. The authorities' environmental protection agency, the DCMR, is targeting an annual 20M tonnes of CO<sub>2</sub> for capture and sequestration by 2025. This would soak up 43% of the CO<sub>2</sub> emissions from the port and city for that year. It is planned to store the CO<sub>2</sub> in empty or depleted natural gas fields in the North Sea, where the Dutch sector alone could provide close to 1Bn tonnes of storage capacity – sufficient for 50 years.

The target for 2015 is a more modest 5M tonnes, and 15M tonnes could be achieved by 2020.

Maarten de Hoog, director of industry with the DCMR, firmly believes that "CO<sub>2</sub> will be the next commodity". He envisages a North Sea network of pipelines that will carry the gas and connect Norway, the UK, Germany, Denmark and the Netherlands.

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the World Ports Climate Conference (WPCC) last July, de Hoog said the plans started in 2006 with the Port of Rotterdam Authority's 'Energy Port' concept. This recognises that because power generation capacity is going to rise substantially, the resulting CO<sub>2</sub> emissions will have to be addressed in line with the Kyoto Protocol and European Union (EU) legislation.

"When we want to tackle the climate issue, CCS is unavoidable. We'll need it for several decades to realise our CO<sub>2</sub> targets worldwide – not only in Rotterdam but also in other countries and ports," de Hoog told *P&H*.

For various reasons, including fuel supply and availability of cooling water, port areas increasingly attract power stations. If the power facilities introduce carbon capture, the gas could then be transported to storage in depleted gas fields, unmineable coal beds or injected into oil fields to produce enhanced oil recovery (EOR). Areas such as the northern North Sea and the Middle East have strong potential for EOR.

Vessels transporting CO<sub>2</sub> for EOR in the Middle East could carry compressed natural gas as back-haul cargo. A port such as Rotterdam could also bring in CO<sub>2</sub> from Germany and Antwerp.

"Industrial ports become the point where it all comes together – the fuel, the power generation, the storage capacity and the transport for the CO<sub>2</sub>," de Hoog commented. "Ports will become the most important facilitators for the development of CCS."

Investing in appropriate CCS infrastructure – which include CO<sub>2</sub> pipelines and storage terminals – could pay dividends for forward-looking port authorities, as it would attract industries that need to dispose of their carbon emissions. International co-operation is also likely to prove important.

Worldwide, significant experience already exists in EOR techniques and in transporting and storing CO<sub>2</sub>. The Dutch also have plans to sequester the greenhouse gas onshore in empty gas fields in the north of the Netherlands and at a demonstration project site at Barendrecht, near Rotterdam. Environmental assessments for the latter project, conducted by Royal Dutch Shell, were submitted to the Dutch authorities at the end of last year and are undergoing consideration. A Shell spokesperson told *Ports & Harbors* that the majority of objections to the scheme are mostly focused on concerns about safety. The company now has to promote the project to local parties in a positive light and convince them that it is, as it claims, "very safe".

Barendrecht could start injection in late 2011, depending on permits being issued; at present, 20 draft permits are already under review. By the end of this year,

Shell will know whether the project will go ahead.

Rien Herber, VP of Shell Exploration Europe, told *P&H* that 400,000 tonnes of CO<sub>2</sub> a year, and 10M tonnes in total, will be injected into the Barendrecht site after capture from the company's Pernis refinery located near Rotterdam harbor. Shell has a number of other CCS projects in development.

Herber said that "no real technical challenges" remain over Barendrecht. Pernis is already capturing 380,000 tonnes of gas for OCAP (Organic Carbon Dioxide for Assimilation of Plants) in commercial greenhouses, and 150,000 tonnes for the soft drinks industry.

"Compression, transport and injection of gases including CO<sub>2</sub> are already familiar technologies in the oil industry. Capture of CO<sub>2</sub> from diluted streams like flue gases from boilers and turbines, however, still needs research and development effort to improve on cost and energy use."

After gas injection has finished, the companies involved will have to monitor the fields for safety and non-leakage of gas. Typically, this takes three to four years. Herber suggests that in the longer term the government will have to step in to accept liabilities, although, he added, "the legal framework for this is still maturing".

Introducing CCS will not be cheap. The Rijnmond authorities believe a price of €45 per tonne of CO<sub>2</sub> within the European Union's Emissions Trading Scheme (ETS) should create market incentives for removing 20M tonnes. To date there has been some fluctuation in the price of EU emissions allowances – for instance, they sank below €10 per tonne in February on the back of the economic slump. This is worrying for the development of CCS projects.

Herber confirms that the ETS is important to the Barendrecht project to recover part of its costs. The future direction of the trading scheme will be influenced by the outcome of the UN's climate change conference in Copenhagen, scheduled for December.

Rijnmond is hoping that the Dutch government will invest in pipeline infrastructure. Furthermore, a €30M government subsidy is alleged to be promised once the project is fully operational.

The European Commission is providing subsidies for large-scale demonstration projects throughout Europe. In March the EU confirmed €180M for the Netherlands' carbon capture projects. A European coal-fired power station may need to spend around €500M to add carbon capture technology. To remove 20M tonnes of CO<sub>2</sub> each year, four 1,000MW coal-fired power stations need to be equipped. Despite the price, some experts argue that CCS remains the most cost-efficient way to reduce carbon dioxide emissions – at least in the short to medium term. **PH**



Photo: Michelle Muus

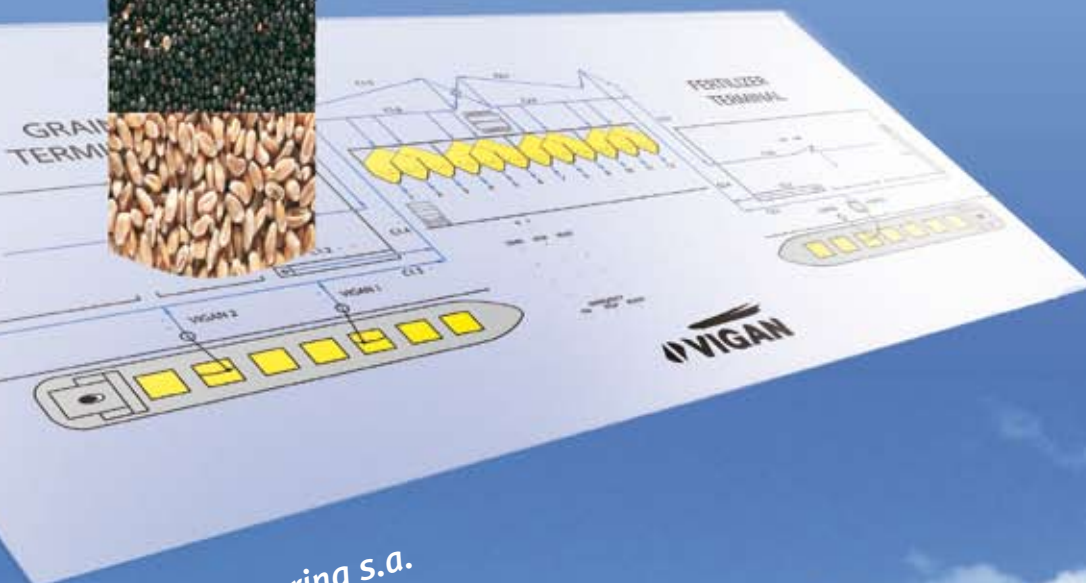
“Ports will become the most important facilitators for the development of CCS”  
**Maarten de Hoog**





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Photo: Port of Houston

## Do away with 'waste'

*P&H* spoke to Dr Lindsay Murray about the ways ports can benefit from reusing dredged material

**Birds now breed on Evia Island, Galveston Bay, which was created in 2000 from dredged sediment**

**D**redged material is increasingly being viewed in a more positive light. Now that it is less likely to be considered 'waste', there has been a transformation in the way the developers and those responsible for regulation are viewing this valuable by-product. That in turn has paved the way for new, alternative uses to be developed.

The World Association for Waterborne Transport Infrastructure (PIANC) issued a report in 1992 that offered some guidelines to developers. The association was prompted to update this information, because "things have moved on", Murray told *P&H*. To increase industry understanding of the issue, PIANC published

a report earlier this year entitled *Dredged material as a resource*, which provides examples of good practice.

Dredging is essential for the maintenance and development of ports, harbors and waterways. The activity creates large volumes of material, most of which is clean, but some of which is contaminated and so must either be disposed of or de-contaminated.

Depending on the type of clean material dredged – rock, gravel, sand or silt, for example – it can be put to a variety of uses, and "should be seen as a material in its own right", Murray commented. Many development projects require construction materials and often these are similar to those created by dredging.

## The way forward

PIANC recommends the following in order to remove constraints on the use of dredged material:

- **Communication** – it is important to gain support from the public, regulators and wider stakeholders to view dredged material as a valuable resource
- **Economics** – there should be recognition of the

contribution that use of dredged material can make to the conservation of primary resources

- **Legislation** – national policies should not classify dredged material as waste by default
- **Management and planning** – the availability of dredged material is essential

- **Supply and demand** – the supply and demand for dredged material should be co-ordinated at both the local and regional levels

- **Understanding** – the environmental benefits of, and the enhancements possible with, the use of dredged material should be promoted.





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## Case study: Galveston Harbor

Navigational improvements were carried out to the Houston Ship Channel and Galveston Harbor and Channel, including widening and deepening the channels. Large quantities of dredged material were generated as a result and these were used in the creation of numerous sites, including the construction of offshore berms for beneficial use, bird islands, saltwater marshes and other habitats for a variety of wildlife species.

## Case study: Onomichi-Itosaki

Since the 1970s, the Port and Harbor Bureau, Ministry of Transport, Japan, has promoted the creation and restoration of tidal flats. More than 1,000ha of tidal flats have been constructed, chiefly by using the sand fraction of dredged materials.

About 46% of the dredged material from the ports – 26.6M m<sup>3</sup>/year in 2003 – is dominated by silt and clay fractions, so the restoration, conservation and creation of shallow-water habitats has proved to be an efficient use of this resource.

In the 1980s the Port of Onomichi-Itosaki faced a demand for the creation of shallow water, which it was able to fulfil using the silt-clay rich sediment from the port as a base layer. This layer was then capped using sea-bottom sand. The combination of the organic-rich and fine-grained base materials and the sea-bottom sands serve to enhance the area's bio-diversity.

Monitoring was implemented during the construction phase and subsequently. Furthermore, local people maintained the original topography by reshaping the tidal flat.

Murray described two potential benefits for ports reusing dredged material:

- 1) Economic – if ports can combine other projects alongside dredging activity, material gained from dredging can be used in other ways
- 2) Environmental – putting back material taken from the same area to sustain natural processes.

Some countries make wider use of dredged material than others, the report notes. Some even exceed the amount of dredged material available locally, and in Japan more than 90% of dredged material is used. By contrast, a 2005 survey by the Central Dredging Association (CEDA) revealed that in Europe less than 10% was being used directly.

Murray clarified that this figure rises to more than 30% if dredged material put back into river and near-coast systems is included. As this contributes to the maintenance of the system's sediment supply, in many

cases it may be the best solution both environmentally and economically.

The report acknowledges that certain circumstances can restrict the widespread recycling of dredging by-products. Such materials need to be of appropriate quality and in sufficient quantity. Availability is also cited as a potential drawback, as the timing of a capital or maintenance dredging project rarely coincides with the timing of other projects.

It also cites legislative restrictions, often not directly related to the use of dredged material, to be problematic in some circumstances.

To maintain momentum, the supply and availability of sediment is important, especially in areas that have already adopted a precedent for using dredged material. "It may also be necessary to modify the design of the project to match the characteristics of the sediment available," the report suggests.

The report notes that good communication, foresight and the initiative to match demand and supply of dredged material are significant success factors in the recycling of such material. Murray hopes that ports, and other developers, will look for synergies with other projects so that reusing dredged material can be considered a more practical option.

"This is not happening as much as it might," she said, commenting that a mechanism is needed to co-ordinate this activity.

Murray told *P&H* that the biggest challenge now is changing public perception. Capping a landfill site with clean sand is unlikely to be controversial, but there may be negative public reaction to the use of dredged material. "This is something that we will have to work around to change," she acknowledged. **PH**

*Dr Lindsay Murray is chairman of the PIANC working group and director of the Environment and Ecosystem Division at Cefas (Centre for Environment, Fisheries and Aquaculture Science). For more information on the report and case studies, go to: [www.pianc.org](http://www.pianc.org)*

**Below: Port of Baltimore has been making use of its dredged material, as seen here at James Island, Chesapeake Bay**

**Dr Lindsay Murray of PIANC**



Photo: Port of Baltimore







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Photos: Tony Slinn

# Dredging tomorrow's dimensions

The enormity of the Panama Canal expansion masterplan cannot be underestimated and the dredging of 53M m<sup>3</sup> of material is already under way. **Tony Slinn** reports

**Dredging International's Vlaanderen XIX removes the soft overburden at the Pacific entrance to the canal. Beyond, the Bridge of the Americas sets the scene**

**A**s the world's ports prepare for a widened Panama Canal, the Panama Canal Authority (ACP) also has a heavy workload for the next five years to make the canal accessible for vessels 49m wide, 366m length overall and with a 15.2m (tropical freshwater) draught. The dredging – which is already under way – includes excavating 20M m<sup>3</sup> in Gatún Lake; 9M m<sup>3</sup> in the Gaillard Cut; 9.1M m<sup>3</sup> from the Pacific entrance, as well as other dredging work for terminal development and expansion.

Each of these individual projects presents its own challenges, but the area cited as the most challenging is the Gaillard Cut. "Every dredger who has worked in the Panama Canal will tell you the same thing: the Gaillard Cut is the battleground, the Achilles heel if you like – and it's my biggest concern," said Capt Peter Marotta, who is in charge of mechanical dredging.

"In the 'Cut' our scope of work includes dredging to 17.5m from 14.6m and widening from the present minimum of 192m to a new minimum of 218m in the straights and 268m in the curves," Marotta explained.

"We are straightening the curves too, though that's part of the [\$1.8Bn and near completion] modernisation scheme rather than the expansion programme."

The work means softening some banks' angle of repose – the maximum angle of a stable slope determined by friction, cohesion and the shapes of soil particles. Even after 95 years, areas of the Cut have yet to reach a stable state, especially given the huge annual rainfall, and this can lead to landslips. Today, modern technology helps the ACP predict where slips are likely, though they still occur.

To carry out this development, Marotta has the world's biggest dipper dredger, two drill barges, a backhoe dredger on charter and a variety of ancillary vessels such as tugs, launches and barges. His tasks include assigning and reviewing dredging areas, co-ordinating tugs and barges, logistics and providing reports to the contract offices. However, one of Marotta's most important responsibilities is making sure that everyone complies with the canal authority's stringent safety and environmental programmes.



## Panama dredging

1. Caribbean Sea/Atlantic entrance
2. Gatún Lake
3. Gaillard Cut
4. Pacific entrance



"We do not have an issue with contaminated sediment, it is clean, and turbidity is not a problem either – in the rainy season you cannot tell if it is from the dredge or the rain," Marotta explained. However, water is a high priority. "It is our drinking water – and I am very impressed by ACP's environmental measures and social responsibility; there's a complete oil pollution and wastewater branch".

There is a variety of safety measures in place to mitigate against contamination of this water-source. "On the *Il Principe* [the backhoe dredger], for example, all drippings of oil etc are contained and pumped out by one of two dedicated pumping launches. And of course we have vessels for skimming, plus oil booms and other equipment, all 'just in case,'" he added.

The canal, however, can play tricks on unsuspecting dredging personnel. An oil slick does not necessarily indicate a spill. "There is a tree, *lignum vitae*, that sinks in water and when you dredge them you get an 'oil slick', but it is natural material," Marotta confirmed. It is also one of the world's hardest woods and has played its part in the canal's history – among many other uses, it was used for the original railway sleepers when the Panama Railroad was built from 1851 to 1855.

ACP is not expecting its own staff to undertake all of the required dredging. It recently released a request for proposals to dredge the canal's Atlantic entrance – deepening the channel to 15.5m, involving the

removal of 15M m<sup>3</sup> of material. Meanwhile, Dredging International (DI) has started work at the other end, where it is already deepening the Pacific entrance to a minimum of 15.1m MLWS from its existing 14.2m. Its remit is also to widen this area from 192m to 225m.

Apart from six different – and not guaranteed – traffic windows, DI has about 35 ships passing through its dredging project every 24 hours. "We have many challenges to face," said its Central America area manager Hugo De Vlieger, "not least those 35 ships. It is why we chose self-propelled units [dredgers] – otherwise it would be impossible."

The scope of DI's work will see 9.1M m<sup>3</sup> dredged from 14.2km of the canal – an impressive amount of it very hard rock – from its entrance at the Amador Islands up to the Miraflores and new locks sites. DI has split the project into eight sections, each of which will be dredged over two phases: first, the removal of relatively soft material; second, the removal of rock.

The company has also won a contract to dredge the new Panama Pacific International Terminal that PSA is building on the old Rodman naval base.

Another project being planned is the deepening of the Atlantic anchorage, possibly involving another 12.6M m<sup>3</sup>. Speculation has arisen as to whether this is likely to form part of the Atlantic entrance work contract, but ACP administrator Alberto Alemán said: "We might do it ourselves." **PH**

## Safe testing ground

In 2014 the Panama Canal will open to a new class of Panamax vessels – in terms of container ships, for example, an increase from the present 4,500teu to 12,600teu. This increase in vessel size comes with increased challenges – reduced vessel manoeuvrability and increased risks if a collision takes place. The Panama Canal Authority (ACP) is mindful of these risks and has been using its Maritime Simulation, Research and Development Centre (SIDMAR),

which is equipped with Kongsberg bridge simulators. SIDMAR is able to simulate accidents and the results have been used to influence engineers developing the canal's ports and channels. "We simulated PSA's new harbor on the old Rodman naval base," said Capt Rogelio Altafulla, ACP's pilot training co-ordinator at SIDMAR.

"It will include a quay for the new Panamax vessels and we were able to make recommendations for its shape and for

the dredging – smooth slopes will be needed. We're looking at 10% under-keel clearance, which affects how much dredging will be needed. And the simulation came up with a better position for the turning circle." Much more lies ahead, as SIDMAR's job is to work in parallel with the expansion programme. "We have to test the entire canal," Altafulla pointed out. "It goes in phases of course. Simulation is not the only tool and is not 100%, but it's the best groundwork."



Photos: Georgia Ports Authority

# Digging deep for brighter future

US ports are preparing themselves to reap the benefits of an expanded Panama Canal. *P&H's* deputy Americas editor, **Will Watson**, gives an update

**New cranes and more capacity... four super-post-Panamax cranes pass under Savannah's Talmadge Bridge**

**D**espite the continuing global economic downturn – in part because of it – US ports from Texas to New York continue to prepare for “brighter days ahead” when an expanded Panama Canal is expected to launch new all-water routes between Asia and the US east and Gulf coasts. Funded mainly through grants, long-term bonds and other alternative financial commitments, the expansions are needed, port bosses claim, to prepare for more and larger container ships that are expected in the future.

But in mid-February the challenge for the ports changed from where to find funds to how to spend them. Congress passed, and President Obama signed, the nearly \$800Bn American Recovery and Reinvestment Act, which contained, potentially at least, billions of dollars for port improvement projects. From dredging (see pages 24–25) to intermodal links to electrification of quay equipment and reduction of diesel emissions, the so-called ‘Stimulus Bill’ provides a vault full of cash to those ready to spend it.

And that is where the challenge lies. Since the act is

aimed at stimulating a sluggish economy immediately, no new projects will be considered and only those that are ‘shovel-ready’ will be funded. But ports do not believe this to be a problem, claiming that many improvement projects have been approved in recent years by Congress but never funded.

The cash is now flowing with one direct funding provision for ports. This includes \$150M in security grants – on top of the \$400M they are already set to receive this year.

Beyond that, there is an added \$4.6Bn for the Army Corps of Engineers, with \$1Bn of that for maintenance dredging. There’s also money for road improvement, diesel emissions reduction, funds for the National Oceanic & Atmospheric Administration for chart-making and numerous programmes where ports can apply for grants.

With reference to this legislative largesse, Kurt Nagle, president of the American Association of Port Authorities, told *Ports & Harbors*: “The AAPA is extremely pleased that numerous provisions included in the



## Stormproof

The Port of Gulfport, Mississippi, which was all but destroyed by Hurricane Katrina, is beginning its \$570M rebuilding effort. In February, the port announced that construction is beginning on the massive project that will, among other things, raise the port to nearly 3m above sea level – a move intended to protect the facility from future massive storms.

Doug Sethness, VP of engineering firm CH2M Hill's ports and maritime group, told the media that officials are working to get Gulfport classified as a strategic port by the US Maritime Administration – which would make it eligible for federal assistance. Port commissioners say they have a total of about \$830M for the port project, including \$570M in federal community development block grants that were part of Hurricane Katrina recovery funds.

stimulus legislation passed by Congress will enable America's seaports to play a sizeable role in creating jobs and reinvigorating America's economy quickly, while enhancing the environment and port security." He added: "Importantly, these investments in a vital economic lifeline like seaports and their connecting transportation infrastructure will continue to pay tremendous dividends well into the future, helping US farmers and manufacturers remain competitive in global markets and providing consumer-needed products, such as food, clothing, medicine and fuel."

While many ports are growing incrementally through expansion, three states are launching entirely new facilities to avoid metropolitan congestion. In North Carolina, plans are moving forward to build what is being called the North Carolina International Terminal to be located 4nm from the mouth of the Cape Fear River in Brunswick County, near the existing Port of Wilmington.

The \$1.7Bn scheme is in the initial planning stages, and state officials hope to open the new terminal in less than the one to two decades it normally takes to complete such projects. Engineering firm CH2M Hill has been retained to plan the 243ha terminal that proponents say will be needed to cope with projected growth in cargo flow.

Looking south, the states of Georgia and South Carolina have come together to build a new deepwater container terminal on the Savannah River.

The Jasper Ocean Terminal's governance will be similar to that of the Port Authority of New York and

New Jersey, as it will be operated by an authority being set up by the states. Located on a 614ha parcel on the South Carolina bank of the river, between Savannah and the Atlantic, the terminal is expected to welcome its first box ship by 2021. In February, the Port of Savannah also received four new super-post-Panamax cranes – a tangible sign of its commitment to expanding capacity.

The engineering firm of Moffat & Nichol has been retained to produce the plans. Company spokesman Bob Bennett said: "It will take about two years to collect all the information needed for an environmental impact statement (EIS) and at least another two or three years to get the EIS and all the permitting lined up." William Bethea Jr, a member of the South Carolina State Ports Authority board, has been elected to chair the Jasper Ocean Terminal Joint Project Office for the coming year and he said he would like to see the first ships docking at the new port in eight to 10 years.

Located mid-way between Wilmington and Jasper is the Port of Charleston, which just renewed its joint marketing pact with the Panama Canal and is continuing work on its major new three-berth, 113ha terminal to be located at the city's former US Naval Shipyard. In recent months the port has had to overcome some legal challenges from environmentalists and is continuing with work that doesn't require state or federal permits. In addition to the new container facility, the port authority is opening 1.9M m<sup>2</sup> in new warehouse and industrial space being built in the South Carolina lowcountry, plus a further 526ha distribution centre planned for nearby Orangeburg.

In mid-February, the project took a major step forward when bids were sought for a 1,524m-long containment structure, which is expected to cost upwards of \$60M.

"This signals to our customers that, while we're being mindful of the current state of trade, we are focused on the long-term success of the Port of Charleston," John Hassell III, interim president and CEO of the state port authority, told *P&H*. "With port expansion at the navy base, along with other capacity enhancements, Charleston will be able to handle growth for many years to come."

Not to be outdone is the Port of Jacksonville

### Expansion... MSC Malaysia calls at the new Bayport Container Terminal in Houston



Photos: Port of Houston



## Investments in seaports and their connecting transportation infrastructure will pay dividends into the future

(Jaxport), which is making a name for itself as one of the fastest-growing container ports in the country. Having just completed its massive TraPac Terminal at Dames Point – home to Mitsui OSK Lines – the port is moving forward with another new terminal to serve as Hanjin Shipping's US east coast base. The Seoul-based liner carrier has a 30-year lease on the \$300M, 36ha Hanjin Container Terminal, which is expected to open for business in late 2011.

In announcing plans to locate operations at Jaxport, G S Choi, executive vice-president at Hanjin, commented that the port is well-run and well-maintained. "We look forward to having Jacksonville

as our new gateway to the east coast of the United States," he said.

In Virginia, work is still under way on a project that is vital to the state's port growth, despite being far from the sea. The Heartland Corridor is a railway improvement project that will allow containers loaded at the quayside at Hampton Roads terminals to be transported double-stacked through a series of tunnels to Ohio and the US hinterland. Officials are eyeing the stimulus funds for some extra cash to complete the massive project.

And in New York, deepening of the Big Apple's harbor and channels continues, with all eyes beginning to focus on the Bayonne Bridge. While port and terminal officials welcome the deepening – intended to accommodate the deeper-draught post-Panamax cargo vessels expected in coming years – the concern is the troublesome span that restricts air draught for vessels calling at most of the bi-state port's facilities.

In Texas, the Port of Houston continues to expand its cargo-handling capacity in preparation for better days to come. The first phase of the Bayport Terminal is in use and the port has just appropriated \$4.5M to expand the terminal's gate. Phase two is on the drawing board and the intention is to move forward without delay – including \$30M investment in a new terminal administration building and a maintenance and repair facility.

Beyond Bayport, Houston officials and port bosses from nearby Galveston are planning a joint container facility on Pelican Island that won't be started until about 2015 – when the Bayport terminals are expected to be fully booked.

Farther east, in Alabama, the new Mobile Terminal is now fully operational – and the aim is to continue its growth and expansion. Terminal director Brian Clark told *P&H* that the facility is capable of handling up to 350,000teu annually.

Currently, it's served by Zim and CMA-CGM, but other carriers are being solicited, he added. The 38.5ha facility has two post-Panamax container cranes alongside with the capacity to install up to six. "We are only building out as quickly as needed to support our customers," Clark commented.

Between Houston and Mobile lies New Orleans, where the port is continuing to rebuild itself following the devastation wreaked by Hurricane Katrina. Despite the damage, port director Gary LaGrange noted that the port has surpassed its pre-Katrina cargo volumes. There has, however, been a shift in cargo type. While once the focus was on containers, the recent increases have been in bulk and break-bulk cargoes. Contracts valued at \$26.5M are in hand for the installation of two multi-purpose gantry cranes at the Napoleon Avenue Container Terminal.

"Ship turnaround time and container loading and unloading are key determinants in measuring a port's productivity by a container carrier," LaGrange said, adding: "The addition of these two cranes will make the Port of New Orleans one of the most productive container ports in the South Atlantic and Gulf of Mexico region." **PH**



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Photo: ACP

# Expanding horizons for Panama

*P&H's* editor-in-chief, **Tony Slinn**, talks to the Panama Canal's administrator, Alberto Alemán Zubieta, about expansion, the environment and logistics

**The Panama Canal expansion, due to be completed in 2014, is expected to transform the country's prospects**

**D**espite the pre-planning, the story of the expansion of the Panama Canal does not really start until Sunday 22 October 2006. That was the day the Panamanian people voted to support the Panama Canal Authority's (ACP) \$5.25Bn project.

The project, due for completion in 2014, is expected to transform the country's prospects. It involves the construction of a set of locks, each with three chambers, at both the Pacific and Atlantic sides of the canal. The project also includes widening and deepening existing navigational channels in Gatún Lake and deepening the Culebra Cut. This will enable larger vessels than ever before to transit this waterway.

At present it is mainly at the planning and contract stage, although development and dredging are taking place at, for example, the Pacific entrance and Gatún Lake. By the end of this year, however, the ACP will have awarded 97% of all the expansion contracts, including the tender for locks construction (see box).

The vote delighted Alemán. Without it, he said, "Panama would have reduced its position as a major player, due to the fact we would have placed restrictions on the American world." He told *P&H*: "More and more

it's about logistics and the larger locks will enhance the value of our location by making Panama the most important transshipment place in the Americas."

"In essence," he said, "having ports on two major oceans, the Atlantic and Pacific, with a distance between the two of only 50 miles, gives us immense possibilities."

The cost of developing the canal is quoted as \$5.25Bn. "We don't have any loans from commercial banks, only multilateral agencies" that invest in long-term projects, he explained. The remaining cash will come from canal-generated income.

In 2007, ACP announced it would increase tolls in three stages, the last to be implemented this month. In February, France's CMA CGM, one of the canal's top 10 customers, announced it would reroute the return leg of its Asia-Mexico-Caribbean PEX2 service via the Cape of Good Hope. The schedule is seven days longer, but CMA CGM says it is more cost-effective to bypass the canal.

Alemán remains unperturbed: "They are taking the long route because they are not touching any ports. They don't have the volumes. It's a cashflow decision; you may be losing money from an accounting point of



view, but you don't have to pay cash for a ship that is coming back virtually empty."

As the ACP's ambassador, Alemán has travelled the world and signed memoranda of understanding (MoUs) to promote the all-water route via the canal with many ports, especially in the US and among them the port authorities of Georgia, Massachusetts, Virginia, South Carolina, New York and New Jersey, and the ports of Houston, Miami and New Orleans.

"We believe the canal is part of an integrated transport system – the canal will also have an impact on the whole Caribbean," he told *P&H*. "Everybody needs to understand that we are part of a system – we are not independent, we affect one another. So sharing information about what we are doing, and getting information in return, benefits everyone: there's no downside.

"We need to understand what's going on in these trying times," he added. "We want to know if ports are spending money on dredging and expanding, especially in the US." He prioritises this activity, because if these ports are not ready then the benefits of an expanded canal will not be fully realised.

Alemán is realistic about the impact of the financial assistance being given to ports as part of the recent US stimulus package (see page 26), commenting that some will be ready and some won't. "But when we open the expanded canal, it is not only about container ships, but LPG tankers, Capesize vessels and others – you'll be able to move two or three times more tonnage on a single ship than you can today. That will make the whole region more competitive: if you're importing, you'll get your units at a lower cost; if you're exporting, the same thing." He also believes it will alter some trade patterns too: "I have an MoU, for example, with the City of Dallas, which doesn't have a port, but they will have a link with the Port of Houston and use the intermodal system of which we are all a part."

Panama's ports have not been slow to take advantage of the new possibilities. Panama Ports Company, for example, is expanding the Port of Balboa. Panama has also granted PSA a box port concession at the old Rodman Navy Base virtually opposite. There are also government plans for a Pacific mega-port.

"I think we should build as many ports as we can. I think we should have a very open and competitive environment," Alemán asserted. "No one should have or claim a monopoly."

Alemán is keen to see Panama become a logistics hub and progress is being made as a result of the country's increased connectivity. "We have a better understanding of the dimensions [of the canal] now," he said, "and of all the people we need to put it together, especially the ports. We need to look at a strategy, do something better, but we are moving forward in a positive way and that is why I think that we will have to expand port facilities and communications between ports – which is happening." "We are about to finish a highway that will link the ports in the Atlantic with the ports in the Pacific," he noted, "which will allow more flexibility in how cargo's positioned."

He is also confident about the project's commitment to environmental best practice, claiming that "we are abiding by the best standards you can find. It is very simple; it is because the environment is extremely important. It is in the constitution that we should manage the watershed, so we are very green... we did more studies on the environmental side than we did on the engineering side, I think. We are constantly engaging in making this a sustainable environment; we are keepers and protectors." Some 60% of the water used stays in the lockage system and the ACP's expansion programme specifically aims to utilise water-saving technology.

But as Alemán pointed out, the canal itself plays a major environmental role: "Using the canal reduces carbon emissions over any alternative route.

We're making sure clients are aware of that, it is part of our worldwide responsibility, and we will certify that using the canal has saved on CO<sub>2</sub>," **PH**

**Alberto Alemán Zubieta: "I think we should build as many ports as we can"**

## Best value, best practice

Three proposals to design and build the new set of canal locks were presented to the Panama Canal Authority (ACP) on 3 March. The proposals have been separated into two categories – technical and price – with the technical proposals to be assessed first. The price proposals were placed into a sealed container and locked into a vault and will not be opened until the technical proposals have been evaluated.

After evaluation, the ACP will award the contract to the consortium that demonstrates the 'best value', a decision based on the technical aspect (55%), and the bid price (45%). The three consortia requested extended deadlines for these proposals. Ideally, the ACP had hoped for a 2013 opening, but providing the 2014 deadline is achieved – marking 100 years after the opening of the original canal – the project is considered on schedule. The new locks will be 427m long, 55m large and have a draught of 18.3m.



Photo: Tony Slinn



# Big plans for Peruvian ports

Private investment is planned to develop Peru's ocean and river ports and to improve logistics. Journalist **Michael Mackey** reports for *P&H*

**Port development is just one aspect of Peruvian logistics marked for investment**

Peru's port sector has high expectations. The National Port Authority (APN) said this year's investment might surpass \$1Bn. Most of that money will be coming from overseas, the government not being shy of either private or foreign investment.

Developments at Callao are already under way as DP World expands Muelle Sur (see *P&H*, September 2008). The terminal operator has launched a charm offensive for a second, much larger venture, Muelle Norte, which is to be approved this year so work can start in 2011.

This is not the only private investment going into the Lima region. A spokesperson for Peruvian exporters' association ADEX pointed out that APN has authorised three private ports – Ventanilla, Ancón and Chancay. As all are close to Callao, competition for terminal operators will be tough, ADEX predicted.

DP World, however, continues to seek more capacity. Its proposals for Muelle Norte envisage a three or four-berth facility, depending on the size of the ships involved, with 1,268m of mainline and 550m of side feeder berth. The berths will have draughts of 14m, addressing the current lack of deep-draught ports on the west coast of South America.

"It will be container-focused," said Michael Bentley, DP World's director for business planning development in the Americas region, in an interview with *P&H*. Cruise ships will use the facilities, but mineral cargoes – copper, zinc, tin and iron – will be handled at other ports on environmental grounds.

Peru is a significant mining country, with activity in both its northern and southern regions. The extractive industries are creating an opportunity for another set of investors. China's interest in Peru's mining industry and exports is dependent on its railways and ports, indicated Veronica Zavala, Peru's minister of transport and communications at last year's APEC CEO summit.

"This is the reason why it is important to point out that the portfolio of projects for concessions and public-private partnerships in this sector amounts to \$3.3Bn," Zavala continued.

"We estimate that [Muelle Norte] would create 3M teu capacity at full development," Bentley said. DP World acknowledged that Muelle Norte has potential as a transshipment facility – the only one on the continental coast south of Panama.

"This port will be primarily to serve the growing



local trade of Peru, but, to ensure that, it can attract large ships as a transshipment base," Bentley said.

Callao is not the only port to benefit from foreign and local investment. A chain of facilities along the Peruvian coast and the Amazon basin, with its many rivers, are also planned. Among the ports for which concessions are expected to be granted this year are northern Paita, where a \$100M contract has been touted by APN president Frank Boyle. Eight consortia are interested, some of them international operators.

APN also expects to award two port concessions in the southern town of Ica. One, with a first-stage investment of \$75M, would be the Port of San Martin, in Pisco, south of Lima. The second, Juan de Marcona, represents an investment of \$170M.

Inland investment is expected as well. Concessions are likely to be issued this year for the Amazonian and inland ports of Pucallpa and Iquitos, which are predicted to attract \$50M.

Other ports that have been put in the frame by government bodies are Salaverry in the north, and Ilo in the south, as well as Yurimaguas in the Amazon, with investments of \$40M, \$100M and \$20M respectively.

The new ports strategy also recognises the need to link port facilities with other infrastructure. But government money won't and can't do it by itself.

"The government knows there is a lack of infrastructure investment here so there is a risk of bottleneck in many sectors, although the main bottlenecks are in the ports. In order to reduce the bottleneck it has been bringing in private investment not just in the ports but also the roads and other infrastructure," said Roberto Flores, an analyst with Lima-based security company SAB Centura.

DP World is again an exemplar, as a foreign investor and engaged in joined-up thinking and practice. Part of the contract for Muelle Sur allowed for development to port-related infrastructure including logistics centres.

Peruvian rail concessionaire Ferrocarril Transandino (FTSA) is evaluating an extension of its railway from Cusco, high in the Andes, to the Brazilian border, according to its president, Romulo Guidino. FTSA runs a railway connecting Matarani Port, in southern Peru, with Cusco. The proposed extension would provide a railway channel for Brazil's soy exports to southeast Asia, replacing the Brazil–Panama Canal–southeast Asia and Brazil–Cape Horn–southeast Asia shipping routes. FTSA is also said to be developing a proposal to extend this project to run through the Amazon



and Andean regions to end at the ports of Paita and Sechura near Peru's northwestern city of Piura. It would also connect with the Cerro de Pasco railway line that leads to Callao.

Serious economic players are giving thought to connecting ports with economic hinterlands at an international level. This approach was highlighted by Prime Minister Yehude Simon: "The ports, including river ports, are going to have a much more important role for the government," he told *Gestión*, a Peruvian business newspaper. "Within a short time we are going to accelerate some things in order to have better infrastructure, including putting our ports on to a higher level. We will have greater dynamism in the concessioning of ports." If all goes as planned, there will be better logistics too. **PH**

## Archaeologically correct

Peruvian ports have to factor in challenges such as earthquakes and archaeology. Callao is considered a high-risk area for earthquakes because of the soil conditions, so DP World has stipulated high design standards, to be applied and enforced by local and international experts.

"The earthquake probability on the Muelle Sur is a 450-year event, hence the structure has been designed with high parameters," Javier Lecaros de Cossio, the project engineer at Muelle Sur, told *Ports & Harbors*.

"The event of Pisco's earthquake in the year 2006 increased the design parameters of structures such as the Muelle Sur," he said.

Because Peru is a country with a long and fascinating history, there was an archaeologist at all excavations.

"The demolition of [the old] Muelle 9 demanded great co-ordination with the archaeologist," said Lecaros. "In this case not only were old structures carefully analysed, but also the corresponding construction methods were studied."



# Keeping supply chain security SAFE

The World Customs Organization secretary-general **Kunio Mikuriya** gives *P&H* a global overview of its authorised economic operator system

**T**he vulnerabilities exposed by the terrorist attacks on the US in September 2001 prompted a speedy reaction from the World Customs Organization (WCO). The ongoing terrorist threat pushed the spotlight on to customs administrations, whose traditional role was expanded overnight to include national security.

Weak links in the trade supply chain could have disastrous consequences for any country involved in international trade. The challenge for the customs community therefore lies in finding the right balance between two vital ingredients to national economic growth – trade security and trade facilitation.

To assist its members, the organisation developed the *Framework of Standards to Secure and Facilitate*

*Global Trade* (SAFE Framework), because it was convinced that an initiative aimed at securing the trade environment globally while promoting the flow of legitimate goods would receive maximum support and unconditional endorsement from all involved.

The SAFE Framework contains principles and standards that all customs administrations should adopt and implement. It is aimed at providing uniformity and predictability to the global trade environment by safeguarding the end-to-end security of the international trade supply chain, and facilitating the passage of legitimate goods through customs control. By mid-March, 155 of the WCO's 174 members had signed letters of intent to implement the Framework.

The Framework was developed with four principles in mind: customs administrations committing to harmonising advance electronic manifest information requirements to allow risk assessment of cargo; applying a common risk management approach; using non-intrusive detection equipment to effect examinations; and providing benefits to businesses that meet defined supply chain security standards and best practices.

Two pillars support the Framework. The customs-to-customs pillar fosters co-operation among customs administrations on the basis of common and accepted standards in order to maximise trade security and facilitation. The customs-to-business pillar promotes partnerships between customs organisations and the private sector through creation of an international system for identifying businesses able to guarantee a

## AEO programmes

|             |   |
|-------------|---|
| Canada      | Partners in Protection  |
| China       | AEO Programme   |
| EU          | AEO Programme (see page 36)   |
| Japan       | AEO Programme   |
| Jordan      | Golden List   |
| Malaysia    | Customs Golden Client   |
| New Zealand | Secure Exports Scheme   |
| Singapore   | Secure Trade Partnership  |
| Sweden      | Stair-Sec   |
| US          | Customs-Trade Partnership<br>Against Terrorism (C-TPAT) (see page 38) |





high degree of security in respect of their role in the trade supply chain.

This WCO instrument has not remained static since its introduction and a third pillar is now in development, although it has not yet been formally incorporated into the Framework. To ensure the Framework is compatible with other groups' security and facilitation guidelines, the WCO has been working closely with a range of international organisations (see box).

The draft third pillar was introduced at the October 2008 WCO SAFE Working Group meeting and foresees co-ordinated border management among all national entities that have border control responsibilities. As the Framework does not currently contain a standard or model plan to restart international trade should a terrorist incident involving the global supply chain occur, the working group has been tasked to produce a standard or model programme on trade recovery.

The SAFE Framework defines an authorised economic operator (AEO) as a party involved in the international movement of goods in whatever function that has been approved by or on behalf of a national customs administration and which complies with WCO or equivalent supply chain security standards. AEOs include, among others, manufacturers, importers and exporters, brokers, carriers, consolidators, air and sea ports, terminal operators, warehouses and distributors.

Businesses that fulfil the criteria are regarded as partners and classified as AEOs eligible for a host of tangible benefits such as quicker movement of low-risk cargo through customs, fewer customs control interventions, improved security levels, lower supply chain costs through security efficiencies and better communication between business and customs. Perhaps the greatest benefit is mutual recognition of AEO authorisations, making international trade transactions almost seamless from 'factory to floor'.

Forming an integral part of the Framework, the AEO provisions provide baseline technical guidance for global implementation of AEO programmes between customs administrations and the international trade community. This guidance is designed to serve as a starting-point for introducing national AEO programmes and supports the effective application of the standards that are outlined in the Framework's customs-to-business pillar.

The SAFE Framework lists standards in the customs-to-business pillar that specifically deal with AEOs:

**Standard 1 – Partnership:** AEOs involved in the international trade supply chain will engage in a self-assessment process measured against pre-determined security standards and best practices to ensure that their internal policies and procedures provide adequate safeguards against the compromise of their shipments and containers until they are released from customs control at destination.

**Standard 2 – Security:** AEOs will incorporate pre-determined security best practices into their existing business practices.

**Standard 3 – Authorisation:** The customs administration, together with representatives from the trade community, will design validation processes or quality

## Organisations in full

|       |  |
|-------|--|
| APEC  | Asia-Pacific Economic Cooperation                    |
| AU    | Africa Union   |
| G8    | Group of Eight                                       |
| IAEA  | International Atomic Energy Agency                   |
| ICAO  | International Civil Aviation Organization            |
| ILO   | International Labour Organization                    |
| IMO   | International Maritime Organization                  |
| ISO   | International Organization for Standardization       |
| OPCW  | Organisation for the Prohibition of Chemical Weapons |
| OSCE  | Organization for Security and Co-operation in Europe |
| UNCTC | United Nations Centre on Transnational Corporations  |
| UNECE | United Nations Economic Commission for Europe        |
| UNODC | United Nations Office on Drugs and Crime             |
| UNSC  | United Nations Security Council                      |
| WHO   | World Health Organization                            |
| WTO   | World Trade Organization                             |

accreditation procedures that offer incentives to businesses through their status as AEOs.

**Standard 4 – Technology:** All parties will maintain cargo and container integrity by facilitating the use of modern technology.

**Standard 5 – Communication:** The customs administration will regularly update customs-business partnership programmes to promote minimum security standards and supply chain security best practices.

**Standard 6 – Facilitation:** The customs administration will work co-operatively with AEOs to maximise security and facilitation of the international trade supply chain originating in or moving through its customs territory.

AEO programmes are already in place in China, the EU, the US and elsewhere (see box). With respect to mutual recognition, Japan and New Zealand have an agreement, and the US has concluded agreements with Canada, Jordan and New Zealand. The EU and the US have set this year as a target, and several other countries and customs unions such as APEC are actively negotiating similar accords. The WCO is encouraging progressively wider recognition as more and more customs administrations conclude agreements with each other, although it accepts that this will take time.

Customs and its partners stand to gain considerably in their efforts to secure and facilitate global trade. It is important to ensure that the SAFE Framework does not lose momentum, however, and private-sector support is critical to the successful implementation of the Framework. The WCO is therefore providing customs administrations with innovative capacity-building solutions, by encouraging its members to take affirmative action to implement the SAFE provisions as soon as practicable, and by advocating an enhanced partnership approach.

Keeping the momentum going is one of WCO's priorities for the 21st century. **PH**

For more information see [www.wcoomd.org](http://www.wcoomd.org)  
Email: [information@wcoomd.org](mailto:information@wcoomd.org)



Photo: European Community

# Certifying secure trade in Europe

**László Kovács**, the EU Commissioner for Taxation and Customs Union, gives *P&H* an EU perspective on secure customs operations

**H**istorically, the role of customs was the collection of customs duties and indirect taxes at import. Developments in commercial policy and e-commerce on the one hand and terrorist attacks and the role of organised crime on the other have altered the environment where customs operates.

Today, customs are facing new challenges: to ensure the smooth flow of trade while applying necessary controls and guaranteeing the security and safety of European citizens. As commissioner in charge of the Customs Union, my aim is to ensure a safer and more secure end-to-end supply chain but at the same time allowing compliant traders to benefit from trade facilitation measures throughout the community.

In 2005 the European Commission proposed a new status called the European authorised economic operator. An AEO would fully comply with the international standards established by the World Customs Organization, known as *SAFE – Framework of Standards to Secure and Facilitate Global Trade* (see

page 34). The idea was to introduce a high-quality and secure label for traders that would be recognised in the 27 EU member states. Reliable traders complying with the standards could benefit from facilitation of customs controls in relation to safety and security and a more simplified customs process.

The AEO concept entered into force on 1 January 2008. It is open to all operators in the supply chain, including port operators and carriers.

The Commission and member states wished for a very flexible system to allow every operator to take advantage of the AEO status. It is clear that not every operator would be interested in every customs simplification or customs control facilitation, either because the operator's activities are focused in a specific area where only one simplification is needed or because the investment cost to comply with criteria is disproportionate to the benefits to be gained.

Traders, therefore, can choose from three AEO certifications, depending on their needs: AEO Security



and Safety can be granted for customs control facilitation measures, AEO Customs Simplifications for easier access to more simplified customs, or for both.

The dual certificate, combining both the elements, has proved the most attractive. In March 2009 around 80% of the 2,500 companies that applied requested this certificate, and it is expected that the total number of applications by the end of 2009 will be around 3,000. Customs simplifications AEO status alone has been requested by 17%, and 3% have asked for security status only.

Of the 2,500 applications so far, around 730 have already received positive feedback from customs, and certificates have been issued. All EU member states have received AEO applications and have been issued AEO certificates. A huge proportion of applications come from small- and medium-sized enterprises. In general, they get status quicker than big companies, which have more complicated structures and more outsourced activities.

I am convinced that the success of AEO status will grow in the coming months and years. Being recognised as an authorised economic operator constitutes, in itself, an advantage for the operator, as they are considered to be complying with strict criteria. I expect recognised AEOs will be putting pressure on their providers and partners to acquire the status, as in the long term it is in their interest to work with other AEOs. The more AEOs that are involved in the supply chain, the more secure the supply chain becomes. AEO status will therefore become more and more attractive for economic operators.

From a practical standpoint, the certificate has some major advantages. Secure or combined AEOs receive priority treatment and fewer controls. Authorised operators will also be allowed to submit less data for the pre-arrival and pre-departure declaration.

The status applies in all 27 EU member states. Once a company has received AEO (secure or combined) status in one member state, its certificate is valid in all other 26 member states.

The Taxation and Customs Union Directorate-General (TAXUD) is working on the implementation provisions

for the Modernised Customs Code to improve the attractiveness of AEO certification. Some minor changes to improve the concept are needed in order to increase facilitation for legitimate trade. In particular, we are discussing with member states on ways to minimise any burden on exports.

In addition, we need to develop mutual recognition arrangements of security standards and security trade partnership programmes with our major trading partners, in accordance with the WCO SAFE Framework of Standards. It is an absolute necessity for EU companies to improve their competitiveness and to ensure end-to-end supply chain security.

Mutual recognition arrangements will result in faster clearance at borders and avoid the need to go through several different administrative procedures and criteria. Customs will maximise resources by focusing on economic operators that are high-risk or unknown.

Recognised reliable operators, on the other hand, will benefit at both sides of the border, including reduced risk scores and control levels. Mutual recognition arrangements will increase the attractiveness of becoming an AEO as recognised traders (on both sides of the border) may choose to work primarily with other authorised and reliable trading partners.

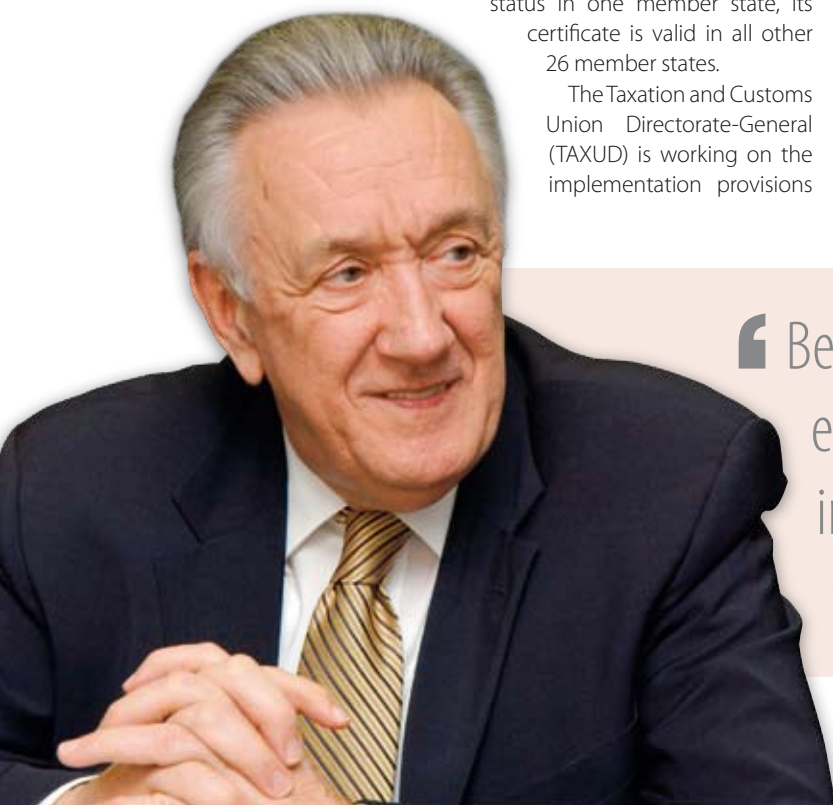
We are therefore broadening the standards in our customs' agreements to embrace the US, Norway, Switzerland, Japan and China.

We have begun to work jointly with the customs authorities in the US towards mutual recognition of the US Customs-Trade Partnership Against Terrorism (C-TPAT) programme (see page 38) and the EU AEO. We have agreed on a roadmap to achieve an agreement on mutual recognition by the end of 2009. We are pursuing a similar approach with Japan.

As to China, we are working on a pilot project on smart and secure trade lanes. This co-operation can help to prepare the grounds for achieving mutual recognition of our security standards and of the AEO status.

We also intend to sign an agreement with Switzerland on customs security measures – which will include mutual recognition of the status of AEOs – before 1 July 2009. On the same date, we also expect mutual recognition of AEOs to enter into force with Norway within the framework of the European Economic Area (EEA) agreement. **PH**

**European Anti-Fraud Office (OLAF) and French customs officers inspect a lorry in the Port of Dunkirk**



“ Being recognised as an authorised economic operator constitutes, in itself, an advantage for the operator ” **László Kovács**



Photo: US Customs &amp; Border Protection

## Popular C-TPAT programme is extending its reach

The US security programme launched after the 2001 terrorist attacks is gaining in membership and popularity, inspiring other countries to take similar action, reveals **Will Watson**, *P&H's* deputy Americas reporter

**Mobile x-ray...  
a US Customs  
officer inspects a  
container**

**W**hen the Customs-Trade Partnership Against Terrorism (C-TPAT) programme was launched in 2001 after the attacks of 11 September, doubts were raised about how many stakeholders in the global supply chain would volunteer to participate. As of mid-March, that number stands at more than 8,000 members – with more than 1,200 of this number validated as certified trading partners. This number is still growing, programme director Brad Skinner told *P&H*.

The explanation for members' and applicants' enthusiasm is the preferential treatment offered to "secure shippers" – those members who have been certified. Its popularity means that trading partners of the US have begun to establish similar schemes of their own, such as the European Union's authorised economic operator (AEO). Increasingly, these schemes

are being reciprocated under bilateral agreements.

In an exclusive interview with *P&H*, Skinner outlined the philosophy, history and goals of the scheme. It was the brainchild of Robert Bonner, the first post-11 September commissioner of US Customs & Border Protection (CBP). After the attacks, national leaders in the US realised that seaports and the supply chain would be obvious targets for future assaults. So, the US Customs Service was transformed into CBP, which joined the Coast Guard and other agencies under the newly formed Department of Homeland Security.

Several programmes were launched as part of what Bonner called a "layered" security strategy – the Container Security Initiative (CSI), the voluntary C-TPAT scheme and then the Secure Port Initiative. The MegaPorts scheme was also launched, jointly with the Department of Energy, to screen for illicit nuclear





# → Top Performers



“ There is technology available to get things moving in over 90 countries of the world. ”

materials as part of the non-proliferation initiative.

All these schemes have been successful since they were launched in 2001. The CSI scheme has given rise to the World Customs Organization's Secure Framework of Standards. C-TPAT has generated similar schemes in other global trading nations. Now, the US has mutual recognition agreements (MRAs) with Canada, New Zealand and Jordan. Pacts are expected to be signed this year with Japan and Singapore. Talks are under way for mutual recognition agreements with the EU and with South Korea. Under the MRAs, C-TPAT member shippers enjoy the same benefits when sending cargoes to MRA nations as they do with US-bound containers. Shippers who are members of voluntary security schemes in MRA countries need not join C-TPAT to get preferential treatment in the US.

The most important benefit offered to certified C-TPAT participants is that their containers are inspected less frequently than the average box. Skinner said that this is important given that the frequency of random container inspections has increased significantly over recent years thanks to the efficiency of non-intrusive scanning. Under the CSI scheme, every US-bound container is evaluated at the National Targeting Center. Those containers shipped from C-TPAT members automatically receive a lower score, which reduces the risk of delaying inspection.

Another benefit of the scheme is that C-TPAT containers that are singled out for inspection go to the front of the line. "The containers can be moved ahead of any non C-TPAT shipments awaiting exam, regardless of how long they have been there," CBP wrote in its

statement to the industry. It continued: "This can translate into substantial monetary savings in that containers will not wait as long in line at a container examination site and although they are still being examined, they will be processed more quickly than non-members." Perhaps the biggest benefit, according to CBP, is the 'marketability' advantage enjoyed by C-TPAT members. "They can assure customers that their boxes will be handled expeditiously on arrival in the US and will have the shortest security delays in reaching final destinations," CBP said. "That is especially important in this age of just-in-time deliveries."

Asked if the scheme works for them, several members responded.

"Yes, C-TPAT membership has definitely helped our import activity. We have experienced far less delay in the custom clearance of our cargo arriving from Europe. This not only saved us valuable time in getting our merchandise to our customers, but also money. So, overall we think it is very beneficial to our business," said Laura Kope of Trust International Corporation.

"The message from most companies is: 'It's well worth it to be part of this security programme'. That bodes well for the programme's continued growth and for our nation's safety," wrote senior research director at the University of Virginia Center for Survey Research, David Hartman, following a study in which C-TPAT members were interviewed.

One reason for the programme's success and an important part of its value is the high standards to which members are held, Skinner said. Since beginning the programme, CBP has conducted over 9,000 validations or revalidations for its 1,200 certified partners. Following those audits – or because of blatant non-compliance or a major security breach – some 455 partners have been suspended and 335 have been booted out of the plan. "This programme has to have high standards and teeth in order to work," Skinner explained. Since the programme's start, the original number of 38 supply chain inspectors has grown to over 200 and is still growing, Skinner noted.

The country where C-TPAT has had a difficult start is China, where a large amount of cargo inbound for the US originates and where requests to conduct validations have been refused. But that position was changed slightly in 2008, when Chinese officials participated in joint validation inspections at 18 shipper locations – out of the 275 Chinese would-be C-TPAT certified partners, who need that validation in order to enjoy the scheme's full benefits. "We continue to be hopeful that China will grant broader authority to conduct validations," Skinner said.

To help members achieve higher ratings in Tier 2 and Tier 3 (where the greatest benefit lies), CBP has created a list of best practices that were identified through the validation process. "These best practices came from members who exhibited enthusiasm, creativity and entrepreneurialism in forging security schemes that exceed C-TPAT's minimum standards," Skinner explained – noting that the topic will be a popular discussion at the annual members' meeting being held this month in New Orleans. **PH**

## What C-TPAT stands for

The Customs-Trade Partnership Against Terrorism (C-TPAT) is a worldwide, voluntary government and business initiative. It aims to build relationships among businesses and governments and other stakeholders to improve the security of the international supply chain and the US border.

C-TPAT ensures that US Customs and Border Protection (CBP) is able to provide the highest level of security through close co-operation with importers, carriers, customs brokers and manufacturers.

It offers trade-related businesses the chance to play an active role against the threat of terrorism. Companies that do not officially participate in C-TPAT are encouraged to use C-TPAT guidelines.

**Customs inspectors use drug and explosives sniffing dogs as part of 'non-intrusive' inspections**



Photo: US Customs & Border Protection





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# Competition to co-ordination

Two competing container terminal operators at the Port of Århus, Denmark, joined forces to boost safety at their facilities. **Scott Berman** reports

**A** catastrophic fireworks factory explosion in November 2004 in Seest, a suburb of Kolding in Denmark, has increased concern about the possibility of this kind of incident occurring in a port. Amid a changing safety and security environment, ports have taken notice.

René Ruusunen, deputy head of the Prevention Division at the Danish Emergency Management Agency (DEMA), said the explosion prompted efforts in Denmark to boost safety measures for storing hazardous materials on land. In 2005, a government task force started to investigate ways of doing so – an effort that Ruusunen said is still under way. In the meantime, he noted, international rules requiring tighter security and access have been passed and DEMA has made recommendations to municipalities about emergency response.

Kurt Kongerslev, security officer at Århus's Cargo Service, explained how container terminal officials sought a solution to the problem and together have turned it into a 'win-win situation' for both the terminals and the port. Cargo Service and its neighbouring competitor at Århus, APM Terminals – a subsidiary of AP Møller-Mærsk – have outsourced

their emergency response centre to Dansikring – the Danish subsidiary of Securitas, a Stockholm-based security multinational.

Proponents believe they have come up with a solution that increases the level of safety while reducing response times and costs. The heart of the initiative – the emergency response centre – opened its doors in the third quarter of 2007. The arrangement now has a track record.

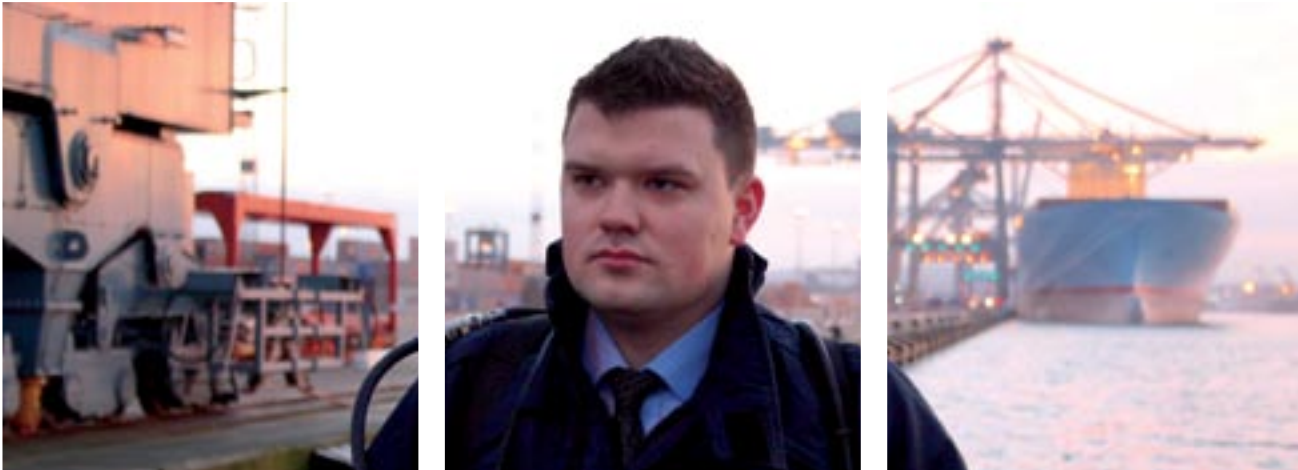
Of course, these operators and the port itself – the country's leading cargo facility – had complete security measures in place before and were fully compliant with the International Ship and Port Facility Code. But the new mandates were different altogether.

"We had to redefine the entire arrangement," recalled Kim Høyberg Andersen. Until recently, Andersen was head of security at APMT's Århus terminal, but he has since moved to Dansikring as its segment manager for production, logistics and maritime in Denmark. Andersen and Kongerslev and their colleagues had a tall order to fill. The APMT and Cargo Service terminals in Århus handle a combined daily average of about 1,500 teu. Myriad products are moved, of which about 1% are hazardous materials. Andersen explained that

**Shared resources... the emergency response vehicle carries first aid items and fire-fighting equipment**







**A Dansikring security guard... one guard is based at headquarters, another operates the roving response vehicle**

the terminal operators were not aware of any models for shared security of this kind, other than at the Port of Rotterdam, where APMT and Eurogate do so. They called up Dansikring to help forge a solution.

Under the arrangements that were in place before the changes, the terminals each had two security guards sitting on either side of the fence between them. APMT had two weekday guards and one at night, while Cargo Service employed one at night and none during the day. At weekends, Cargo Service had a round-the-clock weekend guard; APMT usually had two day and one night guard, on a schedule that changed depending on ship calls.

Now, two guards work simultaneously in 12-hour shifts, meaning that four guards work during a 24-hour period. They are on a fixed contract, making things more uniform and predictable, as well as less expensive than the previous arrangement of calling in staff to fill changing shifts.

The headquarters of the joint operation is a command centre located between the two container terminals, equidistant from all the points covered. One guard is posted there, watching closed-circuit television monitors linked to cameras located throughout the port.

The guard controls access to gates and doors within the security system. Among their responsibilities are handling reception, badges and access cards, checking in anything from 20 to 200 visitors every day. This guard is also trained to administer first aid and inspect hazardous goods.

The other guard operates a roving emergency response vehicle. This person is trained to take on the command centre guard's function if required, and has another level of training to fight fires, deliver first aid, manage emergency response and handle hazardous cargo. The vehicle carries breathing apparatus, fire-fighting equipment and enough water – 600 litres – to continue fighting fires until municipal responders reach the scene.

The agreement covers the container terminals and, in case of emergency, the port's omni/break-bulk terminal – a total area of 500,000m<sup>2</sup>. The centre also provides surveillance and remote access control for

some additional port facilities as well, Andersen said. Citing confidentiality agreements, he declined to reveal the cost of the five-year security agreement, but it is levied as a monthly fee adjusted annually in line with the cost price index. The fee includes the leasing of the command centre equipment and emergency vehicle, and training of the guards by the Århus fire department.

Insurers like what they see. The arrangement has taken a healthy 10% bite out of the terminals' annual \$130,000 cost for worker injury liability insurance, according Andersen. That \$13,000 saving is just the start, he said – terminal executives are awaiting new risk assessments. Port of Århus officials are pleased too. Harbormaster Claus Holm Christensen told *P&H*, "The port supports this initiative and values it very highly." He believes the centre is an example of terminal operators being responsible and proactive.

So far, Kongerslev noted, there have been "no problems". Andersen also reported positive feedback – the new arrangement has worked well in response to a number of accidents, including a collision between a motorcycle and a pedestrian, and several falls and personal injuries.

In the middle of last year, an enormous oil tank fire broke out at Westway Terminals in the Port of Århus. Although the area is not covered by the Cargo Service-APM arrangement, personnel from the joint emergency response centre pitched in, guiding municipal emergency vehicles to the scene, Andersen recalled. It was a graphic reminder of the need for quick response at ports.

Kongerslev added that wherever there is more than one terminal operator, there are opportunities to combine security operations and thereby boost safety. Now affiliated companies at Århus Port – warehouse, trucking, oil storage – are looking at possibly joining the initiative. Andersen also noted that the economic crisis is likely to cause more port companies to look into joint security initiatives.

In his view, the key to the whole joint venture at Århus, was the joint realisation by the two terminal operators that "security and safety are not competition parameters". **PH**



Photo: Reviss Services (UK)

# Be active over radioactive cargo

**Dr Cathie Deeley**, international marketing manager for radioactive cobalt-60 manufacturer Reviss Services (UK), explains why ports are crucial to global healthcare

**Battened down: Reviss cobalt-60 class B transport flasks are secured within a 20ft container. These are then enclosed behind a curtain, ready for shipment**

Since July 2001 it has not been permitted to transport commercial quantities of cobalt-60 (Co-60) radiation sources by air. Therefore the radiation processing industry is now solely dependent upon road and maritime routes for its supply of Co-60 radiation sources.

Maintaining reliable shipping routes for a total annual consignment of approximately 100 containers of class 7 cargo originating from two suppliers – the UK-based Reviss Services and Canada-based MDS Nordion – is a challenge.

Radioactive material, such as Co-60, falls into class 7 under the IMO's International Maritime Dangerous Goods (IMDG) Code. The carriage of material which

falls into this class was discussed at IMO's Facilitation Committee (FAL) in January and the committee agreed to continue its work to enable shipments of class 7 radioactive materials through resolving delays and denials of shipments.

On occasion, IMO's regional representatives have intervened and provided assistance, securing shipment of the product. Yet despite this active approach from the IMO, Reviss has not noticed a generic improvement in the attitudes of certain regions towards the handling of such materials.

When the supply frequency is of the order of between one and 10 containers a month, as it is between the UK, North America and northern Europe, suppliers of



## Education is key

“The essential need for a reliable and efficient transport system for class 7 radioactive materials is little known to those outside the class 7 industry,” Trevor Dixon specialist adviser at the World Nuclear Transport Institute (WNTI), told *P&H*. “From the supply of cobalt-60 for sterilisation to the production of clean carbon-free electricity, the transport chain is vital...”

Through its outreach programme, WNTI provides lectures on the safe and reliable transport of class 7 materials as well as offering one-to-one meetings with port authorities and shipping companies.

Co-60 have established good relationships with carriers and port authorities. Familiarity with the product has established routine procedures for its handling.

However, since the 2001 terrorist attacks, the burden of paperwork and local legislation has grown in step with heightened regulatory control of class 7 cargo. As a result, the various shipping routes necessary to supply this vital commodity to the rest of the world, with a frequency of perhaps 20–30 containers a year, have become almost impossible to sustain.

Perhaps the most significant barrier to securing reliable shipping routes for Co-60 to southeast Asia is the number of ports that must be transited *en route*. In the face of increasing legislation, many Mediterranean ports are no longer willing to manage the intermittent transit of just one or two containers of Co-60. Not surprisingly, this has a big impact on the ability of carriers to accept such class 7 cargo.

Further difficulties are encountered with routes that require transshipment – several hubs used by carriers are unable to accept Class 7 cargo for transshipment to feeder vessels. Even within ‘class 7-friendly’ ports, only specific terminals may be able to accept class 7 cargo. In those cases, the carrier is unlikely to deviate from the preferred terminal to accommodate just one or two containers, further restricting the number of shipping options available.

A recent successful shipment of Co-60 to Vietnam took six months to arrange. It was eventually carried by ShipCraft, a small Danish company that specialises in dangerous goods. The cargo was loaded at Thamesport. ShipCraft has a contract to ship direct

to Korea and was willing to stop off in Vietnam to deliver the cargo. The vessel’s route takes it through the Suez Canal without stopping off along the way, which avoids the complication of transiting certain Mediterranean ports, where denial is common.

These days it is not uncommon for manufacturers to struggle for upwards of six months to secure a route.

The difficulty in shipping to some countries has become so extreme as to render them essentially without seafreight access for supply of Co-60.

For 40 years commercial quantities of sealed radiation sources have been transported to users around the world without any radiological incident. Co-60 sources are sealed double-skinned stainless steel tubes containing Co-60 metal.

They are shipped in flasks that are designed and built to the highest specification, each costing upwards of \$100,000 to manufacture (see box).

In the licensing process, the regulating authority has witnessed drop-testing of a full-size prototype flask on to a steel post in a hardened concrete target. The flask is required to maintain physical product containment and radiation and thermal shielding, throughout repeated drops from 1m to 9m on to its most vulnerable components.

The routine intermittent handling of these flasks by port workers will have essentially no impact on their annual radiation dose uptake.

A measure of the effectiveness of the radiation shielding used in type-B transport flasks is that the measured annual dose absorbed by classified industry workers, who handle these flasks on a daily basis, is equal to approximately 2 units.

This is below the 2.5 units of background radiation that all of us absorb each year from atmospheric emissions when we fly, through geological emissions from the natural environment, or when we undergo medical x-rays.

There are therefore strong grounds for port authorities to review both the management and implementation of shipping legislation for the transit of Co-60 radiation sources. Until this is achieved, seafreight carriers and routes will continue to be difficult, if not impossible, to secure. **PH**

## Sterilising success

If you have ever had an injection or used a sterile dressing you have already benefited from a global industry that has just two major suppliers of cobalt-60 (Co-60). Forty-five per cent of the world’s single-use medical supplies are sterilised using gamma radiation from Co-60 sources. Both the manufacturer and the end-user are equally dependent upon the reliable transportation of class 7 radioactive material to approximately 200 sterilisation facilities around the world.

Costs for shipping class 7 cargo are very high; therefore users of Co-60 tend to take large infrequent deliveries – for example, one container every two years. Gamma energy from Co-60 sources falls by 12% per year so sterilisation operators typically work on a replenishment cycle that runs from significant over-capacity to under-capacity.

This heightens the need for prompt Co-60 delivery to minimise any negative impact on processing throughput at the end of the cycle; the processing rate for sterilising medical devices reduces by 1% per month.

The reliable supply of Co-60 is a critical element in the manufacture of sterile medical devices and vital to public health globally.

There are stringent standards surrounding the packaging of Co-60. The International Atomic Energy Agency (IAEA) is responsible for certification pertaining to these standards. There are two levels of certification: type A and B, with type B being the more rigorous. Type B certification – to which all Revis containers are tested – requires the container to be tested, “to withstand transport accident scenarios under extreme environmental conditions,” and be resilient to high-speed impact and fire.



# UNCTAD experts debate GHGs

This United Nations forum discusses ways to fund projects to reduce greenhouse gases. *P&H* reports on its February meeting

**Views were exchanged in advance of consideration by the UNFCCC at its next meeting**

**M**aritime transport “has a major role to play” in dealing with climate change, said Lakshmi Puri, acting deputy secretary-general of the United Nations Conference on Trade and Development (UNCTAD). Puri set the tone for the three-day ‘expert meeting’ in February at UNCTAD’s headquarters in Geneva, Switzerland, that looked at greenhouse gas (GHG) emissions from shipping.

This meeting was intended to provide a forum for exchanging views that the United Nations Framework Convention on Climate Change (UNFCCC) will consider at its next meeting in Copenhagen in December this year. A draft ‘chairman’s summary’ of the meeting – running to nearly 9,000 words – has been prepared by the event’s president, Professor Costas Grammenos.

IAPH was represented by its secretary-general, Dr Satoshi Inoue, who reminded delegates of the

association’s proactive role in promoting the greening of the world’s ports. “We urge all members to tackle air quality and implement strategies accordingly,” he said, and noted many initiatives that IAPH has taken, culminating in the World Ports Climate Initiative and its Environmental Ship Index (ESI) last November. He also referred to the IAPH Tool Box launched at that time and now being updated for a second version.

But he also pointed out that ports have to deal with all modes of transport, not just shipping, “so we expect all [modes] to reduce their emissions”. He added: “It is the only way to ensure fewer emissions from ports.”

This was echoed by Peter Mollema, director of strategy port infrastructure and maritime affairs at the Port of Rotterdam. Mollema, who is IAPH Technical Committee chair, spoke of a partnership being formed with other bodies to reduce GHG emissions

## Fuelling funding

Support is growing globally for a strategy that would impose a levy on ship fuel. The monies raised would pay for moves by developing countries to combat greenhouse gases (GHGs), Andre Stochniol, of the International Maritime Emission Reduction Scheme, told delegates at the UNCTAD meeting.

He presented the latest version of his scheme at the Geneva conference and later told *P&H* that he expected several countries to support presentation of

the proposal to the IMO and the UN Framework Convention on Climate Change.

Under his scheme, charterers would pay a levy based on a ship’s fuel consumption and the destination of its cargo; if bound for a developing nation, there would be no levy. In round figures, he estimated that the scheme would raise more than \$6Bn a year while adding about 5% to fuel costs and 0.1% to prices of delivered goods. But some

delegates expressed doubt about the idea’s effectiveness in a commercial context and were concerned about undue interference with trade patterns.

Peter Hinchliffe, marine director of the International Chamber of Shipping, said shipping’s “complex and unique issues” mean that it is not ready to choose between a fuel levy or a carbon trading scheme to reduce emissions.





### Debating an urgent challenge.

**Above l to r: Peter Mollema, Port of Rotterdam; Dr Satoshi Inoue, IAPH secretary-general. Below, Lakshmi Puri, UNCTAD**

in the port by 20% by 2011. Port of Rotterdam may also introduce an incentive scheme based on the ESI, giving discounts on port tariffs for vessels meeting the standard. The Dutch coast is particularly vulnerable to any rise in sea level resulting from global warming, and the planned Maasvlakte 2 development has been designed to be 'climate-proof', he said.

One central point for debate was whether, and how, revenues might be raised from shipping to fund projects in developing countries aimed at reducing their GHGs. One option would be to impose a levy on ships' fuel, believes Dr Andre Stochniol, founder of the International Maritime Emission Reduction Scheme (see box). He told *P&H* that he expects to have the backing of "several states" to allow it to be formally presented to the IMO and the UNFCCC.

There is no doubt that shipping will one day be covered by CO<sub>2</sub> regulations. Carbon dioxide emissions are not yet included in MARPOL, but Andreas Chrisostomou, chairman of the IMO's Marine Environment Protection Committee, expects that this will have been rectified by the end of 2011.

Peter Hinchliffe, marine director of the International Chamber of Shipping, warned of the difficulties of setting up a global fund. If there were to be such a fund, the Greek delegation wanted to see its resources directed only towards the maritime transport sector, both in developing and developed countries. "We see the whole sector in its totality", Cmdr Anastasakos Agisilaos of the Hellenic Coast Guard explained.

Finance was never far from delegates' minds, but in her opening comments, Lakshmi Puri warned shipping to keep its eye on pollution issues even at a time that global business is fixated on the financial squeeze.

*P&H's* managing editor Paul Gunton reminded the meeting that ship operators will make decisions based on economics. "Money makes the world go round," he said in his presentation, which outlined technical options for reducing GHGs on ships. But he noted that some container ships had been rerouted round Cape Horn in preference to transiting the Suez Canal because this was cheaper, despite the additional fuel bill and the

thousands of tonnes of additional CO<sub>2</sub> produced on each voyage.

Both the UNFCCC secretariat and the IMO are developing standards for CO<sub>2</sub> emissions from ships and there was debate over which should take the lead on these, with most accepting IMO's responsibility for all shipping matters. But the chairman's draft summary noted that "some experts... are of the view that the UNFCCC and the Kyoto Protocol have set the principles and the legal framework on climate change which should also form the legal basis for IMO's work on GHG emissions from international shipping."

Although delegates did not reach any conclusions, they were left in no doubt of the problem's importance by Lakshmi Puri: "The challenge is great, time is short and action is urgently required." **PH**

*The draft report can be viewed at:*

[www.unctad.org/en/docs/cimem1d3\\_en.pdf](http://www.unctad.org/en/docs/cimem1d3_en.pdf)



# One step further for EU safety package

The third maritime safety package was adopted by the European Parliament on 11 March.

The first two legislative packages on maritime safety – the so-called ERIKA I and II – sent a strong message from the European Union that sub-standard shipping would no longer be tolerated. In 2005, however, it was clear that much remained to be done and that the world should not wait for the next catastrophe to happen.

The third maritime safety package was born in November 2005, with the main objective of restoring competitiveness within the sector while benefiting only those operators who respect safety standards, in particular by increasing the pressure on owners of sub-standard ships.

Finally, three years later, the third package includes the following measures:

- Improved quality of European flags – this includes a mandatory audit plan for national maritime administrations and the certification of their quality management systems, as opposed to the IMO international scheme which is implemented on a voluntary basis only.

- Improvement in the quality of work undertaken by classification societies – these bodies represent a fundamental element in the maritime safety chain. "Better performing class means less room for sub-standard shipping at no additional cost for safety-conscious owners."



**Certifying quality... class societies will be audited**

A specialised body will be set up to audit and certify the quality management systems of EU-recognised organisations.

- More effective port state control – an inspection of all ships making a stopover in European ports will be required, as opposed to the current obligation for each EU member state to inspect 25%. These inspections will vary in frequency depending on the risk the ships pose: the most dangerous ships will thus be

inspected every six months, while quality ships will be subject to less frequent inspections.

- Better assistance for ships in distress – this involves defining a clear and precise legal framework on refuge zones, in order to guarantee an independent decision by the authority responsible for the designation of refuge zones and ensuring that authorities possess the necessary elements for decision-making.

Vessel tracking is also a priority

and the new text aims to guarantee that all the member states will be interconnected via SafeSeaNet – a data exchange platform between national maritime administrations, in order to obtain a complete overview of the movements of dangerous or polluting cargoes on ships sailing in European waters.

It was also agreed to establish a European Union Long Range Identification and Tracking (LRIT) data centre to take charge of processing the LRIT information from ships.

- A common framework for accident investigation – for effective, objective and transparent inquiries following maritime accidents occurring in EU waters and those involving EU-flag ships or EU interests.

An information and analysis system for accidents at sea will also be established.

- Protection of victims – two remaining measures are aimed at protecting the victims of maritime casualties.

A new regulation has been adopted to further protect passengers in the aftermath of an accident, introducing a set of modern rules on liability and insurance, which will benefit those passengers travelling on the main European and domestic maritime routes.

The European Maritime Safety Agency (EMSA) will assist the European Commission in the implementation of the package.

Photo: Lloyd's Register

## California changes tack on discharge regulations

California has agreed to drop state add-on rules to new US incidental discharge regulations. A total of 26 incidental discharge streams – including greywater, ballast water and deck runoff – officially came under the purview of the US Clean Water Act on 6 February.

New record-keeping and best practices were federally mandated

in US waters as from 19 February. The US Environmental Protection Agency will regulate discharges under the National Vessel General Permit. US states have had the right to make additional rules for their own waters.

The commercial shipping and cruise industries were against the add-ons rules originally proposed

by California, which had planned to require the testing of discharges against numerical limits, sources told *P&H*.

California also wanted operators to inject coloured dye into their greywater, so regulators could ascertain whether greywater was being released in state waters.

After intense lobbying, the

California Water Board has dropped the requirements for testing against numerical quality limits and struck out its greywater dye rule. "After extensive debate, the water board agreed to delete those [permit] modifications of greatest concern to the industry," the Pacific Merchant Shipping Association stated.



## 'Cutting corners' could cost safety

IMO member states were cautioned against making savings by "cutting corners", especially in relation to maritime safety and environmental practice, at the opening of the 17th session of the Sub-Committee on Flag State Implementation. Addressing the meeting on 20 April, IMO's secretary-general, Efthimios Mitropoulos, acknowledged that the financial crisis has left virtually no sector unscathed and that shipping is no exception.

There will be temptations to compromise, he said, but "those in charge of making such decisions should not consider lowering the standards of their ships as an option – just as the financial crisis should not be invoked as an excuse to impede progress in the global efforts to stem climate change and global warming, or to delay the ratification of IMO instruments or

slow down their implementation". He said that compromised standards – for example, deferring essential maintenance work, replacing faulty or obsolete equipment, or postponing training for officers and crew – "may not only result in loss of life and damage to the marine environment, it will also, in the process, deal a strong blow to the image of shipping from which it will need great efforts and a long time to recover".

Earlier in his speech Mitropoulos revealed that the theme for this year's World Maritime Day, to be celebrated on 24 September, is: *Climate change: a challenge for IMO too!*

While acknowledging the challenge, he stressed that the shipping industry must "respond to our environmental responsibilities decisively, effectively and expeditiously".



The US environment agency believes that a 200nm emissions buffer zone will help save lives

## Emissions control request

The US and Canada have formally asked the International Maritime Organization to create an emissions control area (ECA) around both countries' coastlines to restrict airborne pollutants from ocean-going ships.

According to data from the US Environment Protection Agency (EPA), creation of an ECA would save up to 8,300 US and Canadian lives every year by 2020. This would be achieved by imposing stricter standards on ships that produce harmful emissions into the air near coastal communities. Under the bi-national request, the control area would extend for 200nm from the shoreline.

Speaking at a news conference on 30 March, EPA administrator Lisa P Jackson said: "This is an

important – and long overdue – step in our efforts to protect the air and water along our shores, and the health of the people in our coastal communities". She continued: "We want to ensure the economic strength of our port cities at the same time that we take responsible steps to protect public health and the environment in the United States and across the globe."

US Senator Barbara Boxer, chairman of the Senate Committee on Environment and Public Works, commented: "We have known for a long time that our families that live around ports have a higher rate of respiratory illness, including cancer. EPA's announcement today is music to my ears because it means the United States is stepping

forward to take a strong leadership role on clean air around ports."

Inside the ECA, less-polluting fuels must be used by ships approaching North American ports and by departing vessels. ECA standards would cut the sulphur content in fuel by 98%, particulate matter emissions by 85%, and nitrogen oxide emissions by 80% from current global requirements.

To achieve these reductions, ships must use fuel with no more than 1,000 parts per million sulphur (0.1%) beginning in 2015, and new ships must use advanced emission control technologies beginning in 2016.

This is the first ECA request to be received by the IMO and it is expected that a review of the proposal will commence in July.

## Continents collaborate under MoU

The European Seaports Organisation (ESPO) and American Association of Port Authorities (AAPA) formalised a memorandum of understanding that envisages closer collaboration between both port organisations. On behalf of AAPA, the MoU was signed by its chair, Geraldine Knatz, and president/CEO, Kurt Nagle. The event took place at AAPA's Annual Spring Convention on 23 and 24 March. ESPO chairman Victor Schoenmakers and secretary general Patrick Verhoeven also attended the event.

Under the MoU, ESPO and AAPA will co-ordinate on international issues of common concern, establish co-operative working relationships between technical committees, organise joint events and share research findings and publications to strengthen information exchange. A shortlist of specific topics on which the co-operation will focus during the coming year is in preparation. This is certain to include issues such as climate change and port security.

Ray LaHood, the new transportation secretary under the Obama administration and a speaker at the conference, outlined the priorities of his department, including the Recovery and Reinvestment Act, which targets investments in those areas that will either save or create good jobs immediately.

Photo: Joachim Affeldt



**New MARPOL  
amendments aim to  
protect the beautiful  
Antarctic region**

Photo: Capt Patrick Toomey

## Agreed amendments for Antarctic

Draft amendments to MARPOL (IMO's International Convention for the Prevention of Pollution from Ships) to protect the Antarctic area were agreed at the 13th session of the Sub-Committee on Bulk Liquids and Gases (BLG). These amendments will be submitted to the Marine Environment Protection Committee in July (MEPC 59), for approval with a view to adoption.

If adopted, these amendments would create a new chapter nine in MARPOL Annex I, incorporating

a new regulation – number 43. This would prohibit the carriage in bulk as cargo, or for use as fuel, crude oil with a higher density than  $900\text{kg/m}^3$  when at a temperature of  $15^\circ\text{C}$ , in the Antarctic region. Similar stipulations apply to other oils. The implication is that higher-density fuels are more difficult to deal with in the case of an oil spill, given their tendency to sink.

The sub-committee also approved a draft Maritime Safety Committee (MSC) resolution on

recommendations for material safety data sheets (MSDS) for MARPOL Annex I type cargoes and oil fuels, for submission to MSC 86 in May for adoption. The MSDS are intended to inform seafarers of the possible dangers associated with the handling of specific cargoes.

Other activities at the March meeting included:

- An agreement to submit to MSC 86 for adoption a draft interim guidelines on safety for gas-fuelled engine installations in ships
- An agreed a work plan, scope

and framework for the development of the International Code of Safety for Gas-fuelled Ships (IGF Code). It is anticipated that such engines will have a beneficial impact on the volume of harmful gases in emissions released into the atmosphere from ships. A correspondence group has been tasked to work on the code

- An agreed extension for the existing interim guidelines on the carriage of bio-fuel blends for a further 24 months, as further work is needed on the subject.

## Energy efficiency makes progress at IMO

IMO's working group on greenhouse gas (GHG) emissions from ships made major progress at its recent meeting in March. The group developed measures to enhance energy efficiency and thereby reduce greenhouse gas emissions from ships,

It will report to IMO's Marine Environment Protection Committee (MEPC) when it meets for its 59th session in July.

The working group concentrated on the technical and operational measures to reduce GHGs from ships. These represent two of the three pillars of IMO's work on the subject. The third

pillar, possible market-based instruments, will be debated in depth at MEPC 59.

The working group considered a large number of papers from both member governments and observer organisations on how to increase fuel efficiency in the world fleet.

The main focus was the further refinement of the Energy Efficiency Design Index (EEDI) for new ships. Discussion focused on experience gained through EEDI's trial application over the past six months. The EEDI is meant to stimulate innovation and technical development of all elements

influencing the energy efficiency of a ship, making it possible to design and build intrinsically energy-efficient ships of the future.

The group also considered how to improve the Energy Efficiency Operational Index (EEOI), which enables operators to measure the fuel efficiency of an existing ship and, therefore, to gauge the effectiveness of any measures adopted to reduce a vessel's energy consumption.

Experts debated a draft Ship Energy Management Plan (SEMP) that has been developed by a coalition of industry organisations and agreed to forward it to MEPC

59 for further consideration. The draft SEMP incorporates guidance on best practices, which include improved voyage planning, speed and power optimisation, optimised ship handling, improved fleet management and cargo handling, as well as energy management for individual ships.

The outcome of MEPC 59 will be presented to the conference that the United Nations will convene in Copenhagen in December 2009. This conference is set to agree on a successor instrument to the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC).



# Insight and opportunity in Genoa

Find out how other ports are responding to the economic downturn in Genoa.

*P&H* considers the conference's pertinence in today's climate

The most important event for the international ports community is fast approaching at the end of May. This is marked by the release of the second announcement for the 26th IAPH World Ports Conference, which gives a comprehensive overview of the event and details its impressive list of speakers. Among these are IAPH president Datin Paduka OC Phang and Gichiri Ndua, IAPH first vice-president.

The recent deterioration in world trade and the implications for ports, including the depressed outlook for container shipping, makes this event an important discussion forum. There will be ample opportunities for port personnel to consider how the downturn will affect terminal capacity and development initiatives worldwide.

Among the major ports to be represented are Los Angeles – CEO Geraldine Knatz will deliver a paper on climate change – and Port of Rotterdam's director of



**Genoa will play host to IAPH's World Ports Conference**

port planning and development, Peter Mollema, will be presenting the Environmental Ship Index. Other international organisations giving their perspectives on current issues include the International Association of Cities and Ports, the European Shippers Council and the World Bank.

Environmental issues will be a major subject for debate throughout the four-day conference. Speaker Herman Journée, chairman of the EcoPorts Foundation and director strategic development at Port of

Amsterdam, believes that the conference and exhibition will provide an opportunity to share experiences. "Everyone [ports] is looking out for themselves, but we should help each other," he said. Ports will be able to see the financial advantages associated with good environmental practice.

"Ports used to look only at their own area," said Journée. "This has changed in the past four to five years. Ports are now part of the logistics chain. It's important to make ports and the chain sustainable," he said, adding that a

port is only as secure as the chain within which it operates.

The conference theme, *Oriented to the market – open to the future*, has inspired other topics such as globalisation, port management and strategy, safety and security. Moffat and Nichol's chief economist, Dr Walter Kemmsies, will be considering the effects of the economic slowdown on the world economy. Delegates will be invited to consider which parts of the world will emerge from the downturn able to grow and influence world markets.

Thomas Kornegay, immediate past president of IAPH and former executive director of Port of Houston Authority, will be giving his perspective on port planning during the economic downturn. Plus, a panel of port leaders will be discussing management challenges facing port authorities.

The Port of Genoa is looking forward to welcoming all IAPH members to its city and port.

## Membership notes

IAPH is pleased to announce that four new members have joined the association

### Regular member

#### Bremenports GmbH & Co KG

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 Website: www.bremenports.de  
 Representative: Juergen Holtermann, chairman

### Associate members

#### Privasia Sdn Bhd

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Email: puva@privasia.com; karen@privasia.com  
 Website: www.privasia.com  
 Representative: Puvanesan Subenthiran, CEO  
 Nature of business activities: IT consultants specialising in port management systems

#### Weston Solutions Inc

Address: 26 Northview Court, Lake Oswego, OR 97035, US  
 Telephone: +1 971 409 4696  
 Fax: +1 610 701 3158  
 Email: Cheryl.Koshuta@westonsolutions.com  
 Website: www.westonsolutions.com  
 Representative: Cheryl R Koshuta, national director, seaports/airports services  
 Nature of business activities: Environmental consultants, engineers

#### AcruX Infrastructure Technologies

Address: Alcantara 200, piso 6, Las Condes, Santiago, Chile  
 Telephone: +56 2 370 2974  
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 Email: lapp@acruxit.com  
 Website: www.acruxit.com  
 Representative: Katherine A Lapp, principal  
 Nature of business activities: IT consulting services to international maritime and aviation sectors







# Developing in a downturn

Port and maritime personnel from the Asia and Oceania Region gathered together in Singapore. *P&H* reports on the conference's wide-ranging themes

The Maritime and Port Authority of Singapore (MPA) played host to more than 150 maritime and port colleagues at the 9th IAPH Asia/Oceania Regional Meeting. Delegates at the event, which took place on 25–27 March, came from 15 countries across the region, along with representatives from the government of Singapore and the local port community. IAPH 3rd vice-president Tay Lim Heng, chief executive of MPA, welcomed all the participants gathered in Singapore, including IAPH president Datin Paduka OC Phang.

Speaking at the opening ceremony, permanent secretary of the Ministry of Transport Brig Gen (NS) Choi Shing Kwok said: "From having to deal with a capacity crunch as recently as six months ago, ports have now to adapt to lower business activity. In these challenging times, this forum will provide a useful platform to discuss ideas on how the maritime community can stay focused on their shared objectives of developing more secure, more competitive and cleaner ports."

In addition to the regional meeting (see box), a port forum consisting of three sessions, also provided an opportunity to discuss the following issues:

- Session 1 – Supply chain security and port logistics
- Session 2 – Port development in emerging markets
- Session 3 – Marine environmental protection.

ReCAAP (the Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia) set the scene for the first session by putting into perspective the need for a secure logistics chain. Pointing out that more than 30% of world trade and half of the

world's oil shipments pass through the Straits of Malacca and Singapore, it noted that the majority of thefts on board ship occur while a vessel is berthed or at anchor.

Teh Thiam Siong, head of supply chain security for Singapore Customs, highlighted the important role that every node – including ports – can play in countering security threats. Singapore is involved in a variety of schemes to help it achieve consistency across the supply chain. These include its Secure Trade Partnership (STP) programme, which Siong said is consistent with the World Customs Organization (WCO) Framework of Standards (see page 34).

Discussion for the second session focused on port developments in Singapore, China and South Korea. An overview of phases three and four at Pasir Panjang Terminal at the Port of Singapore – which, despite this economic downturn, is pressing ahead with development – underlined the fact that capacity is increasing across the world's ports. According to Park Ho Chul, marketing director: "Mindful of the need to balance economic growth with a care for the environment, ensuring sustainability, proactive



**The regional meeting's host, Lim Heng Tay, IAPH regional vice-president and chief executive of the Maritime and Port Authority of Singapore, greets IAPH president Datin Paduka OC Phang**

measures were undertaken to address any potential impact from the works."

Development at Pasir Panjang has involved reusing material dredged from basins, fairways and land-based construction.

Given the rise in its throughput over the past five years, Busan Port Authority was also keen to focus on the merits of its three current expansion projects. Its North Port Redevelopment involves the regeneration of the old port area. With an impressive overall budget of US\$7Bn – comprising \$1.8Bn for sub-infrastructure and \$5.2Bn for superstructure – the project is split into two phases and is planned to be completed in 2015. The final two years will be devoted to creating an international passenger terminal.

By contrast, Du Qidong, deputy secretary general at China Ports and Harbors Association, stressed the continuing decline in world

trade. He noted that the number of ship calls from Europe and the US at Chinese ports has decreased and that the financial downturn is continuing to have an impact. In his presentation he said: "The first fact is that the world economy favours the emerging markets with high container growth, while the developed markets softened their growth rate. Slowdowns have been seen in some of the big container ports in the developed areas such as the EU, and America even has a minus rate."

Fer van de Laar, IAPH's managing director, took the opportunity to present the association's World Ports Climate Initiative (WPCI) during the third session. WPCI aims to encourage studies, strategies and actions to reduce greenhouse gas (GHG) emissions and improve air quality. Van de Laar pointed to some of the current projects, including investigating the feasibility of low-emission yard equipment, onshore power supply and reducing ports' carbon footprint.

He also drew attention to the Environmental Ship Index, which offers ports a guide to reducing GHGs, as well as the practical advice and information contained in the IAPH Toolbox – which can be found on the website. Van de Laar noted that WPCI hopes to gain support from 25 more ports by mid-2010, from the original 55.

## Executive committee confirmed

IAPH was pleased to announce at the regional meeting that three new executive committee members of the Asia/Oceania Region have been elected and will be submitted to the board in Genoa for confirmation. They are: Jens B Madsen, managing director of Ports of Auckland Limited, New Zealand; Grant Gilfillan, chief executive officer of Sydney Ports Corporation, Australia; and Le Cong Minh, director general of Saigon Port Company, Vietnam.

It was also decided that the next Asia/Oceania Region meeting, scheduled for 2010, will take place in Indonesia.

Photos: MPA

# Challenging HNS

Conclusive progress was made in finalising a draft protocol for the HNS Convention (Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea) at the IMO Legal Committee's 95th session held in April. The protocol addresses practical problems that have prevented many states from ratifying this convention.

The draft will be the subject of a diplomatic conference to be convened next year. The adoption of the protocol to the HNS Convention will lead to acceleration of the ratification of this convention as envisaged by

IAPH's Dunkirk Resolution.

A proposed Instrument on Places of Refuge drafted by Comité Maritime International (CMI), which was finalised in its Athens Conference (see below), was also considered. Delegations expressed their gratitude to CMI for developing this draft instrument, but felt that this is not the time to incorporate it into the working agenda. Instead priority should be given to closing the liability and compensation framework by the coming into force of the HNS, Bunkers and the Nairobi Wreck Removal Conventions. More information will come at the Genoa IAPH Legal Committee meeting.

## Places of refuge put on hold

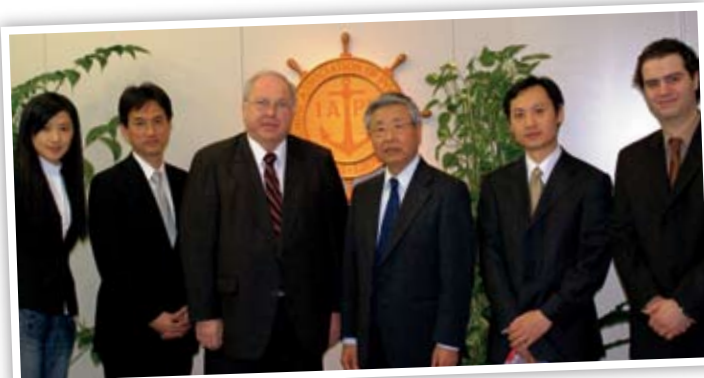
IAPH joins others in thanking Comité Maritime International (CMI) for its efforts in developing a draft Instrument on Places of Refuge. This is an intricate and complex subject, touching on sovereignty. The association participated in CMI's

Athens Conference during which the draft instrument was finalised. IAPH supports the change in thinking towards places of refuge but still has some concerns. The association intends to put forward further suggestions to be discussed in the future.

## APSN visits IAPH

Five delegates from Beijing-based APEC Port Service Network (APSN) visited the IAPH secretariat in Tokyo on 3 March, headed by the organisation's president, Jerry Rysanek. After introducing APSN's aims – to enhance community and partnerships within the ports' industry – both organisations discussed building a co-operative relationship in the future.

**Below from l to r: Wu Shu, executive assistant to the SG, APSN; Takeshi Muraoka, Ministry of Land, Infrastructure, Transport and Tourism, Japan; Jerry Rysanek, president, APSN; SG Satoshi Inoue, IAPH; Zhang Linjiang, deputy SG, APSN; François Marier, executive assistant to the president, APSN**



## Dates for your diary

A selection of forthcoming maritime courses and conferences

### May

- 12-14** IMDEX Asia 2009 (International Maritime Defence Exhibition) – Singapore  
[www.imdexasia.com](http://www.imdexasia.com)
- 13-14** Border Security Expo – Phoenix, Arizona, US  
[www.bordersecurityexpo.com](http://www.bordersecurityexpo.com)
- 14-15** ESPO 2009 Conference – Marseille, France  
[www.espo.be](http://www.espo.be)
- 18-20** Managing Maritime Emergencies – London, UK  
[www.ibcglobalacademy.com](http://www.ibcglobalacademy.com)
- 25-28** PIANC AGA – Helsinki, Finland  
[www.transportevents.com](http://www.transportevents.com)
- 25-29** 26th IAPH World Ports Conference – Genoa, Italy  
[www.iaphconference.it](http://www.iaphconference.it)
- 26-29** International Transport Forum 2009 – Leipzig, Germany  
[www.internationaltransportforum.org](http://www.internationaltransportforum.org)

### June

- 1** Maritime Week Americas – Miami, US  
[www.petrosport.com](http://www.petrosport.com)
- 1-3** SecurePort 2009 – Detroit, Michigan, US  
[www.secureportusa.org](http://www.secureportusa.org)
- 1-3** BIMCO General Meeting – Athens, Greece  
[www.bimco.org](http://www.bimco.org)
- 2-3** AAPA Special Seminar for Public Port Authority Port Directors – San Francisco, US  
[www.aapa-ports.org](http://www.aapa-ports.org)
- 3-4** 7th ASEAN Ports and Shipping 2009 – Jakarta, Indonesia  
[www.transportevents.com](http://www.transportevents.com)
- 3-4** Transec World Expo – Amsterdam, Netherlands  
[www.transec.com](http://www.transec.com)
- 9-10** Port Finance and Investments Conference – Amsterdam, Netherlands  
[www.millenniumconferences.com](http://www.millenniumconferences.com)
- 9-12** Nor-Shipping – Oslo, Norway  
[www.messe.no](http://www.messe.no)
- 15-19** IADC Seminar on Dredging and Reclamation – Delft, Netherlands  
[www.iadc-dredging.com](http://www.iadc-dredging.com)
- 16-18** TOC Europe – Bremen, Germany  
[www.tocevents-europe.com](http://www.tocevents-europe.com)
- 16-18** Seawork 2009 International – Southampton, UK  
[www.seawork.com](http://www.seawork.com)

### September

- 7-18** Seminar on Port Environment Protection Technology – Antwerp, Belgium  
[www.portofantwerp.be/apec](http://www.portofantwerp.be/apec)





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The Port Authority of Genoa's president, **Luigi Merlo**, invites ports' personnel from across the globe to consider together the impact of the financial crisis on the world's ports

“ The major financial crisis that has swept across the entire world economy is adversely affecting our ports and, in turn, our communities ”

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I look forward to welcoming you to Genoa, a charming historic city with a rich artistic heritage, to learn, discuss and exchange ideas. **RM**



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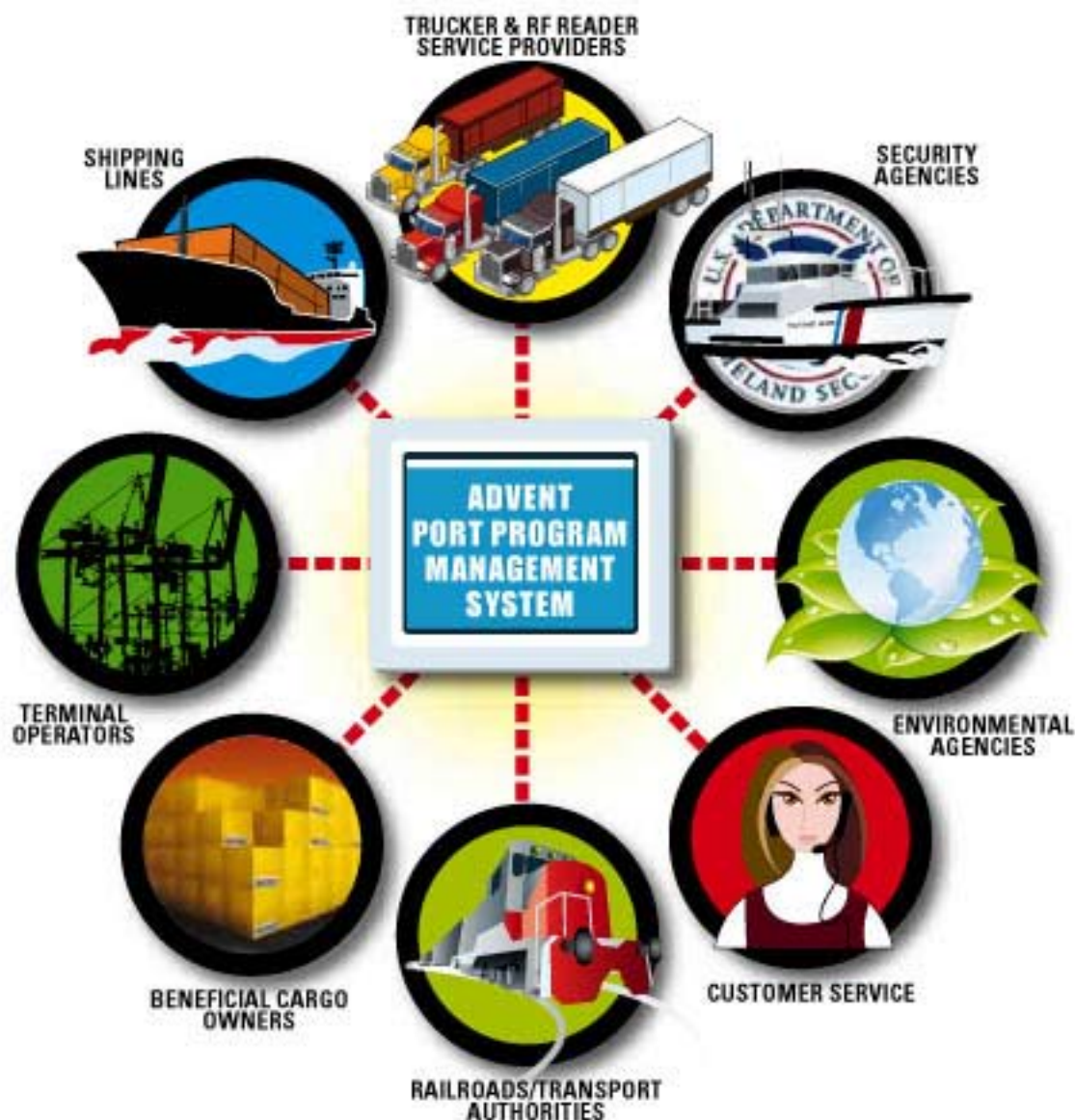
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