

BULK TERMINALS

SPRING/SUMMER 2017 *international*

THE OFFICIAL MAGAZINE OF ASSOCIATION OF BULK TERMINAL OPERATORS

COMPETITIVE ADVANTAGE

Why trading commodities in an anti-trade world is good for shipping

KING COAL

How goods such as coal are helping dry sectors to bounce back this year

SAFE SHIPPING

Are tanker conversions aimed at serving the bulk trade fit for purpose?

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WELCOME

BY SANDRA SPEARES

Markets have continued to be turbulent during the past year and while commodities markets rebounded during the latter part of 2016, the general feeling seems to be the improvement in market conditions during 2017 is likely to be slower than some might have predicted

Welcome to this first edition of *Bulk Terminals International*. In this, and forthcoming editions, we will be covering the issues that matter to bulk terminal operators. For example, the past couple of years have seen considerable political change and it remains to be seen how this will impact on trading in bulk commodities. What happens with the Chinese market is key to trading in iron ore and coal, with some suggesting that the drive by China to improve the situation regarding air pollution might mean an opportunity for cleaner-burning energy supplies.

At the same time, the move to reduce emissions on a global basis – a global sulphur cap for the shipping industry is only three years away – coal trades are liable to be adversely affected with the move towards cleaner fuels. While there are a few years left to run, the port of Amsterdam's target of a coal-free port by 2030 is a strategy that many others are likely to follow and the port is already reining back transhipments.

As the appetite for shifting bulk cargoes such as iron ore shows no sign of abating, owners and operators need to keep a close eye on safety issues affecting the carriage of bulk cargoes. Cargo liquefaction has been one major concern on the agenda,

with a rise in the number of incidents, some of which have ended in tragedy. Calcium hypochlorite, and the dangers of carrying it, has also made a return to the safety agenda, while March saw the foundering of Polaris Shipping's *Stellar Daisy* with the loss of 22 members of the 24-man crew, while the ship was transporting a cargo of iron ore for commodities giant Vale.

“ While there are a few years left to run, the port of Amsterdam's target of a coal-free port by 2030 is a strategy that many others are likely to follow and the port is already reining back transhipments through the port

While this year has seen the delivery of newbuildings in the bulk segment for very large ore carriers, the concern is whether the VLOC fleet, which includes a substantial number of vessels converted from VLCCs to VLOCs, is fit for purpose.

The potential that ports offer for investment by finance houses has been one of the features of the past year. While investment in shipping may have been a rocky road for private investors, ports do seem to be attracting plenty of attention.

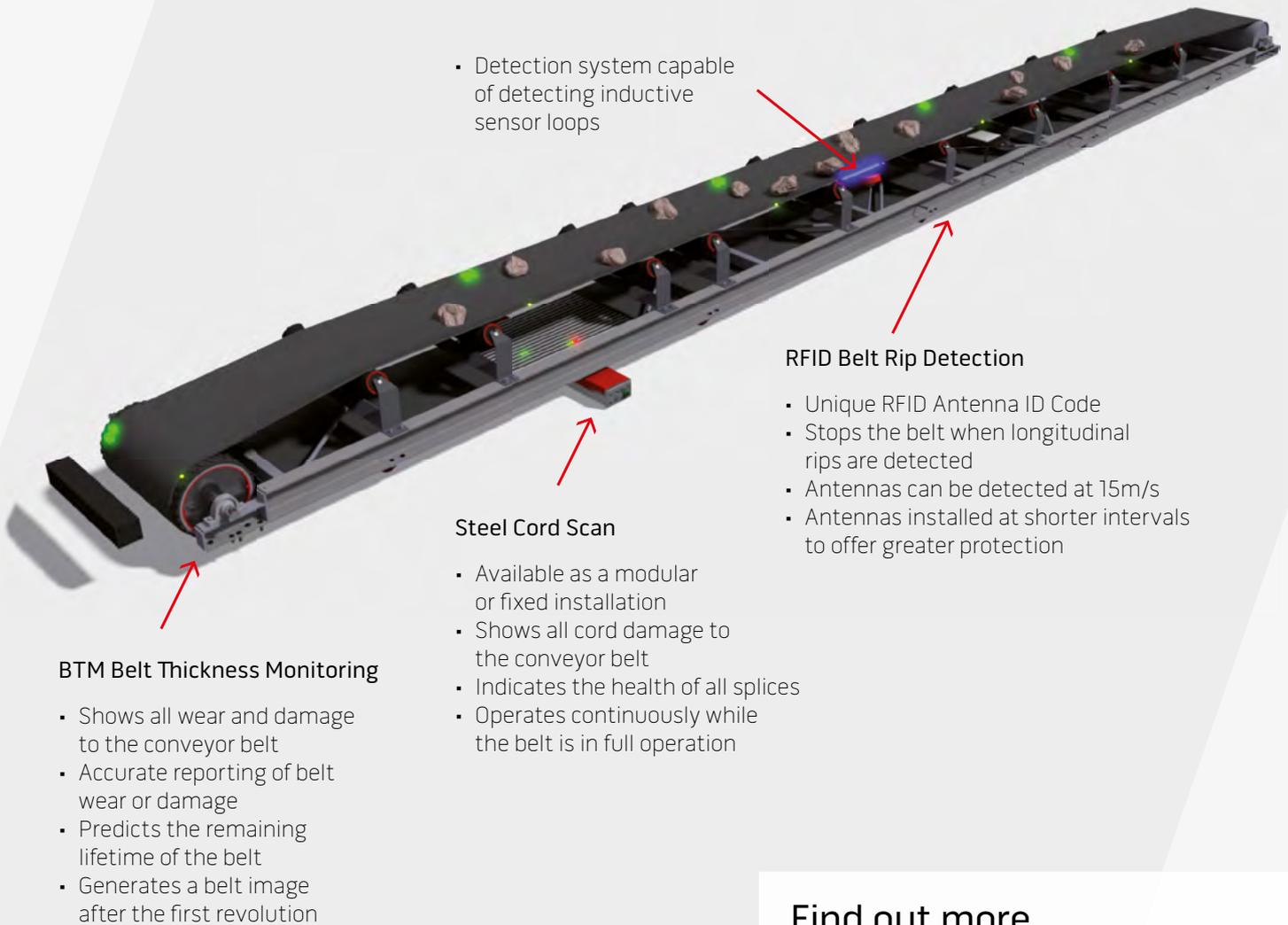
With port developments like those in Australia the target of high profile deals involving investment houses, ports present greater opportunities and have a profile that fits investors planning strategies more closely than pure shipping does. Rental income from ports seems to be more attractive a proposition in the medium term than relying on the turbulent movement of freight rates.

Port investment has also been continuing apace in technological terms, with advances in loading and unloading equipment, storage and so on. Ensuring not only a swift service to port clients, as well as an efficient and cost effective one, is resulting in many new technological developments.

We hope you enjoy this first edition of *Bulk Terminals International*.



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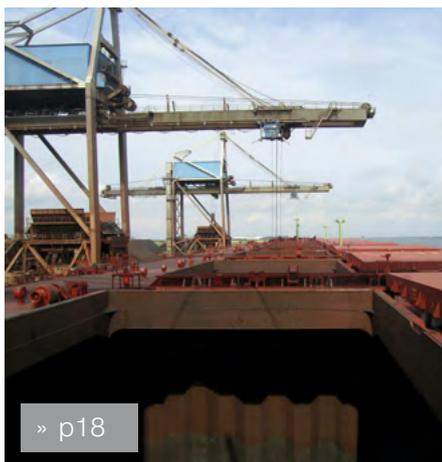
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CONTENTS



1 EDITOR'S LETTER

Welcome to this first edition of *Bulk Terminals International*

6 CHIEF EXECUTIVE

Ian Adams, Chief Executive, ABTO, looks at a new dawn for the industry

8 INDUSTRY NEWS

All the latest industry news from across the globe

16 VIEWPOINT

Trading commodities in an anti-trade world can be good for shipping, says Basil Karatzas of Karatzas Marine Advisors

18 COAL TRADE

Is there any light on the horizon as the industry battles through the recession?

23 GRABS AND CRANES

Crane developments demand flexibility, safety and environmental friendliness.

28 MECHANICAL LOADERS AND UNLOADERS

Using conveyor systems for handling complex goods

31 CEMENT TRADE

The environmental impact of moving bulk cargoes

33 BIOMASS HANDLING

Why biomass products play a big part in industry operations

35 COVERED STORAGE

The dangers of liquefaction from insufficient covered storage facilities

37 BAGGING EQUIPMENT AND FIBCS

The drive towards more eco-friendly and super-efficient means of bagging

39 BULKER SAFETY

Why recent events have put bulk carrier safety back on the agenda

45 CANADA

Commodities investment means Canada's ports are generally booming

48 AUSTRALIA

How private investment indicates a recognised potential in Australia's ports

52 NETHERLANDS

Amsterdam port is continuing its' drive towards a coal-free zone

56 MIDDLE EAST

Players in the region's ports sector continue to build investment

60 GERMANY

Innovative technology, including new loading systems, comes to the fore

64 EVENTS CALENDAR

Upcoming conferences and not-to-be-missed events for all those in the industry



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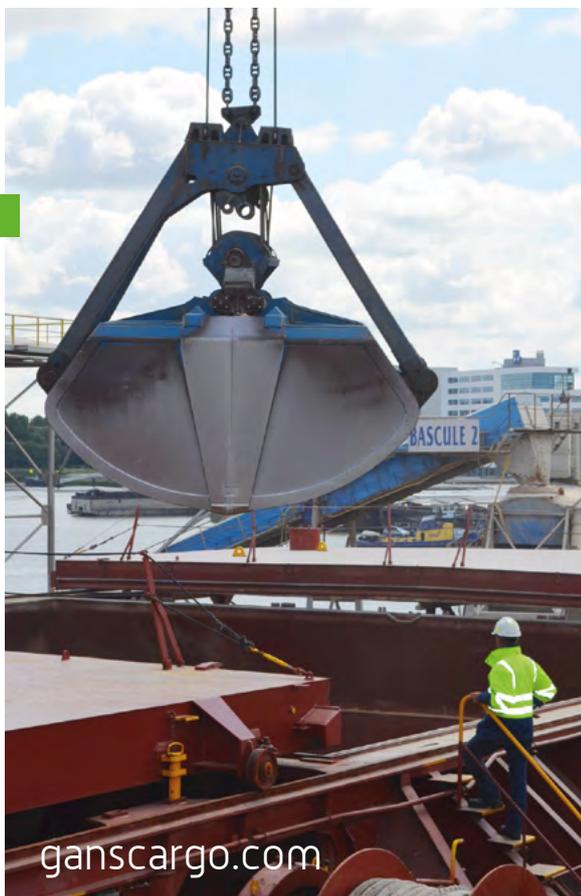
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TRADE CRAFT

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PUBLISHED BY

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A NEW DAWN

IAN ADAMS, CHIEF EXECUTIVE, ABTO



It gives me a great deal of pleasure to write this welcoming message to our readers. The publication of *Bulk Terminals International* represents the start of a new dawn for the industry.

Bulk Terminals International is the first publication of its kind that is aimed at bulk terminal operators and is the official publication of the Association of Bulk Terminal Operators (ABTO).

ABTO was formed last year to provide a voice for bulk terminal operators at a national and international level, providing a forum for its members to discuss the issues impacting seaborne trade and the global transportation of bulk commodities.

ABTO encourages the free and frank exchange of opinion to enable the bulk sector to present a united front in all discussions with governments, shippers, shipowners and operators to promote and protect member interests. *Bulk Terminals International* provides another platform for the association to communicate with the membership and other stakeholders.

REPRESENTATION

Continuing the theme of the purpose of ABTO, one very important role is that of representation. We have access to meetings at the International Maritime Organization (IMO) via member state delegations and other NGO delegations. This enables us to keep abreast of any developments when they arise and to discuss them with the delegates at the meetings. We currently attend the following meetings:

MARITIME SAFETY COMMITTEE (MSC)

The MSC is the most senior and highest technical committee of the IMO. It is responsible for regulation on all aspects of safety. The function of the Maritime Safety Committee is to "consider any matter within the scope of the Organization concerned with aids to navigation, construction and equipment of vessels, manning from a safety standpoint, rules for the prevention of collisions, handling of dangerous cargoes, maritime safety procedures and requirements, hydrographic information, log-books and navigational records, marine casualty investigations, salvage and rescue and any other matters directly affecting maritime safety".

The MSC is responsible for the Safety of Life at Sea (SOLAS) Convention. For ABTO, the International Maritime Solid Bulk Cargoes (IMSBC) Code, which form part of the SOLAS Convention, is of interest as amendments to the code can impose requirements on terminal operations.

MARINE ENVIRONMENT PROTECTION COMMITTEE (MEPC)

The MEPC is required to consider any matter within the scope of the organisation concerned with prevention and control of pollution from ships. MEPC is responsible for considering and approving amendments to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978, which is often referred to as MARPOL 73/78 or simply MARPOL.

MARPOL consists of six annexes, of which ABTO is monitoring the developments with regards to Annex V which regulated garbage generated on board ships.

Since the revision of Annex V, which entered into force from 1 January 2013, cargo residues are now classified as garbage. There is still work to be done regarding this issue and will be featured in later issues of *Bulk Terminals International*.

SUB-COMMITTEES

Both the MSC and the MEPC are assisted in their work by seven subcommittees. ABTO monitors the work of one of these sub-committees, Carriage of Cargoes and Containers (CCC). CCC receives instructions from MSC regarding the IMSBC Code and MEPC with work related to MARPOL. It is at the sub-committee stage where the resulting regulations can be influenced.

FORTHCOMING MEETINGS

MSC 98 is due to meet **7–16 June 2017**.

On this occasion, none of the 111 papers currently submitted contain anything that will have an impact on ABTO members.

MEPC 71 will meet **3 – 7 July 2017**.

There is a paper submitted here with proposed 2017 guidelines for the implementation of MARPOL Annex V. It does not progress the issue of Harmful to the Marine Environment (HME) cargoes, which is something that will have to be addressed in due time.

CCC4 will meet **11 – 15 September 2017**. There are currently no papers submitted for this meeting except for the agenda.

Any papers on topics that may have an impact on member's businesses are available on the member's section of the website.

BULK TERMINALS 2017 ACHIEVING EFFICIENCY AND COMPLIANCE

This is the inaugural conference of ABTO. We are very much looking forward to meeting as many of our members and potential members in London on 31 October and 1 November 2017. The programme has some of the best speakers available and promises to be highly educational in the various topics that will be covered.

The first day topics include Markets and Strategic Overview, where we hope to gain an insight into the future. We have an eagerly anticipated Biomass session with highly regarded speakers explaining how to ensure terminals are optimised for the handling of biomass. The first day will end with sessions on Security and also a short technology showcase.

The opening session on the second day looks at various aspects of Safety and Environmental issues. These cover the latest developments at IMO, Cargo Sampling, Liquefaction of Cargoes, Managing Emissions during Cargo Operations, Risk Factors and Modernising Terminals. The afternoon session looks at Operational Efficiencies with presentations from both the Ship and the Terminals perspective including lessons that can be learnt from the coal supply chain.

Full details of the programme can be found on the website:

www.bulkterminals.org

We are delighted to welcome many supporting organisations for Bulk Terminals 2017:

ICHCA International. The International Cargo Handling Coordination Association (ICHCA), founded in 1952, is an independent,

not-for-profit organisation dedicated to improving the safety, security, sustainability, productivity and efficiency of cargo handling and goods movement by all modes and through all phases of national and international supply chains.

Port Finance International. The leading online journal for the latest developments in port investment and operations. Featuring editorial content targeted to industry leaders and experts the journal includes daily news, features and insight related to port financing around the globe.

IMarEST. The Institute of Marine Engineering, Science and Technology is the first Institute to bring together marine engineers, scientists and technologists into one international multi-disciplinary professional body.

The Nautical Institute. An international representative body for maritime professionals involved in the control of sea-going ships. It provides a wide range of services to enhance the professional standing and knowledge of members who are drawn from all sectors of the maritime world.

MHEA. The Materials Handling Engineers' Association supports the technical and commercial interests of UK and overseas companies supplying and using bulk handling equipment.

The University of Greenwich. The Wolfson Centre for Bulk Solids Handling Technology is internationally recognised for its expertise in fields associated with bulk particulate handling and in the science and practical application of technologies to deliver improved process efficiencies.

SHAPA. The Solids Handling and Processing Association provides a sound commercial and technical platform for members, helping them to succeed in today's challenging economic environment.

I hope that you enjoy this first edition of *Bulk Terminals International* and I look forward to meeting you at the end of October at *Bulk Terminals 2017*, for what promises to be a fantastic event and a superb opportunity for networking.

WORLD NEWS ROUND-UP

Developments in China will continue to influence the mining industry as far as demand is concerned. Plus life after Brexit, working towards a fully digital industry, drone inspections and the latest from the Baltic Exchange



SIR JOHN PARKER, CHAIRMAN
OF ANGLO AMERICAN

Continued slow global recovery was the watchword at the recent Anglo-American AGM. Sir John Parker, Chairman of Anglo American, told shareholders that 2016 was a year of continuing slow global economic recovery and even the remarkable acceleration in prices in the second half for bulk commodities such as metallurgical coal and, to a lesser extent, iron ore and thermal coal, “was still not quite enough for Anglo American to be able to record a higher average price for its own basket of products compared to 2015”.

Developments in China will continue to influence the mining industry as far as demand is concerned, he said. The country’s growth target for 2017 is set at 6.5% as the country seeks to balance its economy through a mixture of stimulus and managed slowdown.

“That said, China’s admirable efforts to improve air quality may boost demand for some of the higher-quality and cleaner-burning iron ore and coking coal that we are well positioned to supply for steel making.

“Widespread expectations of continuing slow growth in many regions of the world outside of Asia, accompanied by uncertainty over

how much of the reform programme, including its ambitious infrastructure plans, of the new and protectionist-leaning US administration can actually be achieved, may be a drag anchor on the global economy for some time to come,” he concluded.

LIFE AFTER BREXIT

Trade facilitation, port zones and transport connectivity are to be central pillars of the UK Government’s post Brexit trade and transport strategies according to British Ports Association Chairman Rodney Lunn.

He suggested that ports could play a vital role in driving regional and national economies, although the government must provide the right policy and regulatory framework and explore investment options for better connecting ports with national networks.

Mr Lunn, who is also the Chief Executive of Shoreham Port, was speaking at the Association’s annual lunch. “Ports are highly entrepreneurial. They continue to invest in infrastructure, equipment and their people all at no cost to the government.

“It is vital that government agrees a post Brexit customs strategy that does

not create lorry parks on roads leading to Ro-Ro ports such as Dover.

“Post Brexit, the BPA will be pushing for the EU Port Services Regulation to be repealed. It is unwanted and unnecessary and also let’s look properly at the customs free trade proposals for ports”.

He added: “If UK ports are going to compete with their European counterparts, the Government must push forward with our ‘port zones’ concept to fast track planning decisions and limit the impacts of environmental designations.

“Ports have strong green credentials, but Marine Conservation Zones and Special Protection Areas in ports will only hamper port development,” he told those present. “With the right conditions ports can grow the economy and push regions forward.”

Finally, Mr Lunn welcomed the Department for Transport’s recently announced Port Connectivity Study, but called on the government to invest in transport schemes to help link up the logistics network:

“We welcome the new Port Connectivity Study, but it is vital that following this stocktaking exercise the government invests in good road and rail connections to all ports to ensure that the UK has efficient links for goods and passengers to help the economy compete.”

ITIC WARNS OF MISSED INSTRUCTIONS

International Transport Intermediaries Club (ITIC) says communication failings within shipbrokers’ organisations can result in important instructions from principals being overlooked, leading to potentially costly claims.

In its Claims Review, ITIC cites an incident in which an off-duty member of a tanker broker’s operations staff received an individual phone and email message over the weekend from a colleague in a different office, asking for important instructions regarding the amount of cargo to be loaded to be passed on to.

The operations person took no action, having wrongly assumed that the message had also been sent to the

company’s general operations email address and that it would be dealt with by an on-duty colleague.

The message detailed a request by the charterer to change the discharge port rotation to avoid severe congestion at what was originally scheduled to be the first port of call.

This revised rotation required a reduction in the vessel’s draft to enable it to discharge at what was now intended to be the first port of call.

Because of the failure to pass on the message, however, the wrong quantity of cargo was loaded and there was no option but to remain with the original rotation.

A significant amount of demurrage was subsequently incurred, which was passed on to the broker and ultimately reimbursed by ITIC.

ITIC says a large number of claims caused by messages not being forwarded involve communications between different offices of the same broking company.

It urges brokers to ensure that they have systems in place to prevent such errors occurring in their business.

SHIPAMAX PUSHES FOR DIGITAL

Pushing shipping into the digital era has always been a tough process and most in the industry will remember the markets’ reluctance to take up paper trading. Now a London-based company Shipamax is pushing shipping to go digital.

The company has raised \$2.5m in seed funding, which it is planning to spend to continue building its software platform for the shipping industry. Backing for the project is coming from Cherubic Ventures, AME Cloud and FF Angel.

Founded last year by Fabian Blaicher and Jenna Brown, the aim is to encourage ship brokers, owners and operators to stop using email and other forms which take up a lot of time, with data presented in an unstructured way.

“Shipamax is on a mission to fix the ship booking experience,” the company says. “Shipamax’s vision is to become the platform of the industry, replacing the thousands of unnecessary

emails, siloed Excel files and instant messages between players required for each booking. Built for the modern workplace, companies use Shipamax to improve team collaboration, increase responsiveness to clients and turn data into their competitive advantage.”

The company says it will work with clients “to leverage data from existing systems — interfacing with your voyage management, email clients or other systems”.

PORT QASIM OPERATIONS UNDERWAY

Pakistan’s first state-of-the-art coal, clinker and cement bulk cargo terminal at Port Qasim is now fully operational and has commenced handling port calls by cargo vessels. Awan Trading took a first delivery of coal at Pakistan International Bulk Terminal Limited (PIBTL) Terminal at Port Qasim recently.

PIBTL is a public listed company quoted on the Pakistan Stock Exchange and the company has invested around US\$285m in the establishment of the county’s first and only common use coal, cement and clinker handling terminal at the port.

The company has a thirty year build, operate and transfer arrangement with Port Qasim Authority and has built its own jetty and is equipped with two coal ship unloading cranes and one cement/clinker loading crane and the facility is capable of handling 12 million tons of cargo per year with storage yard capacity spread over 62 acres.

The aim is to attract port calls because of improved cargo handling using the facilities mechanised services. The aim is also to try and ease congestion at other existing port facilities and also provide a service that is not only more efficient, but environmentally friendly.

DRONE DEVELOPMENT

The way ships agents support their customers looks set to be transformed with the news that Wilhelmsen Ships Service (WSS) will soon be delivering its agency essentials via drone.

This much-talked-about technology, has obvious applications for the shipping industry. Marius Johansen, VP Business Solutions & Marketing, WSS

TANKER OPERATORS COULD
SEE DRONE INSPECTIONS



Ships Agency explains: "Whether it is deliveries of critical documents or vital medical supplies, tank inspections, or monitoring cargo and stockpile levels, we believe semi-autonomous drone flights can support and further enhance what our ships agency team can offer our customers".

He adds: "Relied upon by owners, operators, vessels and crew to get spare parts, medicine, documents, or cash to master where it needs to be at moment's notice, drone delivery is a natural extension of our existing agency service portfolio".

Dispensing with the need for launch boats to deliver such essentials to vessels at anchorage, along with cutting delivery times, Johansen estimates drone flights will also slash costs. With launch vessels typically costing on average US\$1500, he suggests a drone delivery would eventually come down to costing just US\$150.

Launching a large-scale working pilot project in one of the world's busiest ports in 2017 — in spite of the complexity of global aviation rules and restrictions placed on unmanned aerial vehicles — for WSS, drone delivery is very much here to stay.

Meanwhile, a drone developed to improve maritime safety has earned an innovation award for a partnership comprising AkzoNobel's Marine Coatings Business, the supplier of International

coatings. The Plimsoll Award for Innovation, awarded by *Professional Mariner* magazine, recognises the efforts of the group, including Barrier Group, DroneOps, Safinah and a major oil tanker operator, to develop an unmanned aircraft to carry out remote inspections.

The project, called RECOMMS, (Remote Evaluation of Coatings and Corrosion on Offshore Marine Structures and Ships), uses virtual reality technology and semi-autonomous operation of a drone to remotely inspect ballast tanks, and other difficult to access areas on vessels and offshore structures such as wind farms.

"We're proud to be part of a project that aims to significantly improve the accuracy, efficiency and safety of routine maintenance, and delighted that this contribution is being recognised," said Michael Hindmarsh, a spokesman for RECOMMS and business development manager at AkzoNobel.

"Surveys of enclosed spaces and ballast water tanks are essential and increasingly critical for ship and offshore asset owners. However, inspecting these areas thoroughly can require working at height, entering poorly lit or confined spaces and negotiating slippery surfaces, all of which are high-risk activities that the maritime industry is keen to address. Drone technology is the ideal solution for mitigating the risks involved."

GENERAL CARGO LEADS MARSEILLE FOS

First-quarter cargo throughput at leading French port Marseille Fos was marked by strong growth in general cargo which totalled 4.98 million tonnes for an 11% increase on January-March last year.

Conventional trades jumped 22% to 0.7m tonnes on the back of steel products. Dry bulks, largely based on ore imports for the steel industry, surged 11% in March to finish the quarter 1% ahead on 3.41million tonnes — signalling a recovery from the 2016 slowdown caused by China's global dumping of cheap steel, the conversion of coal-fired plants to biomass fuel and a poor harvest. With steel-related traffic down 4% to 2.13m tonnes and agro-bulks 67% worse on 0.06m tonnes, the result was driven by a 25% increase in other bulks to 1.22m tonnes.

Liquid bulks, dominated by oil and gas volumes, dropped 10% to 11.17m tonnes. The oil and gas total of 10.44m tonnes was also down 10% as refinery conversion and maintenance projects saw crude imports fall 25% to 5.2m tonnes.

In contrast, refined products soared 22% to 3.29m tonnes, LNG added 5% for 1.24m tonnes and LPG was up 4% on 0.7m tonnes. Liquid chemicals and agro-products also contributed 0.7m tonnes, a 12% fall reflecting a five-yearly maintenance shutdown at the Kem One plant. The three-month cargo total across all sectors finished 3% down on 19.56m tonnes.

XPO Logistics, one of the world's ten largest supply chain providers, is to start operations at the end of this year from a new 45,000m² warehouse in the Feuillane logistics zone at the port. The company will be servicing household and multimedia products distributor Electro Depot from the first warehouse in a 185,000m² scheme by developer Idec Life.

Added to the XPO site, a 60,000m² Distriport project agreed in January with developer Wlife means that warehouse expansion at the port in Q1 2017 has already outstripped last year's 70,000m² total, with more to be announced in Q2.

BALTIC EXCHANGE CHIEF
EXECUTIVE MARK JACKSON



BALTIC EXCHANGE MAKES AMBITIOUS PLANS

Newly appointed Baltic Exchange Chief Executive Mark Jackson has set out the Exchange's position during MPA Singapore Maritime and Singapore Iron Ore Weeks.

"The recent acquisition of the Baltic Exchange by the Singapore Exchange has reinvigorated this key international maritime institution, allowing us to grow our leadership profile and play a bigger role than ever in setting standards, building consensus and leading change in the shipping markets," he told delegates.

On the regulatory side, the Baltic Code currently contains guidance for shipbrokers, owners and charterers, highlighting best and unacceptable practices and underpins its dispute resolution service. The Baltic Exchange intends to enhance the Code to provide greater clarity on the role of the shipbroker and raise global freight trading standards.

The Baltic Exchange has ambitious plans for assisting in the development of a digital maritime market infrastructure to integrate the risk management of cargo and freight. This will involve working with the industry to develop tools that deliver real-time cargo and freight contract management, messaging workflows and data standards. As an independent body, the Baltic Exchange is able to provide the framework the bulk freight industry needs to develop new tools and standards.

Changes to the Baltic Exchange's data policy were also announced. Compiled using assessments of freight rates and other data supplied by shipbroker panellists, Baltic Exchange data is used to settle freight derivative contracts and is increasingly written into charterparty agreements. The terms of the Baltic's Data Policy will be changed to ensure that companies with physical freight contracts that reference Baltic Exchange data will be required to use a Baltic Exchange Panellist to calculate the settlement price or prices.



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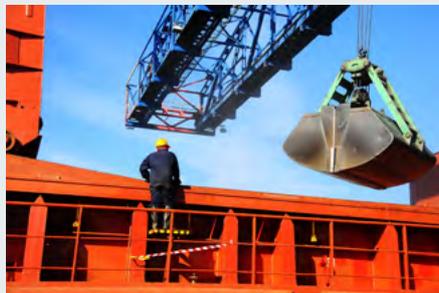
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BUILDING BRIDGES

COMPANY NEWS

Gans Cargo Operations is a Rotterdam headquartered shipping and forwarding company, specialised in international supply chain logistics. Our proactive and innovative thinking allow us to respond adequately to new developments. We listen carefully and understand our customers needs, offering a wide range of tailor made solutions. We can utilise owned and long term leased (bulk) storage facilities at strategic locations worldwide and transport your cargo to any destination.

Gans Cargo Operations represents almost a century of experience in serving a large number of multinational customer such as BP, Oxbow Energy Solutions, Statoil, P66, Rain Carbon, Vitol, Emerates Global Aluminium, El Nasr Coke & Chemicals, Cemex, Teck Coal, which are all major players in international dry and liquid bulk markets.



Gans Cargo Operations is the eyes and ears on the spot on behalf of her customers. Our strongly motivated and dedicated team goes the extra mile to help preventing and/ or solving problems by thinking in solutions interactively. Our teams are at your service on a 24/7 basis.

We strongly believe in building bridges between all parties involved, in order to ensure that both vessel and cargo are handled in a smooth, reliable manner in line with the expectations of our customers.

In March 2015, we founded **Gans Egypt Logistics Services**, a joint venture between Gans Cargo Operations and the Naggar Group. Through this joint venture we are rendering our logistics services as your supply chain logistics agent in all Egyptian seaports and during Suez canal transits.

We acquired 50.000m² long-term leased open pit storage area, which is connected via river to the port of Alexandria. This area is managed by our joint venture and is very suitable to store your bulk products. Recently, we have purchased four grabs of 13cbm each, enabling us to rent out same against a competitive rate to the geared, but not grab-fitted vessels of our



customers for loading / discharging their dry bulk cargoes in any Egyptian sea port.

In October 2016, we founded **Sharaf Gans Logistics Services**, a joint venture between Gans Cargo Operations and the Sharaf Group. Headquartered in Dubai, this joint venture serves as an agent and supply chain logistics provider in more than 150 ports in the Middle East, Africa and the Indian subcontinent.

Within this joint venture, we are developing a bulk warehouse distribution hub (initially 5000 M2) in UAE as a strategic stock position to serve the broader region with just-in-time deliveries either by truck or by waterway.

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ENSURING NOTHING GETS SPILLED

COMPANY NEWS

BEUMER supplies belt conveyors that transport bulk material to its destination quickly, efficiently and in an environmentally friendly manner

Whether granular, fragmented or cohesive, BEUMER Group belt conveyor systems transport all kinds of bulk material in a wide variety of industrial sectors. They connect the production sites of raw materials with processing plants or ports, such as in Callao, Peru. The system prevents the concentrates coming into contact with the environment and conveys them to the ship's holds without generating dust.

The BEUMER Group is a world-leading systems provider for transporting, loading, filling and packaging bulk material. The BEUMER portfolio includes curved belt conveyors for the fast and reliable transportation of large quantities of material from the quarry or mine to the factory or port. These overcome long distances, steep gradients and tight curves, and can be individually matched to the particular task and topography thanks to their ability to negotiate vertical and horizontal bends.

Depending on the requirements, BEUMER provides open troughed belt conveyors for higher throughputs and greater mass flows as well as pipe conveyors that protect the bulk material from environmental influences and at the same time protect the environment from the conveyed material.

Protected right to their destination

With their enclosed form, BEUMER pipe conveyors also enable material to be transported without additional features. Here, conveying downhill in the belt, which is formed into a pipe with diameters between 150 and 650mm, and the transportation of different materials on the top and bottom strand are equally possible. For textile belts, a guide value for the curve radius is a minimum of $300 \times d$, and for steel rope belts a minimum of $600 \times d$.

The capacity is up to 6,000 tonnes per hour. The material can also be transported at speeds of up to 6.5 m/s. The gradient can be up to 30 degrees. Long distances and very tight curves are possible. And, because of its ability to negotiate curves, significantly fewer or even no transfer towers are required, depending on the length of the conveyor and the possible curve radii. This results in substantial cost savings for the customer, and allows the BEUMER Group to customise the system to the individual routing.

From engineering to commissioning

As an example, Transportadora Callao SA, operator of a special loading terminal at the port of Callao/Peru, relies on a BEUMER Group pipe conveyor for the transportation of zinc, copper and lead concentrates

of different mining companies from the warehouse to the terminal. With its ability to negotiate curves in three dimensions, the approximately 3,000m-long conveyor can be optimally adapted to suit its routing. Even more importantly, the system prevents the concentrates from coming into contact with the environment and conveys them to the ship's holds without generating dust. The BEUMER Group was responsible for the engineering and supply, including the steel structure, supervision of the installation and putting the pipe conveyor into operation.

Trucks and trains deliver the mining commodities from the mines to the ore storage yards, from where they are then transported to the open access station. Here, the concentrates are received by a 43m-long feed belt, which transfers them to the pipe conveyor at a height of six metres. The feed belt is equipped with a metal detector and an electromagnet. In this way, there are no metal pieces which can damage the downstream pipe conveyor. At the end of the route, the conveyor system runs along the seafront to the transfer tower. Here, the belt opens automatically. It transfers the material to another belt conveyor, which conveys the ore to the ship loading system.



WELL-ENGINEERED

COMPANY NEWS

With a foundation of 50 years of experience, Guttridge is a flourishing company, globally respected for delivering well-engineered, reliable materials-handling solutions that continue to anticipate dramatically changing industrial needs.

It offers tried and tested bulk materials handling equipment in a wide range of industries and on a global basis.

We supply everything from single machines to fully integrated handling solutions and we manufacture in both stainless steel and mild steel, producing durable equipment for every material and eliminating the risk of contamination, where necessary. However, Guttridge isn't simply an off-the-shelf supplier. What sets us apart is our ability to design and build truly bespoke solutions for your specific application.

Our comprehensive range of bulk materials handling equipment includes:

- Bucket elevators
- Screw conveyors and dischargers
- Chain conveyors and dischargers
- Belt conveyors
- Load and discharge hoppers
- Vertical blenders and live bins
- Ancillary equipment such as spoutings and fittings, slide valves and diverters.

The starting point for any bulk materials handling project is an understanding of the flow properties of the product. Here, there is no substitute for experience and we rely heavily on the wealth of

A MAJOR FEED MILL EXTENSION BEING INSTALLED IN NORTHERN IRELAND



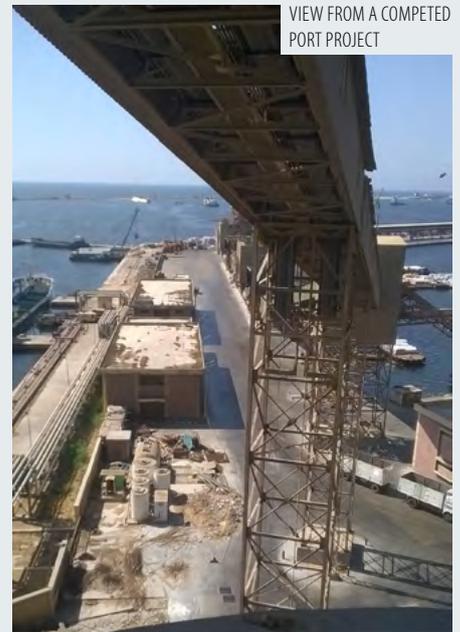
knowledge we've developed from dealing with a truly diverse spectrum of materials over very many years.

However, we've also recently invested in a modern powder tester to further strengthen our understanding in this key area. This detailed material testing allows us to predict material behaviour and flow properties more reliably thus vastly improving our ability to provide "right first time" equipment specification.

Our design and manufacturing practice similarly focuses on delivery to the customer and we continue to invest in the technology needed to achieve excellence. We look to become a trusted partner for each and every bulk materials handling project and these capabilities make Guttridge a strong and reliable partner for bulk materials handling projects.

Conveying requirements are constantly evolving in terms of scale and the range of materials handled. We face the challenges these changes bring with considerable enthusiasm and with the drive, skills and application expertise needed to deliver cost-effective systems that really work.

VIEW FROM A COMPLETED PORT PROJECT



A MIXER THAT WAS USED IN THE RECYCLING INDUSTRY



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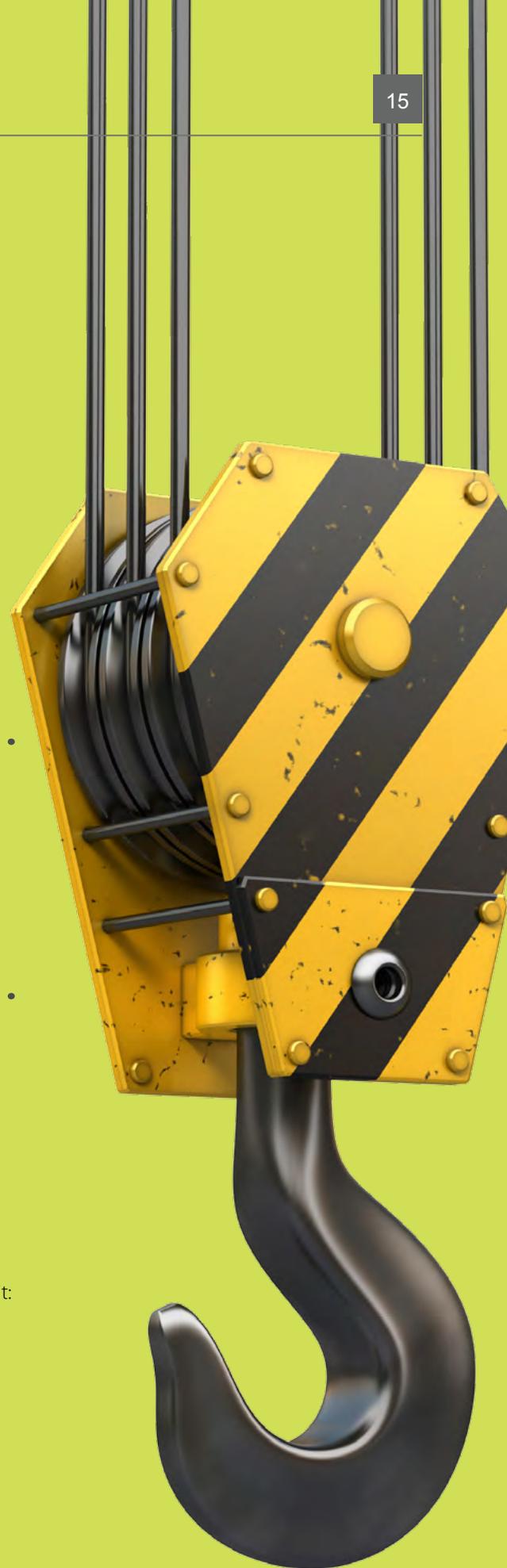
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SILVER LININGS

BY BASIL KARATZAS

Trading commodities in a less efficient, anti-trade world can be good news for shipping, says the Founder and CEO of Karatzas Marine Advisors & Co

Globalisation and trade have been on the frontline of political debate in many countries — mostly developed countries — in the past few years. On several occasions, the results of elections for national governments have revolved about the movement of people, goods and investments across borders.

The outcome of the Brexit referendum in the UK and the election of Donald Trump in the US have been two conspicuous verdicts against globalisation, while many other national elections in continental Europe have come close to delivering more anti-trade news.

In a way, it's sort of easy to rationalise, at least on the surface, the wave of anti-globalisation and anti-trade as a hot topic in our days: at the risk of being simplistic, as information nowadays is freer to move

around in a world that has become more interconnected (due to technology, but also due to trade agreements based on the World Trade Organization successes in the past two decades), unspecialised labour in developed countries has found a much cheaper substitute in developing countries, while technology has placed certain aspects of specialised labour in developed countries in jeopardy.

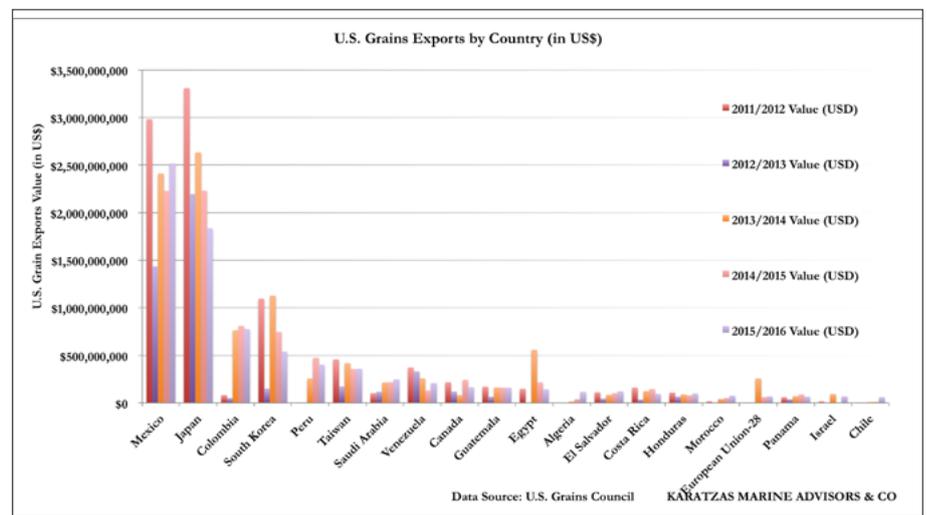
As the lower social strata have not benefited proportionally in the past couple of decades, financial hardship has brought anger and even desperation. Radical voting patterns have been considered acceptable in an effort to try to bring back some of the status quo.

From the perspective of the shipping industry (as part of the supply chain and logistics industries), daily headlines against trade and globalisation cannot

be considered hopeful news. Shipping thrives when nations are engaged in trading activity and the more they trade, the better. Trading volumes can be influenced by management trends, such as outsourcing and just-in-time (JIT) inventory, by economic activity and growth, and by the easiness to trade by lowering trade barriers and tariffs.

Management trends come and go, but nothing has changed fundamentally in this front in the past few years. And, while world economic growth has been acceptable (3.5% is projected for 2017 by the IMF), given the circumstances, world trade growth has stalled in the past couple of years. The state of the shipping industry is a partial result of stalled trading volumes.

Given the reasonable-to-expect scenarios in the near and intermediate



future, one has to expect that trade will be facing hard times, and shipping, as a result, likely cannot expect a much brighter future. One of the first actions President Trump has taken in office has been to withdraw from the Trans Pacific Partnership (TPP), while tough talk has befallen one of the most consequential free trade agreements in the world, the North America Free Trade Agreement (NAFTA). Trading quotas, tariffs, border adjustment taxes (VAT), countervailing duties (CVD) cannot be good for trade and shipping, any logical argument would hold.

However, an interesting development has taken place in the past few months which is worth a closer examination, as it may bring some clarity to a confused crystal ball. Free trade agreements make for an efficient and optimised world, and countries are left to compete based on their competitive advantage, as economists would say, focusing on the production of what they are most competitive at. And, an economically efficient production is followed by economically efficient trade and shipment to the consumer, for the optimal economic outcome. After all, trade is based on the premise of optimal economic outcome.

But, what if there were trade barriers? Could trade barriers make for a less efficient supply chain which, in its inefficiency, can actually be good for shipping? Possibly for trades of raw material and commodities where there is little substitute and trade has to go on, irrespective of trade barriers? Let's say for food and natural resources mainly, but less for end-consumer products where the buyer can have greater flexibility.

Besides the border wall talks between the US and Mexico, NAFTA seems to be another contentious point as there is a US\$60bn trade balance surplus in favour of Mexico. There have been reports that the Trump Administration has come extremely close to, at least once, unilaterally withdrawing from NAFTA. While lots of finished products flow northbound from Mexico, the country traditionally has been the biggest importer of US grains and other

agricultural products which are utilised for food or feedstock in Mexico.

In general, Mexico imports one-fourth of all US grain and agricultural exports, typically ranging from \$2 to 3.5bn per annum, as per accompanying graph. In other words, in terms of US agricultural and grain exports, Mexico is a very material market for the US farmers.

There have been front page news in international business newspapers that Mexico presently is actively looking to fulfill, at least partially, their grains import requirements from countries beyond the US, preferably from countries in South America. Given the tension of the talks north of the Mexican border, any prudent Mexican importer would like to have a more diversified import base. Exacerbated by news of a bumper crop season in the US and also overseas, Mexico likely will not face major inconvenience finding new partners in the international market.

BUMPER CROP SEASONS

Again, exacerbated by bumper crop seasons worldwide and historically very high stockpiles of grains, developing new markets or finding new markets to replace the lost exports to Mexico, it can be very critical for the US farmers. So much so, that there have been, again, front page news in the international business press that US farmers have been very concerned potentially losing the Mexican market. Once again, this is another example that our (trading) world is usually a multi-dimensional and not necessarily just transactional, flat world.

As challenging the news as they may have been for the US farmers and the trading representatives of the US and Mexico, examining the developments from a strictly shipping point of view, one has to be very pleased. US grains are primarily exported from the US Gulf ports of New Orleans and Houston, and a trip to Mexico by sea is shorter than a week.

If Mexico follows through with its announcements and substitute its US grain imports with imports from South America, now the voyage by sea is at least twice as long, typically lasting two weeks,

if a trip to River Plate in Argentina is fully allocated. In other words, all else being equal, this development can double the ton-mile demand for the grains trade by sea, which definitely is great news for dry bulk shipping and mostly for panamax and supramax dry bulk vessels.

And given a voyage from the US Gulf to Mexico is as short as it can get for exporting US grains, for US farmers finding alternative markets, the shipping distance will only have to increase. Imagine if Japan, the second largest importer of US grains were to be buying more grains from the US, then the ton-mile increase is almost fivefold.

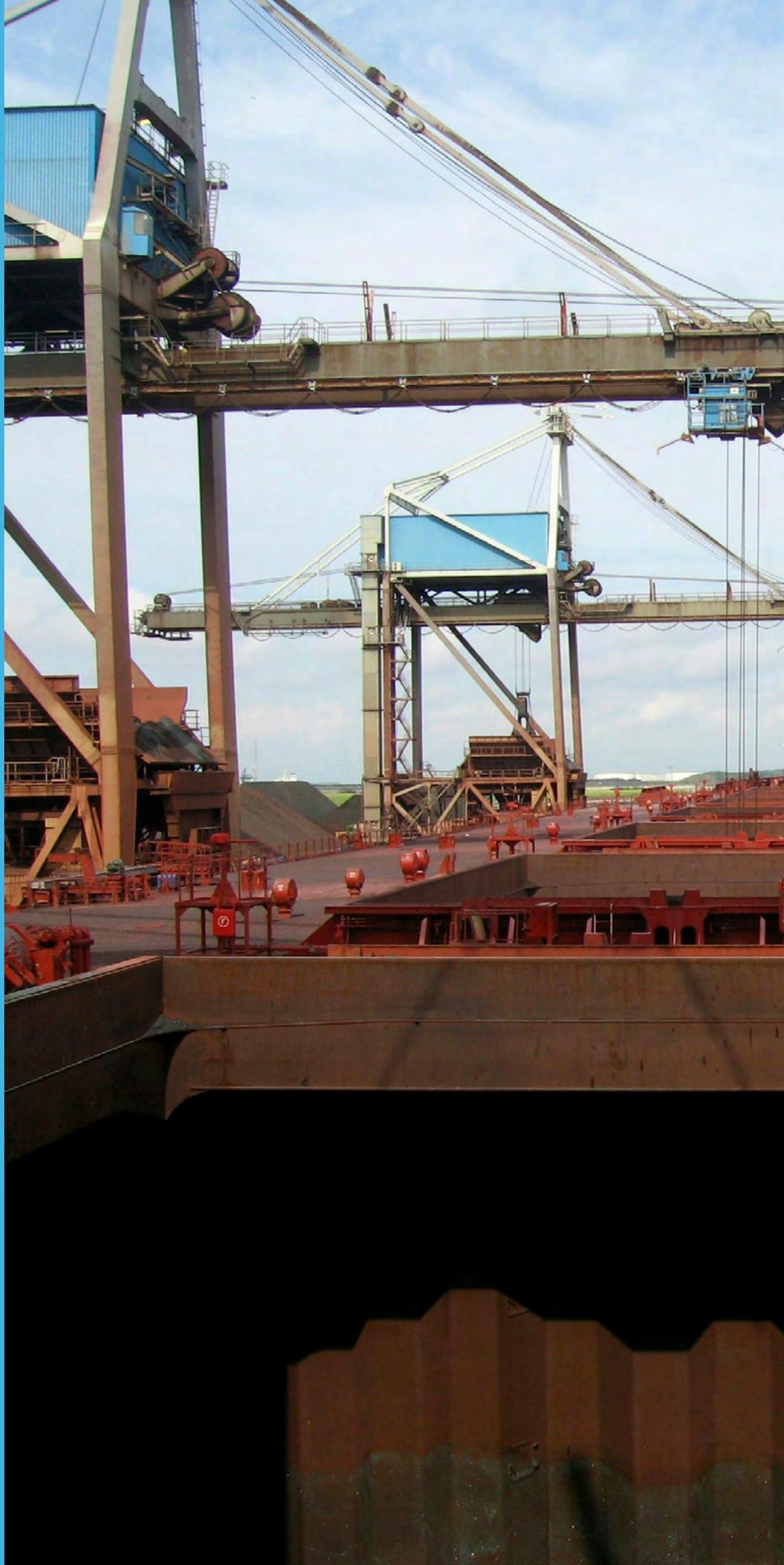
At the time of writing this article, NAFTA and grains discussions are a developing story, and several permutations of what may happen are possible. However, most of these plausible scenarios seem promising for the dry bulk market, specifically for panamax and supramax vessels, despite the aggravating circumstances of trade discussions and disputes between these two neighbouring countries.

We believe that talk and actions of anti-globalisation and anti-trade, although they can have a negative impact on trading volumes, they may well create a very inefficient world where, just like US grains exports to Mexico, raw materials and commodities will have to be shipped around the globe as established, efficient trading patterns are disturbed, and buyers and sellers have to go to greater lengths to trade. Greater lengths and inefficiency are typically good news from a shipowner's perspective seeking to maximise freight revenue.

There may be after all a silver lining for shipping, or at least certain segments of shipping, in a world that calls for higher barriers to trade – and an environment that hopefully will not evolve to outright trading wars which of course would be detrimental for trade, and shipping.

Basil M Karatzas is the Founder and CEO of Karatzas Marine Advisors & Co, a New York-based shipping finance advisory and ship brokerage firm working primarily with financial institutions active in the maritime industry. For more information, visit: www.karatzas.com or call +1 212 380 3700

The bulk sector has been hoping that improvement will continue this year and that the green shoots of recovery do not wither





POWER PLAY

As the industry continues to battle through the economic recession, last year saw record daily lows for the cost of transporting cargoes such as coal by sea

Operators in the bulk cargo saw rates continue to fall short of the cost of operating vessels in the depressed market. Shipping's fatal flaw of ordering more ships and thus causing major over-capacity in the market as a result continue.

With indications late last year of the dry bulk index on the rise, the bulk sector has been hoping that improvement will continue this year and that the green shoots of recovery do not wither.

Analysts have, however, raised concerns that changing political conditions might lead to moves towards trade protection, which would adversely affect shipping as an international business and restrict growth and that this would offset the improvement in commodity price levels. For 2017 as a whole, BIMCO expects only minor demand growth for seaborne coal, BIMCO senior analyst Peter Sand said recently.

Commenting on the market position last year, Pankaj Khanna, Chief Executive Officer of Pioneer Marine, said: "2016 will be remembered as the worst year for dry bulk owners in almost 40 years. No one in the industry had foreseen the extent or the depth of the downturn we have experienced since the second quarter of 2014. The prior period of 2011-13, which was thought of as the recession, now seems a good market in comparison.

"What is interesting, though, is that the market bottomed in February this year and has since been steadily improving because of fundamental improvement in demand and supply dynamics. Demand, in particular, has been resilient and has surprised on the upside.

"The biggest surprise was the rise in Chinese coal imports, which had been on a decline for the last two to three years. The Chinese government's decision to shutter 10% of domestic steam coal production that was inefficient was a key driver of the increase in imports."

As Pioneer pointed out in its annual statement, the Chinese, in particular, have been pumping money into infrastructure projects and that is having an effect on the steel consumption side.

On the coal front as well, Chinese hydro-electric power generation has stabilised and there are still new coal-fired power plants coming on stream. That is not only true in China but also for example in India and Vietnam.

From January to December 2016 China's coal import volumes were "higher than expected, but as Indonesian exporters grabbed the lion's share of the demand growth, the dry bulk sector could not reap the full benefit of this upside," BIMCO said in its latest analysis.

CHINA'S COAL IMPORT VOLUMES IN 2016 WERE HIGHER THAN EXPECTED



"This marks a significant change from 2013, when China offered many tonne-miles to the market by importing coal on long haul routes such as the US. More recently, world coal imports decreased, bringing tonne-mile demand down by 0.6% in 2016. Despite this, there was a slim demand side improvement for the total dry bulk market, due to grains and other minor bulks.

"Legislative actions by Chinese authorities were the swing factor behind higher coal imports in 2016. Their enforcement of the 276 working days per year policy in mid-April had an immediate effect. This policy was later suspended to secure domestic coal supply for the winter season, causing prices to decline.

"Freight rates have improved gradually over the year for nearly all segments since the all-time-low we saw back in February 2016. Capesizes were the exception, experiencing a more volatile year as freight rates started to respond to increased demand – as the supply growth rate was no longer sky-high," BIMCO said.

The rise and fall of capesize rates showed their dependency on Brazilian iron ore cargoes. Rates on 25 November 2016 stood at USD 15,000 per day – only to sink to USD 6,500 per day three weeks later."

As BIMCO expected, Q4-2016 delivered "the highest level of demand

for dry bulk ships ever". China's five-year plan for transport connectivity should boost the planned investment into physical infrastructure and improves the forecast for dry bulk imports, BIMCO believes. In support of the One-Belt, One-Road initiative, US\$259bn is to be spent on highway and waterway projects in 2017.

During the Chinese winter heating period, Chinese coal mines benefit from an extension to the official national limit on the number of working days they can operate (from 276 to 330 days). This is to allow them to increase domestic production and thereby "control" the coal price during peak demand seasons.

Statements by BIMCO have proved less bullish on prospects for the whole of this year. As the trade association pointed out the Baltic Dry Index (BDI) had its seasonal weakness around the Chinese New Year in early February, but then stronger-than-expected demand came from across the board and lifted freight rates. This brought earnings into profitable levels for a couple of days, as the BDI passed 1,282 on 27 March 2017.

However, BIMCO's "Road to Recovery" analysis continues to mention 2018 and 2019. "BIMCO sees the current developments as a 'false dawn' and reiterate expectations for 2017 as being a loss-making year for the industry as such. As expected we had the seasonal decline in Q1-2017, but a softer landing

was provided for as China's combined imports of iron ore, coal and soybeans went up by 36.5 million tonnes (19%)."

Thermal coal imports into China are also bolstering demand, BIMCO says. Despite the suspension of the maximum-of-276-working-days-per-year policy, domestic production could not keep up with demand during the winter season.

Short coal trips into China from Australia and Indonesia make the Pacific market busy. Even though the winter is over, the suspension of the 276-working-days limitation remains in place."

January had more dry bulk capacity demolished than February and March combined. As the BDI moved higher, demolition activity weakened, BIMCO said. "Higher demolition prices that often follow in the wake of higher freight rates do not sufficiently tempt shipowners to sell for demolition. They either keep trading the ships themselves or sell them off in the second-hand market as asset values have climbed too.

"BIMCO's Road to Recovery encourages shipowners to make fleet expansions via the second-hand market — and that we have certainly got. But it also builds on 0% total fleet growth, something which can only come around via more demolition. A 'false dawn' means that fundamental market balance improvements are happening much slower, if at all as the supply side is still growing almost as much as the poor demand growth rate."

BIMCO estimated in April that in nominal DWT terms, the total dry bulk fleet has already grown by 1.5% or 11.7 million DWT in the first quarter of 2017. As the BDI moves higher, demolition activity gets weaker, and the BDI has did move higher during February and March. The subsequent slowdown in demolition activity meant that just 4 million DWT has been removed from the fleet so far in 2017. In comparison, 14 million DWT was demolished during Q1-2016.

"It seems clear that the supply side is not assisting the Road to Recovery, which projects an annual fleet growth rate of 0%. BIMCO estimates that the supply side will grow by 2.3% for the full year, as newbuild deliveries will slow down and demolition is expected to pick

up. Should such a flood of new orders come around, it will kill the ongoing recovery of freight market earnings. A lot of shipyards have a low order cover, and idle capacity to build. Add tempting leasing deals or other fully financed offers to that, and you may see orders coming in large numbers."

Making use of shipyard capacity to produce more new ships remains the most potent threat to the sustainability of the shipping market, BIMCO has frequently warned. For the coming months, April to June, BIMCO expects the demand in the freight market to go higher. Iron ore and soybeans will grow the most, while coarse grains are set to be in lower demand — driven down by low Brazilian exports. For the supply side of the market, BIMCO expects some steam to come off.

China has, however, announced a ban on imports of North Korean coal until the end of 2017. China imported 22 million tonnes of anthracite coal from North Korea in 2016 and will need to source this from elsewhere if the ban is fully enforced. If the 22 million tonnes are sourced from seaborne suppliers, it will benefit the demand in the dry bulk shipping industry significantly, BIMCO says.

Meanwhile, Drewry's outlook for dry bulk shipping remains positive given the shrinking supply-demand gap, according to the latest edition of the *Dry Bulk Forecaster*, published by global shipping consultancy Drewry.

With high demolition activity and low deliveries, the fleet is expected to grow at a slow annual rate of 1% over the next five years, while tonne mile demand will grow at a faster pace of around 3% per annum. As supply and demand becomes more balanced over the forecast years, charter rates are expected to improve gradually.

Drewry has also researched the impact of renewables on the dry bulk trade, as this has the potential to reverse charter rates. It has built two scenarios based on current trade developments. "The Chinese government's stimulus package in 2015 supported steel production last year and is likely to aid the steel industry over the next two years. The relative cheapness of imported coal over domestic coal makes room for increased coal imports,

THE IMPACT OF RENEWABLES ON THE COAL TRADE IS NOT EXPECTED TO BE SIGNIFICANT



supporting the rally in rates for the rest of the year," it says.

"However, the declining cost of producing energy from renewable sources and the general acceptance that COP21 may reduce the use of coal as a major energy source is a threat to the dry bulk shipping trade. Although the share of renewables in total energy production is quite low for most major economies, any shift away from coal could hamper the dry bulk trade over the medium term."

Drewry has identified three concerns that might impact dry bulk shipping rates in the future. "First, the National Energy Administration of China plans to increase coal consumption by only 0.7% annually over the next four years, and plans to meet its energy production targets by making coal use more efficient."

Drewry also points to plans by China to cut down on excess steel capacity by 100 million tonnes over the next five years by shutting down illegal, sub-standard, steel-making units. It believes the combined efforts of China and India to increase the share of renewables in their energy mix could bring down the dry bulk market to an era of negative growth in the short to medium term.

"India plans to increase its thermal coal power generation to 236 GW in 2022 from the current 186 GW, an increase of 4% annually," it says.

"Coal India, which meets most of the country's coal requirements, has been

increasing its output by 5.8% annually and the government has been making additional efforts to increase Coal India's output faster. To produce 236 GW thermal coal power in 2022, India will require 159 million tonnes of imported coal, meaning an annual fall of 1.8% in imports.

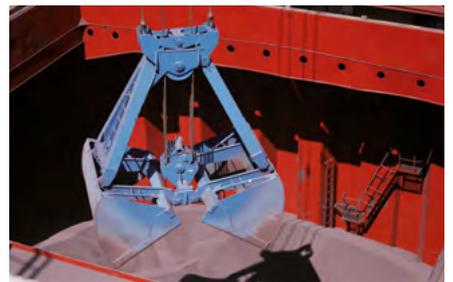
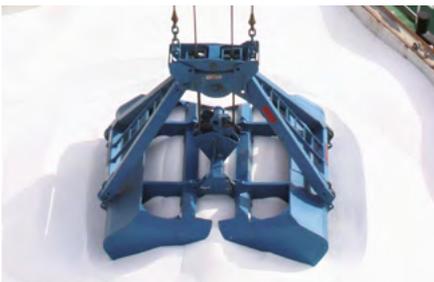
"If we club the three downside risks to demand together, there is a risk that charter rates could start declining. Drewry has built a scenario to show what will happen if India and China together reduce or slow down their coal imports, and China starts cutting down its steel production output.

"From a low base in 2016, average rates might still be substantially higher in 2017, but will start sliding from current levels and will continue to fall over the next three years, stabilising thereafter."

"The rationale for using demand to create scenarios finds its logic in the fact that the dry bulk market has become more demand-dependent than ever before," commented Rahul Sharan, Drewry's Lead Analyst for Dry Bulk Shipping.

"However, for the time being the impact of renewables on coal trade is not likely to be significant as its share of the global energy market remains very low. Hence, Drewry expects its base case to prevail which will see the dry bulk shipping market continue to improve, albeit at a moderate pace."

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UP FOR GRABS

As cranes continue to develop with an emphasis on flexibility, technology, safety and environmental friendliness, grab technology has developed in tandem



With expansion in cargo volumes, crane capacity has needed to expand with increasing use of technology which in turn has boosted grab sizes and their technological components.

Bulk handling grabs have to be used for a very wide range of commodities and materials ranging from very light to very heavy and in situations where proper handling is essential to ensure against the danger of injury to personnel working in the area, or pollution of the environment.

Considerable attention needs to be given to environmental issues. For example spillages and leaks during the period the grab is being used could have unforeseen consequences while finely ground products need to be responsibly handled to ensure that particles are not released.

In addition to this, bulk cargo carriers and representatives of the International Maritime Organization had concerns about potential damage to ships resulting from cargo handling.

Safety issues include possible exposure of workers loading and unloading solid bulk cargoes to dust or respiratory sensitizers that can cause asthma. Cargoes may be flammable, toxic or corrosive and some, for example grain, may have been fumigated. While solid bulk cargoes in the hold may not be hazardous themselves, for example fishmeal or bark, they may produce gases due to decomposition or bacterial action.

Use of the correct grab for the cargo

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being handled to reduce the amount of dust generated is essential and grabs need to be properly maintained and used in accordance with safe systems of work in order to reduce dust generation.

Developing new grab designs has also been an expensive process and recent research in the area includes a study done by Nemag in co-operation with the Delft University of Technology and TATA Steel.

The aim, among other things, was to develop special simulation software for visualising and analysing the interaction between the grab and the bulk material.

There are a number of specialist designers and producers of grabs that have specialised machinery covering the whole range of bulk products.

Verstegen, for example, has developed bulk handling grabs optimised for specific materials. Clamshell grabs can be used for most bulk materials, but for certain materials or specific operations other types of grab offer a better alternative. They can also be optimised for use with different types of crane and different manufacturers' brands. They also need to be sufficiently

versatile for use in handling commodities that come in all shapes and sizes.

As Verstegen points out: "Most orange peel grabs are used for handling iron scrap, but scrap comes in all kinds of forms and shapes. A grab suitable for shredded scrap will not automatically perform well in heavy melting scrap.

"Therefore, Verstegen has developed different types of grab models. Besides the number of shells, the shape of the shells and also the spaces between the shells can vary in order to optimise the grab for each specific application."

Grabs can be equipped, for example, with a radiation detection system that will scan material before the grab lifts the load and alert the grab operator in the event of radioactive material being detected.

In the case of handling pig iron and stones, extra heavy orange peel grabs are required and orange peel grabs can also be used for other materials, such as biomass, or handling large lumps of materials and for underwater operations.

Harnessing technology to grab systems is gaining traction with new

grab designs. For example, Spanish firm Stemm has developed a remote IT control solution and designs and manufactures a variety of grabs, grapples, clamshell grabs and tongs for multiple sectors, including the steel, marine, renewable energy, industry cranes, cement and waste processing segments.

Wherever there is Internet or 3G telephone coverage, it is possible to interact with machines in real time, Stemm explains. This is the purpose of the Grab Connect system, which allows start-up operations, remote diagnostics, technical support, check and complete control of the machine remotely and in real time, including programming and basic settings such as varying pressures, cycles and flow rates.

ORTS, meanwhile, was founded in 1972 as an engineering and consulting company, specialising in constructions of grabs and nearly all kind of bulk handling equipment. At the end of last year it delivered its biggest diesel-hydraulic orange peel grab, the DHM 12m³

The grab was for a customer in Middle East for the handling of big

rocks, limestone, gypsum and scrap. ORTS developed the radio controlled diesel-hydraulic grabs over 20 years ago and now the radio controlled diesel-hydraulic grabs DHS-B (clamshell), DHM (orange peel) and DHZ (small diesel-hydraulic grabs) have become reliable and effective work horses, according to the company.

Radio controlled diesel-hydraulic grabs are good where performance, speed and power are needed without external power supply and the diesel-hydraulic grabs are designed for use in all environments and climatic conditions, the company says.

Another product in the range is the DHS-BC 13m³ with special clamshells for very fine dry bulk cargo.

ORTS believes the company's radio controlled diesel-hydraulic grabs are a better alternative to mechanical single rope grabs with radio control or pure mechanical single rope grabs.

Grabs do not have problems with the working height, that is the distance between grab and crane hook, when the grab is closed, the company adds.

The Grab Specialist (TGS), meanwhile, also designs, develops and manufactures grabs for the dry bulk cargo, dredging and recycling industries.

The HB-1900 beetroot grab that TGS has developed is made with heavy-duty scale tubes combined with improved wheels, ensuring a durable grab that will have a very long lifespan. Besides that, the grab has an extra-large bucket width and a lightweight body designed for maximum capacity.

Much consideration has been given to maintenance when designing the grab and TGS has ensured hoses and other parts are easily accessible. The grab is built at TGS's factory in Almere in the Netherlands and is offered to customers in any size, while the company also has a big stock of grabs for the recycling, dredging, water works, salvage and many other markets.

The grabs are specially designed for charging and discharging of sand, gravel

and other bulk materials and are also available for digging or dredging purposes.

They can be used with open or closed shells with dust covers, depending on the job and the type of material to be handled and are manufactured of high-wear, resistant steels.

All bearings are heavy-duty and sealed for high performance.

The shells can be fitted with a clay ejector to push out sticky material,

like clay and the grabs can be manufactured in any weight and capacity required with or without a suspension link for connection of the grab to the crane.

Sennebogen material handlers also have different individual attachments for each bulk material including orange peel grabs, clamshells, timber grabs, magnet grabs and sorting grabs.

In practice, the grabs are capable of capacities from 400 l up to 5,000 l.



ORTS Grabs

THE BEST LINK BETWEEN SHIP AND SHORE

MADE IN GERMANY SINCE 1972



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BEST BETWEEN SHIP AND SHORE

COMPANY NEWS

ORTS GmbH Maschinenfabrik has been serving its customers worldwide for over 45 years. Clients ranging from bulk carriers and terminal operators to stevedore companies and steel works know they can rely on the performance, speed and reliability of ORTS grabs, whatever the conditions.

ORTS offers one of the industry's widest range of grabs, each especially designed and constructed. An ORTS grab not only looks different, it actually is different. The electro-hydraulic and radio-controlled diesel-hydraulic units consist of a low dead weight with the highest closing force, ensuring speed and reliability. The drive unit itself is easy for the operator to use and the escutcheons can easily be opened from both sides of the grab and used as a working platform.

ORTS has been manufacturing its radio-controlled diesel-hydraulic grabs (type DHS-B, DHM and DHZ) for more than 25 years from its factory near Lübeck in Northern Germany, longer than any other manufacturer. These flexible, high-performance workhorses are renowned for their reliability, whatever the conditions: the DHS-B (2-clamshell design) and DHM (orange-peel clamshells) are in operation on all continents, in all climate zones.



As well as their quality, reliability and performance, all ORTS grabs — whether diesel-hydraulic, electro-hydraulic or mechanical — are known for their durability and longevity. With such an extended lifetime, ORTS grabs are always a cost-effective option.

Cheaper grabs can quickly become expensive grabs when spare parts are required soon after purchase, but an ORTS grab is built to last — one of its first radio-controlled, diesel-hydraulic grabs is still working hard at 23 years old.

At the forefront of innovation — for example radio-controlled, diesel-hydraulic technology began 25 years ago in the technical office of ORTS GmbH — the company also constructs pioneering grabs for specific circumstances.



These include a self-floating oil salvage grab, which is able to take oil from the water surface after spillages, with load beams for up to 100t constructed. It has also designed a container-spreader for containers with dry bulk cargo, which can tip the container by 45° to empty it.

In addition, it has produced larger grabs with an extensive capacity: 50t (orange-peel dredger grab); 60t; 80t (2-clamshell dredger grabs) and 115t (salvage grab for shipwrecks).

Quality, reliability, performance and innovation — all add up to an ORTS grab.

ORTS Grabs 

FAMILY FIRM LOOKS TO FUTURE

COMPANY NEWS



93-year-old NEMAG is a family company, based close to the ports of Rotterdam and Antwerp, the biggest dry bulk handling ports of Europe.

NEMAG specialises in design, sales and manufacture of medium-sized to very large four rope grabs.

Key activities of NEMAG are innovation and development of new products for the dry bulk industry and the aim is to reduce handling costs per tonne dry bulk transferred.

NEMAG focuses on:

- High-performance four rope grabs like clamshell and scissors grab of up to 60 cbm volumetric capacity and up to 85 tons SWL lifting capacity
- High-performance four rope cactus grab for handling scrap and biomass of up to 54 cbm volumetric capacity
- Supplying a perfect grab with a perfect after sales support

Besides customised grab solutions, NEMAG has a fully standardised series of clamshell grabs available for Harbour Mobile Cranes like Liebherr and KONE-Gottwald cranes.



These very competitive standardised solutions with short lead times and extremely productive properties have been supplied successfully to leading bulk handling companies in more than 60 countries.

The targeted market segments of NEMAG are:

- Steel plants
- Power Stations
- OEMs of grab unloaders and harbour mobile cranes
- Commercial terminal operators

During the past six years, a close co-operation with knowledge centers like Technical University Delft have resulted in the development of new grab technology and currently NEMAG is testing new prototypes.

Another example of the co-operation with knowledge centers has led to a newly developed environmentally friendly clamshell grab that also reduces damage to ship's holds. It is for this innovation that NEMAG has been awarded with the IJB Innovation Award, issued by the *International Bulk Journal*.



So far, NEMAG is the only grab manufacturer who has been awarded in this heavy battled category.

Continuous improvement of our grabs, introduction of new products and close co-operation with leading bulk handling terminals world wide, will keep NEMAG in the front line of the market.

Please contact NEMAG for your requirements by visiting our website www.nemag.com or contact us directly at sales@nemag.com.

We are most happy to help you.

ON THE MOVE

Using conveyor systems for handling complex goods has cut operations substantially, while efficient use of mechanical loading and unloading provides for a dynamic operation

The belt itself is one of the most expensive components in a conveyor belt system. One example is REMA Tip Top's REMA M³ which helps with system monitoring and can prevent costly malfunctions.

Short downtimes, long service life, low operating costs — these are all advantages that every operator looks for in their conveyor system. However, the reality is often very different. Handling complex, conveyed goods can lead to significant material wear. Ever larger and longer conveyor routes make it harder to ensure continuity of operation. The REMA M³ system was developed to assist this process.

To help system operators increase the service life of their equipment, the electronic monitoring of individual conveyor belts and the entire belt system involves three systems. The

BTM Belt Thickness Monitoring System is used to measure layer thickness for the continuous wear measurement of the drive and running sides of the belt during operation. The measuring procedure is based on robust ultrasonic technology. Continuous monitoring allows the system to predict the expected remaining service life of the belt. Thus, the system can also provide information on any service and maintenance work that may be necessary. This makes it possible to procure a replacement before any damage occurs.

The RFID Belt Rip Detection System is used to monitor the belt in real time. Thanks to innovative RFID antenna technology, the entire width of the belt can be monitored at once. If a longitudinal slit appears in the belt, the system brings the belt to an immediate

standstill. For this purpose, the RFID Belt Rip Detection system can also be integrated within the belt guidance system. This prevents costly repair work. The belt rip detection system can be used with ST, EP and solid woven belts, for both new and existing belts.

The Steel Cord Scanning system monitors steel wires and belt connections. The system locates defective wires in the belt and provides a clear graphic display of any problematic points.

The REMA M³ system is completed by the connection to the Computerized Maintenance Management Software. This service software was developed in order to optimise the service processes offered by REMA Tip Top can be deployed immediately. The software makes it possible to initiate preventive maintenance measures at an earlier stage, thereby preventing undesirable

CONTINUOUS SYSTEM MONITORING IS THE WATCHWORD WITH THE REMA M³ SYSTEM



system downtimes and significantly lowering costs.

REMA says: "The benefits of the software are evident in particular in its worldwide 24x7 availability. Irrespective of the location, all systems, components and parameters are continuously accessible to the customer service team. Changes are updated in the system on an ongoing basis, so that all service staff have access to the same information. As a result, information gaps are minimised and the usual high service quality customers are used to is guaranteed."

Whether mobile or stationary, equipped with their own energy supply or supplied with electric power from the outside Bühler ship loaders and unloaders are sized to suit different needs and can be tailored to the local conditions.

Typically, any product is transferred to conveying systems that are

permanently installed on the pier or directly to road or rail vehicles.

The mechanical ship unloaders supplied by Bühler are equipped with high-capacity chain conveyors for achieving efficient and trouble-free materials handling.

The enclosed, sturdy conveyors of rain-proof and dust-tight design enable vessels of different sizes to be unloaded at throughput rates as high as 1400 metric tons per hour, depending on the specific class of ship. Loading is performed either through belt conveyors or chain conveyors and loading spouts.

To prevent dust emissions, the loaders can be provided with a loading head dust suppressor. Systems are possible with throughput rates up to 2400 metric tons per hour.

Two products, Bühler Portalino and Portalink, are designed for reliable and efficient unloading of grain, oilseeds

and derivatives. Depending on the specific flow characteristics of the bulk material, maximum unloading throughput rates up to 1,400 t/h can be achieved. Portalino and Portalink are characterised by their high flexibility and uptime, as well as their outstanding cost-to-benefit ratio.

The automatic sink-in mechanism of the marine leg enables the optimal position of the unloader boot in the bulk material. An automatic unloading to the maximum depth of material inside the ship's hold is given. Bühler's technology and automatic control system ensure that the Portalino and Portalink work reliably, even when material characteristics vary.

There are few high wear parts and a low number of spare parts ensure easy maintenance. The low conveyor chain speed ensures a reliable operation and a long service life.



LASE MEASURES UP

LASE has delivered 15 LaseBVC conveyor belt measuring systems to Vale's massive iron ore mining project in the S11D Complex in North Brazil. At the huge plant, the material is transported on conveyors and needs to be determined by specific measurement applications from LASE.

Mining company Vale opened this project — the world's largest ever — in the Brazilian municipality of Canaã dos Carajas (Federal State of Para) last December. After starting the commercial operation in January this year, LASE began the rollout of the Lase BVC (Bulk Volume Conveyor) and delivered 14 volume measurement systems for conveyors in the S11D Eliezer Batista Complex.

In order to measure the height of iron ore on conveyors as well as its volume, one laser scanner is mounted above each conveyor belt. The scan direction of the laser systems runs across the transfer direction of the conveyed material and generates 2D profiles. These are compared to so-called zero-profiles,

which have been stored during the initial commission of a conveyor belt. By knowing the individual difference and the belt speed, the exact volume can therefore be determined. Additionally, if the bulk density is known, the mass flow can be calculated too.

With the use of high-resolution laser scanners with a scan ratio of up to 100 scans per second, the material can be recorded even at high transportation speeds. Special algorithms within the LaseBVC software application for the adjustment and calibration ensure high measurement accuracy.

The system can be operated intuitively thanks to a user-orientated dialogue control and configuration for simple commissioning. For integration in production plants, these common interfaces are already integrated: Ethernet TCP/IP, Profibus DP, Analog 0...20 mA and Serial RS 422.

Because of its robust design the application LaseBVC allows a reliable operation, even in the most extreme environmental conditions.

A SOPHISTICATED COMBINATION

COMPANY NEWS



Liebherr Maritime Cranes is a division of the Liebherr Group that specialises in cargo handling solutions for ports as well as for the shipping and offshore industry. Liebherr Port Equipment products include ship to shore cranes, mobile harbour cranes, rubber tyre and rail mounted gantry cranes, reachstackers and straddle carriers.

Highly efficient slewing cranes for installation on quaysides, in harbours and in dockyards are available on fixed pedestals (FCC) and on rail-mounted travelling gantries (TCC).

Fixed cargo cranes (FCC) are space-saving handling solutions for vessels up to post-Panamax class. The slewing cranes installed on fixed foundation pedestals comprise both cylinder luffing as well as wire luffing slewing or double girder cranes. They provide the optimum balance between restricted space and cost effective turnover.

The product range of travelling cargo cranes (TCC) is distinguished by the design and the technology in harbour crane construction.

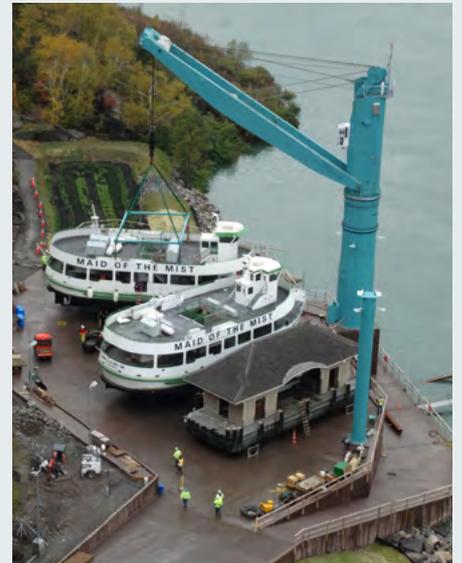


The sophisticated combination of slewing crane and customised rail-mounted portal crane sets new standards in terms of innovation, flexibility and cost effectiveness. The series of TCC cranes is suitable above all for handling containers, bulk goods and cargo in sea and inland harbours.

Liebherr Port Equipment covers an extensive range of mobile harbour cranes which includes seven sizes with load capacities of 42 t to 308 t. With more than 1,300 units delivered in 100 countries worldwide Liebherr mobile harbor cranes convince in all application areas. Their flexible range of applications comprises:

- highly efficient container handling
- bulk operations
- the handling of scrap
- general cargo
- and even heavy lifts up to 308 tons, just by an easy exchange of the lifting attachment.

Unique technical remarks as the optimised undercarriage concept, the hydrostatic transmission or the specially developed crane control make Liebherr mobile harbor cranes the most powerful handling equipment worldwide.



Each mobile harbour crane is available with numerous purpose-planned options for every operating task, size of vessel and type of freight.

Liebherr reachstackers profit from many years of development experience in the maritime sector. A variety of highly efficient innovations, a comfortable and ergonomic design as well as impressive performance distinguish the Liebherr reachstacker.

In this way, it is a versatile handling solution that can be deployed for any kind of terminal.

Moreover, Liebherr specialises in highly immersive simulation-based crane operator training.

LIEBHERR

CEMENTING THE DEAL

Improving efficiency while in port, as well as ensuring the environmental impact of moving bulk cargoes is kept to a minimum, is key to effective operations in shifting cement

The need to deploy equipment in the most efficient way has led to the development of sophisticated mobile systems that can adapt to changing demands in ports. There also needs to be consideration of how to minimise the impact of dust movement, in the case of cement and other loose bulk cargoes.

Combating dust, for example, is a key aspect of Samson's Eco Hopper, which is used in ports to transport bulk materials through the port while minimising the chances of dust migration.

The Eco Hopper is fitted with filter units and with a Flex-Flap, which ensures that air in the hopper is not displaced back into the atmosphere with the potential to carry dust with it. A fabricated steel section with vertical flexible rubber flaps configuration uses a simple but effective principle to reduce air contamination acting as a one-way valve to trap air and dust within the hopper.

Bulk materials are discharged into the Eco Hopper directly from vessel-mounted or shore-based grabs. At the point of discharge, the grab is protected from cross winds in transfer by an inlet shroud.

The Eco Hoppers can be used with

virtually any dry bulk material and can provide an effective peak output rate from 600 tph through a telescopic loading chute up to 1500 tph to an auxiliary conveyor.

The Eco Hopper is fabricated in a robust steel structure to resist structural overload and minimise the effects of grab impact. Components are designed to prolong the life of the equipment and minimise maintenance costs. The equipment is configured to suit the particular operation and material.

Twin rail-mounted Samson Eco Hoppers have recently been installed at Holcim Philippines. These 6x6m hoppers are designed to handle cement clinker, limestone, natural gypsum and blast furnace slag from 10m³ capacity grabs at a peak unloading rate of 600m³ per hour.

Other products include a range of mobile shiploading systems available with special features designed to speed vessel loading, handling the complete range of dry bulk cargoes at rates up to 2,000 tons per hour.

Since no special civil works are required, Samson says its mobile shiploader may operate on any suitable

existing quay area or river berth using existing infrastructure, thus drastically reducing the capital cost of a new export facility with the further benefit of fast track availability.

"The flexibility and fast track availability offered by mobile equipment allows the port operator to react to changing market conditions, taking advantage of often short-term contracts. In a rapidly changing export commodity market, the mobile option may be confidently selected in the knowledge that the equipment may be easily relocated or even resold if a contract is terminated," it says.

The strong second-hand market for these machines "guarantees excellent residual values thus minimising the investment risk associated with any project, however volatile the market conditions may be".

Beumer Group, meanwhile, has developed a range of conveying, loading and filling systems that are offered in different versions for various tasks.

The company says the systems provide a need for less maintenance, an increase in bucket elevator capacity and achieve more precise filling results.



SAMSON'S ECO HOPPERS CAN BE USED WITH VIRTUALLY ANY DRY BULK MATERIAL.

The conveying system has to meet high requirements to ensure safe and economic clinker transport in cement plants. The cement clinker leaves the clinker cooler of the kiln line at very high temperatures. To ensure a trouble-free transport of the clinker, the conveying system must withstand these high temperatures. This is where Beumer apron conveyors are used.

Belt technology, used in bucket elevators, is reinforced with steel wires and can be designed in different widths. In the material feed area, special deflector plates protect the belt against hot coating that collapses when the kiln is not in continuous use.

Beumer bucket elevators are already successfully used by many international cement manufacturers, including Dyckerhoff, Yamama Cement, Heidelberg Cement and LafargeHolcim, the company says.

For filling cement into bags, Beumer has developed the Fillpac. It uses rotating filling spouts to fill any type of cement into different bag types and can be individually integrated into already existing packaging lines and adapted to specific parameters. Specific weighing electronics are used to ensure weight accuracy of the bags.

There are practically no rejects caused by too high or too low filling weights, the company says. The weighing unit

communicates permanently with the filler neck via specific software. The automatic bag weight control determines the exact filling weight while filling. This way the machine always achieves accurate degrees of filling.

The Beumer Autopac loads cement bags directly from the filling machine on to the truck bed without manual intervention. Bags can be palletised automatically in stacked rows or patterns — without using pallets. Depending on the performance class, the system stacks between 2,400 and 3,000 50 kilogram bags per hour. The loading height, including the height of the truck bed, can be up to 3.5 metres.

The machine can load bags in double patterns of five or ten bags. In order to attain a high degree of stability for the whole load on the truck and in order to optimally utilise the truck bed, two mirror-inverted layers are always stacked next to one another. The bags are flattened by the loading process using two stacked belt conveyors, which releases the air from the bags.

After being positioned, the bags are also pressed by the loading head, which makes the stack more compact and more stable. The bag feeding lines can be adjusted to the installation conditions.

Corresponding technical solutions are available for variable conveyor lines. Unlike on the systems where bags are

suctioned and lifted, the bags are not deformed by the Beumer Autopac. In contrast with loading and palletising systems from other manufacturers, the Autopac is equipped exclusively with electrical drive units in its standard design. This means significantly less maintenance costs for the user. On vacuum drive units and hydraulic drive units, leaks that pollute the load and the system are inevitable.

Additionally, the energy-intensive vacuum pumps and hydraulic drive units require additional cooling units, a fact that clearly increases the purchase and operating costs, as well as the energy consumption.

The Autopac uses just 0.15 kilowatts per hour at full capacity. The drive units and machine parts are clearly arranged and easily accessible. This facilitates maintenance considerably.

Beumer is providing four high-capacity belt bucket elevators for the LafargeHolcim cement plant in Kujawy, Poland. These systems are part of a project to improve the production and the quality of cement blends.

Beumer's high-capacity belt bucket elevators, with centre distances of up to 50m, enable a conveying capacity of 350 t/h, which is ensured by the special belt design of the Beumer steel wire belts. The systems will go into operation at the end of this year.

BOOSTING BIOMASS

Biomass products are an increasingly important part of industry operations, but while ports are clearly used to dealing with conventional products, handling biomass materials can present challenges

As well as other products, good handling and storage of biomass products is essential and this can prove challenging because the very nature of the products differs considerably. For example, the effect the shape of the products has on how they are stored or filtered from one place to another may be considerable.

As is the case with other bulk products, such as iron fines, which have been at the centre of cargo liquefaction incidents, considerable care must be taken that biomass products do not become exposed to the weather or high winds, while consideration needs to be given to the fact that biomass products could be fermentable.

Temperature control is also a major issue to ensure, among other potential problems, that moisture does not build up in the storage space or be absorbed back into stored, pelletised products.

Handling these kinds of situations has obviously driven the development not just of specialised storage facilities, but also specialised technology for eliminating the problems associated with handling biomass products.

For example, Valmet has introduced a new online analyser for wood chip and bark moisture measurement. The Valmet Chip 'n' Bark Moisture Analyzer (Valmet CBA) offers pulp mills a new tool to advance productivity and efficiency. Continuously measuring wood chip moisture provides the means to accurately control cooking liquor to chip mass ratio for improved digester operation. When applied to monitor biomass moisture, better boiler efficiency is enabled by the continuous indication of heating value to optimise fuel feeding control and supplementary fuel use.

Valmet CBA replaces time-consuming, oven dry laboratory measurements by utilising microwave technology to continuously measure chip, bark, forest residue biomass or recycled wood moisture.

A sample flow is taken from the conveyer chute, pushed through the unobstructed measurement chamber and then returned to the chute. Disturbances that affect conveyor mounted instruments have been eliminated with the innovative design and measurement concept.

"As chip and biomass moisture have such a great effect on productivity and efficiency, the continuous measurement provided by Valmet CBA can be used in real time control and provide a rapid return on investment. Together with Valmet's other successful analysers and controls, it is another tool for the complete optimisation of the pulp mill and power plant", says Antti Kokkonen, Product Manager, Automation Business Line, Valmet.

The robust construction of Valmet CBA, equipped with an integral screw feed sampling unit, is designed for trouble-free and straightforward installation. A combination of microwave resonance, Q-value and sample temperature is used to accurately measure moisture content from 0 to 70% and optional heated screw tubes are available where the possibility of ice or frozen material exists. With industrial internet functionality, measurement data, alarms and diagnostics are all remotely accessible.

Not requiring any special certification or safety procedures, Valmet CBA is applicable to all wood species and forest biomass moisture measurements.

LARGE-SCALE WOOD PELLET FACILITIES AT THE PORT OF TYNE



PORTS SEE BOOST TO BIOMASS FACILITIES

Three major silos have been erected as the centrepiece of large-scale wood pellet facilities at the Port of Tyne, South Shields, UK, a significant milestone in what is an important northern project.

The structures, each 118ft tall and 147ft in diameter, have been built by engineering specialist Spencer Group as part of a major, multi-million pound contract awarded by Lynemouth Power. In due course, the silos will be topped off with "penthouse" structures housing the drive mechanism for the wood pellet conveyor system, taking the full height of the buildings to 147ft.

The facilities, at Tyne Dock in South Shields, Tyne and Wear, will handle up to 1.8m tonnes of wood pellets annually, to support the full conversion of Lynemouth Power Station on the Northumberland coast from coal-burning to biomass.

The project will enable wood pellets to be conveyed mechanically to one of three newly-built silos, each capable of storing 25,000 tonnes of material. The pellets will then be discharged from the silos via two conveying streams to a rail-loading facility to take the material to Lynemouth Power Station by train.

Spencer, has utilised industry-leading particle controls in the material handling system, as well as sophisticated measures to monitor and manage the condition of the wood pellets.

To complete the project, Spencer will

utilise its specialist skills in the rail sector to carry out modifications to the existing rail infrastructure to provide dedicated rail lines to serve Lynemouth Power Station and connect the new facilities to the 11,000-volts mains supply.

The first materials handling gantries have also been installed on site as part of the conveyor system taking the wood pellets from the quayside to the silos and, finally, the rail-loading facility. The gantry structures have been fabricated off site and are being pre-assembled on the port estate, prior to installation.

The project is now well on the way to completion, with the facilities due to be fully operational later this year.

It continues a strong collaborative relationship between Spencer and the Port of Tyne that dates back to 2010, when Spencer worked with the port to design and build a rail-loading facility for wood pellets, which was then the first of its kind in the world.

Andrew Moffat, Chief Executive Officer of Port of Tyne, says: "We have been innovating processes, procedures and systems for the handling, storage and transportation of wood pellets since 2009, when we built the first facility, and even now we continue to research and develop improvements for effective handling of this material.

"As well as working with Spencer Group on site, we have been employing new technology in the design of specialist hoppers required for the new handling and conveying systems. These are currently under construction in Spain. The

whole project at Tyne is a very significant addition to the region's infrastructure."

The Port of Rotterdam, Netherlands, has also been making considerable investments in the biomass sector. Its central location in Europe makes Rotterdam attractive as a biomass port and its good intermodal network makes transporting products such as wood pellets to key markets like Germany, Belgium and Austria easier.

The Maasvlakte in Rotterdam has two coal power plants capable of co-firing wood chips and other biomass. The demand for biomass to generate steam and heat is expected to increase and the port of Rotterdam and the Dutch government are promoting the use of biomass in the chemical and energy industries. Over the long term, wood chips are therefore expected to increasingly serve as a raw material for the bio-based industry in the port of Rotterdam, the port authority says.

The storage capacity in the Port of Rotterdam area makes it possible to use Rotterdam as the distribution or storage location for the Northwest European market. Energy companies, pellet suppliers and traders in biomass will find all the necessary facilities here and furthermore benefit from attractive economies of scale and optimal cost efficiency.

By clustering the supply of biomass into larger ships (for example, Panamax) and subsequently transporting it in smaller volumes to its final destination, transportation costs are reduced.

TAKING COVER

The dangers of liquefaction resulting from the insufficient provision of covered storage facilities has been an issue that has attracted enormous attention from the shipping industry, in particular where the carriage of bulk cargoes is concerned

In countries where inclement weather conditions result in bulk cargoes that have been stored with insufficient protection, accidents involving cargo liquefaction have occurred, often with tragic consequences.

In the case of the *Bulk Jupiter* in 2015, for example, in which 18 crew lost their lives, the casualty investigation by the Bahamas found: "In total 186.55 hours of loading was lost due to rainfall – the equivalent of seven days of loading over the period. The infrastructure available to adequately store and transport bauxite in Kuantan increased the exposure of the bauxite to the elements.

"Despite the crew's diligent response to the rain by continually opening and closing the hatch covers to reduce the ingress of water, the cargo remained exposed whilst on the quay side, in stock piles and in the trucks."

Adequate facilities to store bulk cargoes while in port or in transit are essential and many ports have made sizeable investments in covered storage over the years, not only to protect the cargoes, but also to attract new revenue streams.

HES International announced this month that its 100% subsidiary EBS will further expand its covered storage facilities in the Port of Rotterdam. At its LaurensHAVEN terminal, EBS will construct 126,000 cbm of storage sheds.

Furthermore, EBS plans to construct an additional 40,000 cbm storage shed at its Europoort terminal. These new



multi-purpose warehouses are in addition to the existing 525,000 cbm and will bring the total covered storage capacity to 691,000 cbm. Recently, EBS has taken a 60,000 cbm storage shed into operation. Supported by a long term contract, it is suitable for various dry bulk products.

Jan de Wit, Managing Director of European Bulk Services, explains: "By investing into state of the art land-based facilities, we can reduce the cost for floating storage in barges while improving the quality and safety of operations. The design will be carried out with a strong focus on flexibility for our customers and our stringent safety and environmental standards."

Jan Vogel, CEO of HES International says: "Next to our ambitions to grow

our liquid storage business, it is HES International's strategy to become a European market leader in the handling of bulk products that require covered storage, such as agricultural products, biomass and (specialty) minerals."

The shed at LaurensHAVEN will be equipped with a new crane and is suitable for minerals, biomass and agricultural products. EBS operates two terminals located at LaurensHAVEN and Europoort, with a total covered storage capacity of 525,000 cbm and open storage of 210,000 m². It operates several land-based cranes for discharging vessels at LaurensHAVEN and operates flexible floating cranes at both terminals and elsewhere in the Rotterdam port area.

LEADING THE WAY IN EUROPE

More than 40 million tons of bulk cargo is handled in Hamburg every year, including goods such as building materials and fertiliser, suction cargo such as grain and animal feed, grab cargo such as iron ore and coal, and liquid goods such as mineral oil and chemicals. Covered handling facilities and storage areas guarantee safe handling for moisture-sensitive goods.

Hamburg holds a leading position in Europe for suction cargo with silo capacity of a million tons. The ships can berth directly beside the large silos where high performance units carry out loading and discharging.

There are also many mineral oil companies in Hamburg and other processing companies for liquid raw materials, as well as highly specialised tank farms equipped to handle and safely store liquid substances such as mineral oil, palm oil, alcohol, latex and chemicals.

The Port of Antwerp, meanwhile, has a capacity of 7.2 million m³ liquid storage space and 6.1 million m² of covered dry storage space which exceeds that of surrounding ports.



COLD WAREHOUSES IN ANTWERP BENEFIT PERISHABLE GOODS

Tailored storage solutions include standard and dry warehouses, extensive facilities for dangerous goods and Europe's largest array of tanks and silos. Due to a massive wave of investments, tank storage capacity has been doubled recently.

Cold warehouses in Antwerp are located in the port itself, which enables an uninterrupted cold chain and benefits the quality of perishable cargo. Perishable cargo benefits from a large offer of temperature-controlled warehousing, totalling up to two million m³. Antwerp also has automated warehouses for palletised perishable cargo.

Belgian New Fruit Wharf handles 2.1 million tonnes of fruit, containers and general cargo. It is a member of the group SEA-invest. SEA-invest Fruit and Food has a total temperature controlled storage capacity of 620,000 m² and 176,000 pallets, as well as a storage facility for deep-frozen products (-20°C) of 132,000 m³.

Locations in Belgium, Germany, the Netherlands, Ivory Coast and South Africa handle over 5.5 million tons of conventional and container cargo annually. SEA-invest services include packaging and custom formalities and "track and trace" of goods individually, from harvest to final delivery.

UK SEES EXPANSION IN COVERED STORAGE

Damac is expanding its East Yorkshire terminal with the erection of a new storage silo.

Based in Goole, the company is a nationwide distributor of bulk materials and powders used in the construction industry such as cement. With six operating centres across the UK, it is expanding its facilities this year and has started development on the other side of Goole dock.

The expansion will allow quicker loading, thereby increasing operational efficiency while also raising capacity and flexibility for the terminal.

As part of this expansion, Damac had been looking for a partner to design a new approach for the loading process. It commissioned Slipform Engineering

to build a 4500m³ concrete storage silo, which would enable trucks to load directly underneath, increasing operational efficiencies.

Spencer Group undertook the design, site management, piling, foundations, staircase, hand railing and roofing works.

Working with Slipform Engineering meant the silo was built within eight days. This speed was enabled by the rapid deployment of the system and is significantly faster than traditional slipforming techniques. The system works by operating hydraulic jacks at a shorter, more frequent stroke rate to deliver a smoother, higher-quality finish.

ABP's Port of King's Lynn, meanwhile, has successfully completed its first import of high-quality soya bean meal

on behalf of Glencore Agriculture UK. This shipment heralds an additional flow of soya animal feed for the port, taking advantage of the strategic location of King's Lynn, which is close to one of the company's main markets.

The Port of King's Lynn is undergoing a range of investments by ABP, including the construction of new bulk warehousing, larger capacity cranes and associated equipment.

James Maw, Managing Director of Glencore Agriculture UK, says: "King's Lynn gives us an extremely important new entry point to one of the key livestock producing areas of the UK.

"It further complements our nationwide commitment to supplying the animal feed industry with high-quality, cost-effective feed ingredients."



PACKING A PUNCH

The drive towards more eco-friendly means of transport is likely to also drive the growth of the flexible intermediate bulk carrier market, according to some analysts

Predictions suggest that the FIBC market could have a compound annual growth rate of more than 6% by 2021. Demand for IBC container from a number of different market segments including edible products and chemical have increased the demand for bulk packaging which is flexible in nature. Analysts also suggest that the expansion in the use of shale gas is encouraging players in the chemicals and fertiliser segments to boost production, thus creating greater demand for FIBCs.

FIBCs are made from woven polypropylene or polypropylene fabric of different weights and strength. FIBCs are available in a wide variety and are suitable for numerous applications in the chemical, pharmaceutical, and food industries.

Another possible demand driver is the factor of reducing the weight of packaging and transporting products, as well as ensuring that this is packed in the most eco-friendly way possible. Development of eco-friendly plastics is becoming ever more important given the high public profile of the effect plastic pollutants can have on, for example, marine ecosystems.

Companies such as Braskem and the Dow Chemical Company have already

invested in technologies to produce bio-based polymers through biomass. This is expected to increase the adoption of bio-based products among FIBC manufacturers and, in turn, boost the demand for FIBC bags.

Braskem was at Interpack in Dusseldorf earlier this year to present new applications for its I'm greenT Green Plastic packaging, including coffee packaging for The Netherlands' Peeze as well as packaging for the personal care segment, for Germany's Speick and Italy's L'Erbolario. It also presented Braskem Amppleo, a polypropylene resin developed for the production of high performance foams, and display research work and advances made in packaging technology.

I'm greenT Green Polyethylene is produced from sugar cane, a renewable source, and contributes to the reduction of greenhouse gas emissions in the atmosphere, as it captures carbonic gas during its productive process.

Flexible intermediate bulk container players are increasingly investing in research and development into products that are high-performing in terms of quality, durability, and energy absorption.

Furthermore, a recent report by

market analysts Report 'n Report states that with an increase in the cost of raw materials, FIBC vendors have to increase the prices of their end products or reduce their profit margins, which will have an adverse effect on FIBC market growth. To calculate the FIBC market size, the report considers the volume of FIBC used by the industry segments of Food, Pharmaceuticals, Chemical and Other industries (including construction, fertilisers, and mining and minerals). The report covers the current scenario and the growth prospects of the global FIBC market for 2015-2019.

Another exhibitor at Interpack was Beumer Group. The new Beumer Fillpac filling machine fills bulk material from the building materials industry and other industrial pulverised goods into bags. It can fill very fine to very coarse materials into different bag formats and types, such as valve bottom bags and flat valve bags.

The company has now complemented the rotary filling machine with a bag placer and a ream magazine. This means that performance and efficiency can be further increased. Due to its modular design, the Beumer Fillpac can be easily integrated and adjusted with existing packaging lines.

The form fill seal system Beumer Fillpac FFS is used in the chemical and petrochemical industries. It forms bags from a prefabricated tubular PE film. Both systems are equipped with a specialised weighing unit that ensures the correct quantity of material.

The bags are then stacked on pallets using its Paletpac high-capacity palletiser. It is incorporated into high-performance packaging lines to process even sensitive and valuable products, as well as products with special flow characteristics, in an efficient manner. Depending on the product requirements, it can be equipped with a clamp-type turning device or a twin-belt turning device.

Flexicon, meanwhile, has produced a bulk bag discharging system designed for use in explosive environments. This BFC series model features a pneumatically-powered hoist and trolley to raise and position the bag inside

the discharger frame, eliminating the risk of potential sparks from electrical equipment or fork trucks that might be otherwise used for this function.

A spout-lock clamp ring forms a high-integrity, dust-tight seal between the clean side of the bag spout and the clean side of the equipment, while the Tele-Tube telescoping tube maintains constant downward tension on the bag as it empties and elongates, promoting complete discharge of free- and non-free-flowing material from the bag.

The all-stainless-steel construction is designed to withstand corrosive environments and allows rapid, thorough wash down with caustic cleaning solutions. The unit is available with a hopper and pneumatically-driven flexible screw conveyor, a tubular cable conveyor or a rotary airlock valve to feed material into a pneumatic conveyor line.

Flexicon also manufactures BFF-Series dischargers equipped with top-mounted receiving cups and a removable bag-lifting frame for forklift loading of bulk bags, as well as BFH half-frame models that rely on a forklift or overhead hoist to suspend the bag during discharge.

Flexicon bulk bag fillers range from basic stand-alone units to sophisticated systems to match the budget and capacity requirements of each customer's application. Each of these configurations delivers optimum performance across specific

capacity ranges with maximum cost-effectiveness.

Flexicon's latest bulk bag filling innovation is the patent-pending Swing-Down filler. Designed for medium- to high-capacity applications, this revolutionary design brings the fill head to the operator at floor level for faster, safer and easier bag connections.

Rear-Post fillers are intended for medium- to high-capacity applications requiring pass-through conveyors and/or powered fill head height adjustment. Meanwhile, Flexicon's Twin-Centerpost fillers satisfy low- to medium-capacity filling requirements where frequent wash-down or compliance with USDA Dairy standards is required.

Lighter-duty versions of Twin-Centerpost fillers, Basic Fillers reduce cost, yet offer an inflatable bag spout seal and feed chute dust vent as standard, and a limited list of performance options.

For fast, accurate, and stable weighing of small to large volumes of free- and non-free-flowing bulk materials, Flexicon bulk bag fillers are offered in two configurations: with load cells that measure weight gain of the bulk bag filler; and with weigh hoppers suspended above the bag filler allowing simultaneous recharging of the hopper and replacement of the bulk bag to achieve high filling rates.



FLEXICON'S TWIN-CENTERPOST FILLER

SAFETY STAYS AT THE FORE

Bulk carrier safety is back on the agenda — if it ever left it — following the news of the *Stellar Daisy* sinking earlier this year, with the loss of 22 lives

IMO SECRETARY-GENERAL KITACK LIM



Following the *Stellar Daisy* incident earlier this year, emphasis will now be on establishing — in as much as this is possible as the vessel sank in deep water — what caused the tragedy.

The 1993-built, 266,000 dwt VLOC foundered on 31 March with the loss of 22 members of her 24 man crew while on a voyage to China with a cargo of iron ore for commodities giant Vale. The vessel's flag state, the Marshall Islands, is tasked with carrying out the accident investigation.

Initial news reports suggested that liquefaction, another danger for bulkers, might have been a cause of the accident, but attention is now centred on whether the very large ore carrier, which had started life as a VLCC, was actually fit for purpose.

Tankers are longitudinally framed, as opposed to laterally in the case of bulk carriers, and the conversion would have required considerable welding of new steel as well as cutting holes in the weather deck to make place for cargo hatches. The iron ore would have been stored in the vessel's centre tanks, while the wing tanks would remain empty in order to provide stability.

Initial reports suggest that water ingress immediately prior to the sinking, resulting in a crew muster, point to a possible structural failure of the wing tanks. The Marshall Islands will be looking to complete its report as soon as possible, but recovering information from the ship is likely to prove difficult.

However, it is clear that learning lessons from the accident, and its ramifications for VLCC conversions to carry bulk commodities, are vital to preventing further tragedies in the future.

Commenting on the accident, IMO Secretary-General Kitack Lim says: "It is expected that there will be a full investigation into this accident and that the results and findings will be brought to IMO so that we can do whatever may be necessary to reduce the chances of such an incident happening again.

"Thankfully, these occurrences are rare, but when they do happen, they serve to remind everyone that the seafarers on whom we all depend do a difficult and sometimes dangerous job, and that those of us responsible for making the industry safer can never stop striving for improvements."

CARGO LIQUEFACTION

Another major concern for the bulk carrier segment has been the spate of accidents involving cargo liquefaction including the *Bulk Jupiter* in 2015, which sank while carrying 46,400 tonnes of bauxite en route to China. Only one member of the 19-strong crew survived.

Among other findings, the report by the Bahamas Maritime Authority at the time said: "The absence of an independent inspection resulted in the cargo being loaded without its physical properties and moisture content being verified against the parameters of the IMSBC Code schedule or the cargo declaration form."

In April this year, a joint project between leading international classification society Bureau Veritas and TMC Marine, with London P&I Club produced new guidance in the form of a booklet to support vessels planning to carry cargoes that may liquefy.

As the guidance points out, cargoes that include ore fines and concentrates, notably from south-east Asian load ports may be prone to liquefaction under certain conditions.

Such liquefaction can lead to a "free surface effect" in cargo holds, causing a cargo shift and a subsequent rapid loss of vessel stability, which can lead to foundering and, all too often, high loss of life. In such circumstances, between 2010 and 2013, several bulk carriers were lost in Asian waters.

The purpose of the new booklet is to provide general guidance and practical advice to masters, ship owners, shippers and charterers on the loading and the carriage of bulk cargoes which may liquefy, the risks associated with liquefaction and the precautions that can be taken to minimise these risks.

It is not intended to replace IMO regulations and guidance notes or documentation forming part of a vessel's safety management system; the guidance is a practical tool for all involved in the trade of such cargoes – including iron ore fines, copper, manganese, nickel and zinc concentrates.



MAJOR CONCERN FOR THE BULK CARRIER SEGMENT HAS BEEN THE SPATE OF ACCIDENTS INVOLVING CARGO LIQUEFACTION

Amélie Labbé, Manager Casualty, Damages and Repairs Section of Bureau Veritas, says that the risk of liquefaction still continues to be relevant today.

"We consider it is important that all involved in the carriage of these cargoes have an easy to use, concise guide to the risks involved and, importantly, the risk management tools that can reduce the risk of loading cargoes which may liquefy."

Carl Durow, Loss Prevention Manager at The London P&I Club adds: "As bulk carriers represent a significant proportion of the tonnage entered

in the London P&I Club, we are particularly interested in the production of advice that assists the better understanding of how liquefaction occurs and its effect on the stability of a ship.

"Key decision makers are generally to be found on-board ship in these cases and the advice contained in this booklet — produced in association with Bureau Veritas and TMC Marine Consultants — is aimed primarily at seafarers. We look forward to the opportunity to co-operate on similar practical loss prevention publications in the future."

HIGH TEMPERATURES FROM HEATED BUNKER TANKS CAN ALSO LEAD TO DIRECT HEAT-RELATED DISCOLOURATION OF SOYA BEANS



SOYA BEANS

Another issue that could prove costly is the need to be extra vigilant during loading and transport of soya beans to ensure they do not get blamed for cargoes that start “cooking” at sea. According to North’s loss prevention director Tony Baker: “We have recently experienced a number of high-value claims in China associated with damage to soya beans exported from South America.

“The damage is caused by excessively warm or moist cargoes starting to self-heat, which leads to the cargo becoming mouldy, caked or discoloured.”

North said last year that recent cargoes of soya beans loaded in Brazil at over 30°C and with an average moisture content of 12.6% have self-heated. “In such situations it is vital for masters to have evidence of the loading conditions, ideally in the form of a load-port certificate of quality from the seller recording actual average moisture content.

“Masters should also consider taking their own samples for comparison, as well as a photographic record of the loading. They need to keep temperature and ventilation records throughout the voyage. While ventilation has minimal effect on self-heating, accurate records will help avoid any suggestion that ventilation, or lack of it, was responsible for damaging an already unstable cargo.”

Petar Modev, Senior Loss Prevention Executive at UK P&I Club, in conjunction with CWA International, advises on the safe carriage of soya beans. He also warned recently on soya bean cargoes.

“There have been recent reports of severe delays to trucks transporting soya beans to barges on the Amazon as a result of poor road conditions. This will have an impact on any vessels awaiting soya bean deliveries at the Northern Arc ports in Brazil through increasing the storage time prior to shipment, and increasing the likelihood of cargo claims.

“While the moisture content and temperature of soya beans cargoes are beyond a master’s control, there are some guidelines which a master and his crew can follow to receive and carry a soya bean cargo to protect their interests in the unfortunate event that a cargo claim is presented against the vessel at disport.”

UK P&I says holds should be cleaned prior to loading a cargo of beans. The cleanliness required for soya beans is generally regarded as one grade below hospital clean, namely “grain clean”.

Clear photographs of how the cargo is delivered to the vessel, as well as how it is loaded, will be invaluable in the event of a claim, the club says.

It adds that members can appoint a cargo superintendent to sample the cargo throughout loading, according to

a representative sampling method, in order to obtain representative samples which can be assessed for cargo quality in the event a cargo claim arises. “However, this is often a costly exercise so owners may wish to invite all parties to sample the cargo representatively in order to share costs.”

Prolonged exposure to high temperatures from heated bunker tanks can also lead to direct heat-related discoloration of soya beans located next to the tank. This will have a direct impact on the oil and protein quality of the beans. Ideally, soya beans should not be loaded in holds adjacent to fuel oil tanks that are likely to be heated, the Club warns.

The cargo should be ventilated in accordance with sound maritime practice and any carriage instructions provided to the vessel. Ventilation should be conducted in accordance with the fumigation instructions where applicable and when the weather/sea conditions permit. It is important to avoid wetting of the cargo.

The master should instruct the crew to monitor the discharge operations carefully. “This entails noting and photographing how discharge is undertaken. The quantity of spilled cargo should be noted and, if excessive, a protest issued. Any delays that were not the fault of the vessel should also be recorded.”

DELIVERING A HIGHER STANDARD



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A CARRIER'S POINT OF VIEW

COMPANY NEWS

Why, given the propensity of ship sizes getting ever larger, does shipping to and from the Great Lakes with its inherent physical limitations continue to work, asks Suzanne Bleau-Myrand, Director, Marketing, Fednav

FEDERAL MACKINAC GOING THROUGH THE LOCKS IN DULUTH



There are many good explanations for this, the main one being that sailing directly to or from the Great Lakes is the most direct route to the Atlantic Ocean from the industrial and agricultural centre of North America. The St. Lawrence-Great Lakes system reaches 3,700 km (2,340 miles) inland.

Every year, more than 230 million metric tons of raw materials, agricultural commodities, and manufactured products

are moved on this marine highway through more than 100 ports and commercial docks of the eight surrounding American states and two Canadian provinces.

The international fleet of Seaway-size ocean-going vessels transport full loads of bulk or steel and other breakbulk parcels inbound and find themselves suitably positioned to accept shipments of grains, fertiliser, or other bulk cargoes from Great Lakes ports.

The ships will generally discharge part of their load before reaching the first lock of the Seaway or take on completion cargoes in St. Lawrence ports to maximise outbound voyages.

Other factors that favour this system include reduced cargo damage risks due to minimised transshipment, an experienced labour force that has been strike-free over the past 25 years, and finally, specialised terminal operators are both experienced

and flexible with a dedication to continuously improve their performance.

The St. Lawrence Seaway offers both efficiency and reliability. Seaway Authorities will have invested in excess of US\$900M between 1999 and 2018 in modernising the lock system, including the installation of new hands-free mooring devices for faster and more cost-efficient transiting of locks.

The Great Lakes-Seaway marine system operates under a well-established safety framework and has co-ordinated bi-national response programmes/procedures in place. Furthermore, over the past decade, its operators have demonstrated an exemplary safety record.

This marine highway is, without doubt, the greenest route – the shorter distance means less CO₂ emissions. Typically, ships consume 19% less fuel than trains and 500% less than trucks.

The St. Lawrence and Great Lakes marine industry is taking further action to strengthen its environmental performance.

For the first time in North America, all sectors of the marine industry have united to voluntarily adopt an environmental programme designed to drive a process of continuous improvement along this major maritime corridor.

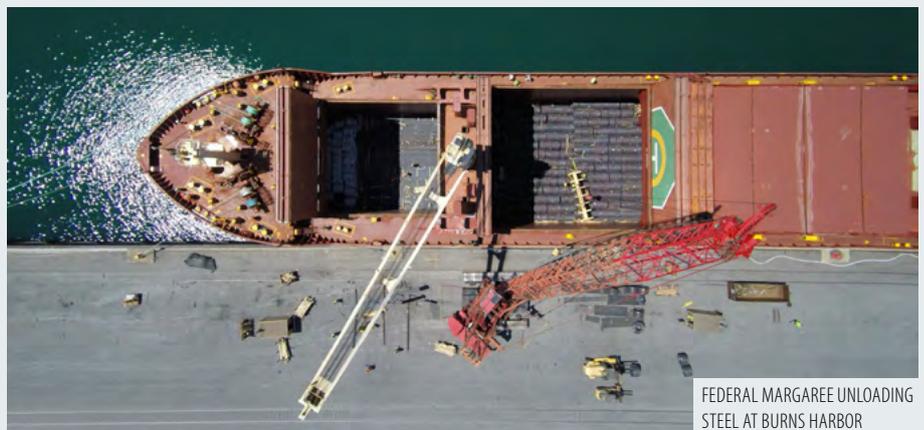
The programme, entitled Green Marine, is spearheaded by an alliance of the marine industry associations in Canada and the United States.

Of course, as in anything, there are always issues to contend with. In the case of the Seaway, these would include increasing costs that must be kept in check, limits to vessel size and draft, and three-month winter closure of the Seaway.

In spite of these challenges, Seaway management has worked very hard in minimising this necessary downtime in order to maintain and improve the locks, and shippers have adapted to plan



FEDERAL BISCAV AT GRAIN TERMINAL IN MILWAUKEE



FEDERAL MARGAREE UNLOADING STEEL AT BURNS HARBOR

accordingly by stockpiling at reduced costs for winter months and finding other innovative solutions.

To mitigate natural limitations resulting from the lock sizes, ocean fleet operators have invested massively in Lakes-adapted vessels.

As part of its fleet-renewal efforts, Fednav – the leading international operator in the St. Lawrence – has built 17 new ocean-going Lakes-fitted ships (Lakers) since 2010. There are 4 more vessels on order for delivery in 2018.

These third-generation (Gen 3) superior-quality vessels are constructed at Oshima Shipyard in Japan and in addition to the standard requirements for loading bulk cargos, are also adapted for efficiently transporting both bulk and breakbulk.

They feature box-shaped holds for ease of stowing general cargo, reinforced decks for stowing heavy equipment and coils, and are each equipped with 4 cranes capable of lifting of 35 metric tons.

These Lakers are the best in their class in terms of both efficiency and environmental protection. These Gen 3 Lakers have an EEDI (Energy-Efficiency Design Index) of 35% less than the original Gen 1 Lakers, consume about 25% less fuel, and are designed to meet the requirements of the CLEAN notation from DNV classification society.

Finally, they are the first to be equipped with ballast water treatment systems (filtration and chlorine injection) – well before the IMO Ballast Water Management Convention enters into force.

These additions to the fleet clearly demonstrate the company's confidence and dedication to the future of shipping in the St. Lawrence Seaway and the Great Lakes, as well as a commitment and care for the future of this natural resource.



COMMODITIES RIDE HIGH

In our Canadian news round-up, innovation and investment in commodities means Canada's ports are booming, with traffic generally on the rise

Cargo movements through Canadian ports showed improvements on the previous year's figures and in 2016, 562 vessels visited the Port of Hamilton, carrying 9.2m tonnes of cargo, edging out the 2015 season total by 0.4%.

Hamilton continues to hold its position as the largest Canadian Great Lakes port (as measured by cargo volume). This increase in Hamilton's cargo is in contrast to the overall Seaway cargo totals, which fell by 3% in 2016.

The agri-food sector continues to be an important part of the mix and last year, agricultural cargoes represented more than 20.7% of the port's total cargo, the highest proportion ever. Commodities such as Ontario-grown corn, wheat and soybeans, and crop inputs such as fertiliser and potash made up the 2016 total agricultural tonnage of 1,916,535 tonnes.

The port says that its contribution to Ontario's agri-food sector is poised to expand this year, as two major infrastructure developments come into operation: a new 50,000 tonne capacity grain export terminal, under construction by G3 Canada, and a new flour mill under construction by Parrish & Heimbecker.

"We've seen terrific momentum in the past few years, as new terminal

investments have increased our capacity to get crops from Ontario farms to global markets efficiently. With these new developments on the horizon, we expect the growth trend to continue," says CEO Ian Hamilton.

Steel industry sector tonnage is a complex picture, with the ongoing decline in tonnage at Hamilton's Stelco facility being balanced by positive performance among other steel players, such as ArcelorMittal Dofasco and Federal Marine Terminals. Overall, steel sector commodities such as iron ore and coal were 5,961,715t of the port's total cargo (not including finished steel), representing a modest decline of 1.9%. Imports of finished steel reached their highest volume in the past five years, with more than half a million tons (509,087t) transiting the port in 2016.

Liquid bulk commodities make up approximately 4.2% of the port's total tonnage. These products, such as gasoline for southern Ontario consumer gas stations, jet fuel for the airport, and asphalt for area roads, totalled 394,000t in 2016, with volumes increasing by 17.1% over 2015.

The Port of Hamilton also serves as a strategic location for the import and export of machinery and components

for Ontario's manufacturing and energy sectors. Measured in cubic metres, these are heavy-lift items such as windmill blades and heavy equipment.

More than 52,000m³ transited the port in 2016, exceeding the five-year average by 6.7%. The first vessel of the 2017 shipping season arrived in Hamilton in March. The tug *Calusa Coast* and its specialised tank barge *Delaware* arrived carrying liquid asphalt from Detroit for delivery to the Yellowline Asphalt Products terminal at the port.

More than 390,000t of liquid bulk products transited the Port of Hamilton last year, including commodities such as liquid asphalt, gasoline and even rum. Yellowline's terminal on Pier 22 is a leading-edge liquid bulk storage and transload terminal specialising in neat and polymer-modified asphalt cement.

Yellowline's facility was designed in 2012 with the environment in mind, including dust control and recycling systems, and a unique safety feature to avoid possible overflows. Yellowline is among the Port's tenant members of the Green Marine programme, which means it meets and reports on environmental standards that go beyond the regulatory requirements.

QUEBEC

Last year marked a return to growth for the Port of Quebec in terms of tonnage handled. After three years in which reports showed a down cycle for raw materials, the port registered a nearly 15% increase in tonnage transferred in 2016 compared to last year, with 24 million tonnes.

"This performance highlights the importance of the Port of Québec's strategic positioning on major international trade routes and particularly the unique advantages of the St. Lawrence / Great Lakes corridor with its 15m depth at low tide and full intermodality," says Quebec Port Authority President and CEO Mario Girard.

The port is also keen to develop the cruise side of its business and 24 ships visited Quebec during the course of the year.

In October, the Québec Port Authority also received the "2016 Marine Environment Protection Award for Ports" from the North American Marine Environment Protection Association (NAMEPA).

The Quebec Port Authority is an autonomous federal organisation constituted under the Canada Marine Act. The ships that pass through the Port are at the heart of a supply chain that transports around \$20bn in goods each year. The maritime hub, creates 8,000 direct and indirect jobs in the Quebec region, according to the most recent study by KPMG/SECOR.

TORONTO

PortsToronto released its 2016 financial figures in April, showing a profit for the ninth year in succession.

PortsToronto's core business operations include the airport, the Port of Toronto and the Outer Harbour Marina and property related to it. All showed a profit last year and generated \$59.7m in overall revenue.

"The year 2016 can be best described as a year of collaboration and performance, with a focus on the future to ensure the continued success of our operations," says Geoffrey Wilson, CEO of PortsToronto.



TORONTO

Since 2009, PortsToronto has invested more than \$9m in community investments and over \$6m was dedicated to environmental initiatives, including the removal of millions of pounds of debris from Toronto's Harbour to prevent flooding and the completion of phase two of a fish and wildlife habitat at the Leslie Street Spit. PortsToronto also continued to invest in measures that minimise the environmental impact of its businesses, such as choosing to power all business units with 100% renewable energy from Bullfrog Power.

At 1.87 million metric tonnes, overall port tonnage was up more than 14% in 2016 with cement cargo reaching a 20-year high at more than 690,000 tonnes — representing a 17% increase from 2015. Stone, aggregate and sand cargo levels nearly tripled totalling 166,207 tonnes, while salt imports increased by four per cent. Sugar imports continued to be strong with more than 515,000 tonnes of raw sugar delivered via the port.

MONTREAL

On delivering the 2016 port results Sylvie Vachon, President and CEO of the Montreal Port Authority says: "Innovation, major projects and ongoing market diversification are some of the key elements that enable us to maintain our role as an efficient hub of global trade."

MPA received a record volume of goods last year at 35.4 million tonnes, up 10.4% compared to last year, despite weak economic growth.

Liquid bulk enjoyed a 37.4% upswing over 2015, with 13.7 million tonnes handled. At 8.4 million tonnes, there was a dip in dry bulk such as the grain, sugar and iron ore that transited through the Port, down 3.7% from 2015.

On the cruise front, last year at its alternative cruise terminal, the Port of Montreal welcomed close to 86,000 passengers and crew members. This slight decrease compared to 2015 was mainly due to the shutdown of a cruise line. This year, at its new cruise terminal, the Port of Montreal expects to welcome about 110,000 passengers and crew members, a record cruise season.

The rehabilitation of Alexandra Pier and the cruise terminal continued last year and other major projects were carried out, including development of the Boucherville Street truck entrance, ongoing implementation of the electronic navigation system, and the launch of a web application for truck drivers to improve traffic flow and mobility on port territory.

VANCOUVER

Statistics for trade last year through the Port of Vancouver showed an Overall volume decrease to 136 million tonnes of cargo, down 1.8 per cent from 2015. But the bulk grain sector was one to reach new highs.

"One of our biggest strengths has been, and continues to be, the port's ability to accommodate the most diversified range of cargo of any port in North America," says Robin Silvester, President and Chief Executive

PORT OF MONTREAL



officer of the Vancouver Fraser Port Authority. "Since 2013, the Port of Vancouver has experienced its fourth consecutive year of traffic volumes over 135-million-tonnes, despite global economic downturns. Thanks to the confidence that port users and terminal operators have shown in the Vancouver gateway, combined with our focus on infrastructure development and sustainability, the Port of Vancouver is well-positioned for continued growth. We are pleased that investments are already underway to build capacity for this growth in multiple sectors"

This is the Port of Vancouver's third consecutive year of record volumes in bulk grain and its fifth year of an upward trend. Bulk grain export volumes through the port increased 1.3% from 2015, to reach 21.8 million metric tonnes in 2016. Strong global demand for Canadian agriculture was met with a bumper crop in Canada and increased exports of grain through the Port of Vancouver.

"The continued growth in grain volumes through the Port of Vancouver demonstrates the strong reputation of Canadian grain and reflects the expansion plans we are seeing for this commodity in particular," continues Silvester. "Demand for Canadian grain from many countries is being met by farmers across Canada and by terminals who continue to invest in new technology."

Record bulk grain exports were driven by higher volumes of canola and speciality crop exports, which are up by 18.9% and 17.9% respectively. This growth was offset by a 16.4% decrease in wheat exports due to adverse weather conditions.

The weak Canadian dollar and a slowdown in industry investment and development activity in western Canada was reflected in the 17.2% decline in metal and project cargo imports in 2016. A 22% drop in breakbulk lumber and wood pulp also contributed to a decline in overall import and export breakbulk volumes.

Metallurgical coal volumes increased 1.8% in 2016 due to a 64.3 per cent increase in exports to India and

sustained demand from Japan, China, and South Korea. Overall coal volumes are down by 6.1% in 2016, due to a 28.2% decrease in thermal coal exports.

Meanwhile, 14 marine carriers are being recognised by the Vancouver Fraser Port Authority with Blue Circle Awards for their voluntary efforts to reduce air emissions in the Port of Vancouver.

Twelve shipping lines and two cruise lines are the recipients of the eighth annual Blue Circle Awards, which recognise marine carriers that excel in environmental stewardship and attain the highest participation rates in the port authority's EcoAction programme with the awards enabling them to claim port dues discounts.

PORT OF VANCOUVER





INVESTMENT ON THE UP

In the latest news round-up from Australia, private investment funds' appetite for investment in its ports indicates the perceived potential of the Australian market, not least as far as bulk products are concerned

ASCIANO DEAL RESULTS IN THREE-WAY SPLIT

The \$9bn battle to purchase ports and transport operator Asciano was completed last year when the company split into three distinct businesses under different ownership structures. These three businesses, Pacific National, Patrick and Bulk and Automotive Ports Services (BAPS), now continue their operations independently of one another.

The Canada Pension Plan Investment Board and the British Columbia Investment Management Corp were just two of the players in the

purchase of Asciano, with additional involvement from Brookfield Infrastructure Partners, whose existing investments include Dalrymple Bay Coal Terminal in Queensland.

Patrick Container Terminals is Australia's largest container terminal operator with four terminals nationwide, while Bulk and Automotive Port Services specialises in the management of bulk ports, logistics and infrastructure alongside Pacific National, the largest combined rail freight company in Australia.

The perception is that infrastructure investments in Australian port facilities chime with pension funds' investment

strategies, with good returns resulting both from trade volumes and also from rents on port property leased to tenants.

With this in mind, the Lonsdale Consortium, comprising the Future Fund, QIC, Global Infrastructure Partners (GIP) and OMERS, acquired a 50-year lease of the Port of Melbourne, Australia's leading trade gateway.

The consortium says it was extremely pleased to be selected to acquire the lease and become custodians of Australia's largest container, automotive and general cargo port.

"The Port of Melbourne is a strategic link between Australia and its major



trading partners and the Lonsdale Consortium looks forward to working with government and industry to deliver world-class facilities and ongoing growth to support future freight demand over the next 50 years," it says.

"The Consortium will bring significant operational expertise to the Port of Melbourne. To deliver this, it has submitted a long-term development plan which is underpinned by a strong commitment to safety, governance, productivity and sustainability."

Members of the Lonsdale Consortium hold significant infrastructure interests across Australia, including stakes in landmark Victorian assets such as Melbourne Airport, Iona Gas Storage Facility and EastLink toll road. The Consortium also brings extensive global and local port ownership experience with involvement in key assets such as Port of Brisbane and NSW Ports.

JAPAN AND AUSTRALIA FORGE HYDROGEN AGREEMENT

Australia and Japan signed a memorandum at the headquarters of the Australian Maritime Safety Authority (AMSA) in Canberra that will allow liquid hydrogen to be shipped in bulk for the first time. Ship containment systems are being developed in Japan that will be capable of safely transporting liquid hydrogen in bulk from Australia to Japan as part of a pilot project scheduled to commence in 2020.

Bulk gas cargoes are carried under the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) which is a mandatory code under the Safety of Life at Sea (SOLAS) convention. The IGC code does not currently allow for the transportation of liquid hydrogen.

Cargoes not covered by the code can be carried if there is an agreement between relevant nations — the flag State of the ship, port of loading and port of unloading — and changes are developed to the code and taken to the International Maritime Organization for approval.

Australia worked with Japan to develop interim carriage requirements for the transportation of liquid hydrogen. These were agreed to at the IMO Maritime Safety Committee in 2016. The interim carriage requirements specify the construction standards of containment vessels for liquid hydrogen carriers, and mitigate the safety risks associated with transporting the liquid hydrogen via sea.

The interim carriage requirements are a critical milestone in the Hydrogen Energy Supply Chain Project and will allow the pilot project to proceed. The memorandum signing was a key element in this process and an important step forward for Kawasaki Heavy Industries, which is building the pilot project's liquid hydrogen carrier. The project will inform future

amendments to the IGC Code, which will allow liquid hydrogen to be carried in bulk under the code without any special agreements.

SURGE IN COAL AND WHEAT SETS TRADE RECORD

A surge in coal and wheat exports has underpinned a new trade record for the Port of Newcastle (above). Australia's third largest port handled just under 168 million tonnes in 2016 an increase of 3.8 million tonnes on the previous year.

With further investment being made to grow trade, Chief Executive Officer, Geoff Crowe, says he is confident the Port of Newcastle will remain pivotal to the Hunter's economic success.

"This is a great result for the port, the Hunter region and the state, and we continue to work with industry and businesses throughout our New South Wales catchment area to deliver new trade," says Crowe.

In a further sign of the recovery in resources, just over 161 million tonnes of coal was exported, an increase of almost 3.3 million tonnes, or 2%, on 2015. A new monthly coal export record of 15.9 million tonnes was achieved in December 2016; the previous record was 15.8 million tonnes in December 2014.

Wheat exports surged to nearly 761,000 tonnes, an increase of 467,000 tonnes on 2015, while fuel imports rose to nearly 1.7 million tonnes, an increase of 15% on 2015.

PORT OF BRISBANE'S PORT WEST
LOGISTICS ESTATE AT LYTTON, BRISBANE



“By trade volume, the Port of Newcastle is Australia’s third largest port and is ranked 24th in the world and we have huge capacity for further diversification and growth, with 200 hectares of vacant land and a shipping channel which can handle double the current ship numbers,” says Crowe.

“Port of Newcastle continues to operate and invest in maintaining the port to optimise its use, including through challenging weather events and peak times, for customers’ convenience and reliability.”

The Port of Newcastle handles 25 cargoes to and from its catchment area, which spans west to Parkes and north to Moree, taking in Dubbo, Tamworth, Armidale, Narromine and Walgett. This area is rich in minerals, agriculture, meat, timber and the manufacture of steel and aluminium.

Coal represents 96% of the Port of Newcastle’s trade, providing a stable foundation for further growth and diversification of other trades including fuel, cruise ships, agriculture and steel.

Recent investment in port infrastructure will support the continued growth of trade. More than \$120m will be injected into the Newcastle economy and 55 jobs created following approval by the Department of Planning and Environment for expansion of the fuel storage terminal at Mayfield, in response to the closure of fuel refineries in Sydney and Newcastle.

Port of Newcastle invested \$5.4m in the installation of power, water and data to facilitate future developments at its Mayfield site and work was completed in 2016. It also funded improvements to port roads.

Fuel logistics company Stolthaven will be constructing a dedicated fuel berth adjacent to the Mayfield bulk liquids precinct. The proposal for the Steelworks Road plant seeks to expand the existing bulk fuel import, storage and dispatch facility by constructing and operating an extra 17 fuel storage tanks.

A Department spokesperson says the expansion of the terminal would reduce

the region’s reliance on fuel supplies from Sydney.

“With the increase in fuel consumption across NSW to service the mining industry and retail fuel outlets, coupled with the recent closure of another fuel storage facility in Newcastle, the development would ensure a locally available source of fuel for industry in the Hunter and Central Coast,” the spokesperson says.

The facility will increase its annual capacity of fuel coming through it from 1,300 mega litres to 3,500 mega litres per year with additional infrastructure built to support the project.

VIVA ENERGY LAUNCHES PINKENBA TERMINAL

Viva Energy Australia opened its new \$18m state-of-the-art Pinkenba, Queensland, bulk lubricants terminal, which has a storage capacity of 3.2ML and can manage up to 30 lubricant grades last year.

The terminal stores the bulk lubricants in horizontal tanks and each



loading gantry is automated, featuring dedicated pumps, piping and loading arms to protect product quality. The horizontal tanks are gravity loaded, rather than pumped in from the bottom of the tank, which increases operational efficiencies. The tanks also have the fastest loading rate in the Australian market.

The bulk lubricants terminal is complemented by a third-party warehouse base, which is capable of processing more than 14,000 pallets of packaged lubricants annually.

Viva Energy's investment in the Pinkenba bulk lubricants terminal forms part of its \$1bn investment across its supply, refining and retail businesses throughout Australia.

With the addition of the bulk lubricants capability, the Pinkenba terminal is strategically placed to service the fuel, bitumen and lubricant needs of commercial and retail customers throughout Queensland and northern New South Wales, the company says.

STORA ENSO SETS UP AT PORT WEST, BRISBANE

Stora Enso, a leading provider of renewable wood and bio material products with world-wide operations, has pre-committed to a 5,950sq m purpose-built warehouse facility on a 1.8 hectare site within the Port of Brisbane's Port West logistics estate at Lytton, Brisbane.

Port of Brisbane CEO Roy Cummins comments: "The Port West location — particularly its proximity to the Port of Brisbane's container terminals and wharves — will enable Stora Enso to significantly reduce its transport logistics costs.

"Port West allows flexibility in lot sizes and configuration, connectivity and 24/7 capability, which meant we could meet Stora Enso's specific requirements."

Stora Enso's Managing Director Matthew Wood says: "The decision to select the Port West site was principally made due to the location's proximity to the port and the associated logistics benefits, all of which will

significantly reduce the cost of our freight movements."

Construction of the new facility is being undertaken by FKG on behalf of PBPL (owner and developer), with occupation prior to end-2017.

The site will be designed for the import, storage and distribution of timber products and will include over 8,000sqm of hardstand.

APRIL SEES INCREASES IN PORT THROUGHPUT

Pilbara Ports Authority has delivered a total monthly throughput of 55 million tonnes (Mt) for the month of April 2017. This is an increase of 3% from the same month in 2016.

The Port of Hedland achieved a monthly throughput of 42.9Mt, which is an increase of 13% from the previous year.

Iron ore exports for the month totalled 42.2Mt, an increase of 12% from the previous year. Imports totalled 98,000 tonnes, an increase of 10% from the same month in 2016.

GOING GREENER

In our Netherlands news round-up, Amsterdam port is continuing its drive towards a coal free zone. One step will be scaling back on coal transhipments

PORT OF AMSTERDAM'S STRATEGIC PLAN 2017-2021 IS AIMING FOR A COAL FREE PORT BY 2030



AMSTERDAM CUTS COAL

Amsterdam is scaling back the transshipment of coal. Volumes have already fallen by 7.5% to 16 million tonnes in the past year. Transshipment of coal is expected to fall by 29% over the next five years. Port of Amsterdam's Strategic Plan 2017-2021 is aiming for a coal free port by 2030.

Port CEO Koen Overtoom says: "In pursuing this strategy, we are deliberately and literally making room for the development of new activities and innovations. This is sensible from an economic point of view and more sustainable, as well as promoting employment. The storage and transshipment of fossil transport fuels such as petrol and kerosene will initially continue to expand during the transition period. These international cargo flows will remain key activities for Port of Amsterdam as long as no adequate alternatives are available yet in our society".

The manufacturing and circular industries are important for the port on account of their innovative and value-added nature and the jobs they generate in the area, the port said. Companies operating in these industries recently established in the Port include yacht manufacturer Royal van Lent in Moezelhaven, and companies operating in the circular and bio-based industries, such as Calcite Factory, a company that converts softening granules into products for the chemical, food and animal feed industries.

In addition, the Waste2Aromatics project, in which Port of Amsterdam and its partners AEB, Orgaworld, Waternet and the Netherlands Organisation for Applied Scientific Research (TNO) are participating, is exploring ways of converting disposable commodities such as paper nappies into valuable molecules that serve as key ingredients in plastics manufacturing.

The port generates heat for the city and is investing heavily in the production and storage of renewable energy. In late 2016, it became the co-owner of a wind farm based in the Afrikahaven area and by 2020, will house a 100,000m² solar array.

Coupled with the expected growth in the production of biofuels, it is hoped this will transform the port into a large, regional, sustainable energy supplier.

Last year, the port had turnover of €149.1m, compared to €146.8 m in 2015. Net profit rose from €52.5m in 2015 to €71.9m in 2016, primarily as a result of non-recurring income.

The rise in net profit is chiefly attributable to a €1.8m increase in port dues, a €3.6m increase in rent and ground lease income and an almost 50% decrease in the other operating expenses item. The latter was due primarily to a release of a provision of more than €11m.

NORTH SEA TRANSHIPMENT ON THE RISE

Transshipment in the North Sea Canal Area grew by 1% to 97 million tonnes in 2016. Transshipment in the port rose by 0.9% to 79.2 million tonnes. The increase in Amsterdam was due principally to a 5% increase in transshipment in dry bulk cargo, including ores and fertilizers. Transshipment in petrol and diesel grew by 8.1% to 42.6 million tonnes. Coal transshipment fell by 6.3% to 16.3 million tonnes for the full year 2016.

The number of sea-going vessels that called at the port region (Velsen, Beverwijk, Zaandam and Amsterdam) totalled 6,982 in 2016 compared to 7,162 in 2015. 157 sea cruise ships and 1,942 river cruise ships called at the North Sea Canal Area in 2016. This is respectively 25 and 173 fewer than in 2015.

The storage and transshipment of fossil transport fuels such as petrol, diesel and kerosene is expected to continue to grow in the years ahead. The construction of the large new sea lock in IJmuiden is fully underway.

SCRAP CHALLENGE AT ROTTERDAM

A great deal of scrap from the Netherlands, Germany and Belgium converges in Rotterdam, after which it is shipped in bulk or by container to countries such as Turkey and Egypt. Scrap metal mainly serves as a raw material for the production of round products. Stainless steel scrap is sorted

in Rotterdam after which it is exported in bulk or by container to smelting plants in Finland, Spain, Italy and the Far East.

A state-of-the-art scrap cluster for storing, transshipping and processing scrap metal and stainless steel has been constructed in the Botlek sector of the port of Rotterdam.

For the first time in many years, Jewometaal Stainless Processing B.V., part of the German ELG Haniel Group, is shipping scrap material to the Far East in bulk again rather than by container. "We always look for the best way to ship our cargoes. This is now the best solution," says Jewometaal Operations Manager Eric Oosterom.

After 15 years, Jewo is once again opting for a bulk carrier to ship cargo to the Far East. One reason is the high container price. "Choosing bulk carriers means that cargo stakeholders have a good way to ship their scrap flows again, says Oosterom.

"We do ship a great deal of bulk cargo, but mainly within Europe. Ships aren't queuing up to carry scrap to the Far East." Nevertheless, Jewo saw Chipolbrok and Sinopol Shipping and Agency as the ideal parties to organise a scheduled service to the Far East. "We are very happy with this solution," Oosterom says.

In this way, Jewo and Chipolbrok aim to make more frequent shipments between Rotterdam and Asia. "We are very happy with this option for now," Oosterom says. "But we cannot see into the future."

NYK'S ONE STOP SHOP

NYK Bulk & Projects Carriers' Europe-Far East Service also uses Rotterdam as its port of call for loading and unloading breakbulk. NYK has opted for a "one stop shop" solution that efficiently concentrates its different freight flows in a single port. While Rotterdam already served as NYK's port of call for its bulk cargo, breakbulk cargoes will now be added.

"It's a fine feather in the cap of our breakbulk proposition," says Robert Jan Timmers of the Port of Rotterdam Authority. "Indeed, Rotterdam has the best proposition in this area. We are superior in terms of the quality

EUROPE'S LARGEST PORT: ROTTERDAM



and effectiveness of our hinterland connections and the optimum accessibility of our port. What's more, the port of Rotterdam is frequently the most economical option thanks to fewer superfluous middlemen and lower port dues."

"Besides already calling on Rotterdam for the unloading of our bulk cargo, we now plan to also unload our breakbulk in Rotterdam – for the simple reason that it raises the efficiency of our calls. In addition, we will be coordinating the export of both freight flows from Rotterdam. This way we can avoid having to call on a second port," says NYK Bulk & Projects' General Manager Seiji Ando, calling from Hamburg.

NYK Bulk & Projects Carriers is a wholly owned subsidiary of NYK, the world's largest shipping company. Operating a fleet of about 160 vessels, NYK Bulk & Projects Carriers concentrates on the worldwide transport of project cargo, heavy lift cargo, steel and bulk cargo.

Every month, the 20,000-30,000 tonne vessels of the company's Europe-Far East Service maintain a scheduled service between the Japanese ports of Yokohama and Kobe and Rotterdam. Their return voyages follow a more flexible itinerary, and the ships can load and unload in ports along the Mediterranean, the Black Sea, the Red Sea, India and Southeast Asia.

Other operators from Rotterdam include:

- » **European Metal Recycling** whose core activities are processing, stocking, importing and exporting different types of steel scrap for recycling purposes. Its terminal in the Botlek has a total available open storage capacity of about 100,000 tonnes and handles about 400,000 tonnes of materials a year. EMR has a second terminal in Amsterdam.
- » **Europees Massagoed Overslagbedrijf**. The largest dry bulk terminal in Europe offers sea berth, with a length of 1,365m and a draft of 23m, which allows four bulk carriers to be accommodated simultaneously. By employing five wide-span gantry cranes and a floating crane, EMO can unload 200,000t a day. EMO also offers assorted processing facilities, such as screening, washing, crushing and blending.
- » **Meneba** is a supplier of cereals and cereal-derivatives to the international food industry. Its main production facility in Rotterdam has an annual milling capacity of approx. 700,000t. Meneba has a storage capacity for cereals of 65,000t at its disposal and a storage capacity for flour of 12,000t in over 100 silos.
- » **Rotterdam Bulk Terminal (RBT)**. RBT is an independent bulk handling company situated in the Vulcaanhaven. RBT has storage and processing facilities for handling and storage of industrial minerals, coal, biomass, ferro-alloys and agricultural commodities. The terminal has an open storage area of 40,000 m².
- » **C Steinweg Handelsveem BV** has been active in the port of Rotterdam since 1847, handling all kinds of commodities in 10 different locations within the Rotterdam port area. Bulk activities were started in 1998 and include transshipment, storage, crushing, screening, weighing and packaging of bulk products such as ferro alloys, noble alloys and fluorspar. The company has a dedicated bulk terminal in the Waalhaven.
- » **Rio Tinto Minerals Rotterdam/ Borax Rio Tinto Minerals**, the primary European distribution centre of borates of the Rio Tinto group, supplies more than 150,000 tonnes of refined boron compounds per year, both in bulk and in bags, to the European industry for a variety of purposes. These activities include loading and unloading, storage, packing, grinding and quality control of borates. About six times a

year, bulkcarriers dock at Rio Tinto's own terminal, to discharge 35,000 to 40,000 tonnes of borates mined and refined at Rio Tinto facilities in California. Two 20,000 ton tanks and ten 2,800 ton silos receive bulk borates by conveyor or pneumatic piping; several warehouses store the bagged products which average about 20 percent of Rio Tinto's throughput in Rotterdam.

DAMEN'S BUYING SPREE

Damen Shipyards Group has entered into an agreement with Keppel Offshore & Marine for the acquisition of the Keppel Verolme shipyard in the Rotterdam Botlek area.

With the acquisition of the Verolme shipyard, Damen takes the next step in strengthening its repair and conversion activities within the regional ship repair and conversion market. Since 1957 the Verolme yard has been active in the Botlek area of the Port of Rotterdam with three graving docks, a quay capacity of over 1,800m and 250 employees.

With the largest dock measuring 90x405m, Damen will be able to cater for the largest maritime projects. Currently, Damen's biggest dock in the Netherlands is located at Damen Shiprepair Rotterdam and measures 46 x 307m. Damen intends to continue activities in the Botlek area with the current employees of the yard.

With the Verolme yard, Damen will have four large repair yards within close proximity of the Port of Rotterdam. The two yards in Rotterdam, along with Damen's yards in Vlissingen and Amsterdam, will closely cooperate to maximise the use of each other's expertise, further developing synergy advantages and jointly marketing their capacity, with the objective to offer more efficient and competitive services.

The targeted timeline to close the transaction is by the end of the second quarter 2017.

SHORE POWER SURGES AHEAD

An installation for shore power has opened in the First Harbour in Scheveningen. Shore power is the provision of shoreside electrical power to ships and smaller craft. Large ships can connect to this power supply while at berth.

Thanks to shore power, ships can cut down on the use of diesel generators. This eliminates air pollution and reduces the noise and vibrations while the engine is idle.

Ships need to be adapted to be able to connect to the shore power, but a number of ships have already done this.

Shore power is not completely new in the Scheveningen harbour as it has been around already for cutters, small fishing boats and pleasure boats.

CHAINCRAFT CHOOSES AMSTERDAM

ChainCraft has chosen the port of Amsterdam as the site to build a demonstration plant in which biomass will be converted into fatty acids for use in animal feed.

While the biomass will initially consist of agricultural residuals, such as sugar beet and potato cuttings and peels, it may also be possible to use organic waste in the future. The fatty acids are currently extracted from palm oil and fossil oil.

The technology applied by ChainCraft makes it possible to replace these fatty acids with ones that are produced in an entirely circular way. This will bring about a significant reduction in CO₂ emissions.

The realisation of the plant at this scale is unique in the world and represents a breakthrough in greening the chemical industry.

The construction of the demonstration plant follows a successful pilot that was conducted in the port of Amsterdam.

This pilot was supported by a grant from the former DIHA fund (Port of Amsterdam Sustainability and Innovation Fund).

ChainCraft's ambition is to realise a full-scale commercial plant that is ten times larger than this demonstration plant within a few years.



HES HARTEL TANK TERMINAL

DRIVING DEVELOPMENT

Our Middle East news round-up finds players in the region's ports sector continuing to build investment here as ports vie to position themselves as the principal hubs for east-west trades

DIRECT CONTACT IN DUBAI

Dubai Maritime City Authority (DMCA), which ranked in the top 10 maritime capitals for 2017, has been pursuing a policy of direct contact with major players in the business in order to promote development.

DMCA recently held meetings with officials of GAC Group, to discuss current and future aspects of maritime freight and logistics services. It is keen to cement links with top industry players that have established a presence in Dubai, in order to promote and grow the maritime cluster, particularly maritime freight, which accounts for the highest share of the maritime industry in Dubai's GDP with AED18 billion.

The Dubai Maritime Sector Strategy aims to develop, regulate and promote the competitive pillars of the local maritime industry to keep abreast with developments at the regional and international levels and ultimately position Dubai as a sustainable, integrated, and leading global maritime hub.

Amer Ali, the DMCA's Executive Director, says that the meeting with GAC's officials provided a perfect platform for exploring the best possible opportunities to enhance constructive cooperation and open new channels for employing the competitive pillars of one of the most comprehensive and distinguished maritime clusters in the world.

He also emphasises the importance of establishing robust relations with stakeholders of the maritime sector from both the public and private sectors, referring to them as being long-standing partners in the journey led by Dubai in its efforts to become one of the world's leading maritime destinations.

Ali says: "Dubai is positioned among the most prominent maritime and logistics centres in the world in terms of maritime freight and logistics services. This is due to the emirate's well-established legal and legislative structure as well as its favourable environment for doing business and making investments.

"We are committed to further developing infrastructure, legislative frameworks and logistics support in line with international standards on maritime operational efficiency, safety, and navigational security.

"We support the aspiration of regional and international investors to building a strong presence within the local maritime cluster which acts as one of the main arteries of the national economy and a major driver of the UAE's economic diversification."



JEBEL ALI PORT

SUSTAINABLE SUGAR SOLUTION

Spanish group TSK is responsible for the turnkey construction for Durrah Advanced Development Company of a sugar refinery in the King Fahd Industrial Port in Yanbu in Saudi Arabia. The value of the contract, which was agreed last year, is close to \$200m.

The plant, with a production capacity of 2,500 tons per day of white sugar, belongs to the Moroccan Consumar group and Saudi groups Industrial Projects Development and Consolidated Brothers. With an implementation period of 27 months, this refinery will be one of the projects supporting sustainable development in the industrial area of Yanbu, with the creation of 370 new jobs. It will serve to cover a large part of the sugar requirements of the Saudi market, which currently consumes more than 1.2 million tons of white sugar a year.

TSK possesses extensive experience in the sugar sector, having worked in most Spanish factories of the former General Azucarera and Ebro Agrícolas, this experience being reinforced in 2015 with the acquisition of 75% of the company Omega Engineering, an engineering company specialising in sugar.

Sister firm PHB Weserhütte has recently signed a contract for the implementation of the biomass management system for the Tees Renewable Energy plant, to be built in the UK port of Teesside.

With this new contract, PHB Weserhütte strengthens its position in the renewable energy sector as a global supplier of material handling equipment with its own technology.

The scope of supply comprises the design, manufacture, transport and assembly of the complete fuel management system of the new plant that will have a fluidised bed power of 299 MWe, and will be the largest biomass plant in the world with this configuration and size.



THE SUGAR REFINERY AT KING FAHD INDUSTRIAL PORT HAS A PRODUCTION CAPACITY OF 2,500 TONS A DAY SUGAR

BAHRI BUSINESS

Riyadh-based Bahri, a global leader in transportation and logistics, has signed a Memorandum of Understanding with Hyundai Heavy Industries to harness big data and technological innovation in the maritime industry. The MoU lays out a comprehensive business co-operation framework to jointly evaluate the feasibility of launching new long-term projects, while at the same time bolstering existing projects that have resulted from their close association over the years.

Ali Al-Harbi, Bahri's acting CEO, comments: "We are excited to collaborate with HHI Group and unearth opportunities that will positively impact the transportation and logistics sector. As one of the largest shipowners and operators in the world, we have a commitment towards the industry to drive sustainable growth by deploying new and improved technology, harnessing data and insights, and making the system more efficient than ever before.

"We also have the Saudi Vision 2030 in our sights, and with cost efficiency and economic diversification being key components of the reform plan, we believe that this collaboration comes at a crucial moment for both companies and the transportation industry at large."

Anwar Siddiqui, Head of Bahri Data, adds: "In just over a year since launch, Bahri Data has emerged as a critical differentiator for Bahri and has established itself as a benchmark for data-driven initiatives in the transportation industry.

"The need of the hour is a solid and reliable framework that puts data at the core of our business, and this collaboration will set the tone for distilling sophisticated transportation functions into streamlined and predictable data that helps make smarter decisions.

"This strategic undertaking with HHI Group opens up several possibilities, including using Big Data technology to generate higher revenues and ensuring improved client satisfaction through real-time data and analysis."

Bahri subsidiary Bahri Dry Bulk Company recently entered into a joint venture agreement with Koninklijke Bunge with the intention of establishing a joint venture in Dubai.

The joint venture will be engaged in chartering vessels for the purpose of importing and exporting dry bulk commodities into and from and within certain countries in the Middle East.

BDB will own 60% of the shareholding in the joint venture and Bunge will own the remaining 40%.

While the initial term of the joint venture agreement is five years, the parties expect the duration of their co-operation to be substantially longer. BDB and Bunge expect to complete the establishment of the joint venture by the second quarter of 2017. Financial impact is expected starting from the fourth quarter of 2017 and Bahri will announce any material developments once available.

SUEZ PROJECT PROPOSALS

The Suez Canal Authority has received five proposals from Saudi Arabia, Kuwait, UAE, the Netherlands and Russia to participate in a bunkering service project.

Admiral Mohab Mameesh, Chairman of the Suez Canal Authority (SCA) said recently that the SCA is working hard to provide various maritime services to the transiting vessels, not just bunkering.

More than 17,000 vessels transit the Suez Canal annually carrying around one billion tons of cargo. Vessels stay in the waiting areas at the north and south entrances of the Suez Canal for five to seven hours before entering the waterway and bunkering services can be provided meanwhile.

The new project aims to boost revenues and it is expected that large

vessels are going to be used as floating tanks and will be accompanied by fuel barges. This will be done in co-ordination with the Ministry of Petroleum and the Governorate of Suez by the end of 2017. Phase 2 of the project includes establishing a maritime services station to provide the vessels with all their needs, including food, water, and so on.

Admiral Mameesh said that the SCA will review the five offers carefully to reach the best decision to guarantee the quality of service and the availability of various types of fuel.

Egyptian Investment and International Cooperation Minister Sahr Nasr had a meeting recently with Admiral Mameesh to discuss pumping new investments in the Suez Canal Axis Development Project.

These include plans to develop West Port Said, East Port Said, Ain Sokhna, El Arish, El Tor and Adabiya, in the Suez Canal zone.

The two sides also agreed to remove any obstacles to a project to construct Egypt's first private bulk liquids terminal at Ain Sokhna port on the Red Sea for the import and storage of oil, butane gas and LNG to Egypt.

The project is carried out by the Suez Canal Authority, the Dubai-based DP World and Sonker Bunkering Company.

KHALIFA LAUNCH

Schmidt Middle East logistics, a subsidiary of Schmidt Heilbronn, a leader in dry bulk logistics and a global specialist for dry bulk polymer logistics, has launched operations of its multi-user logistics hub based in Khalifa Port Free Trade Zone within Khalifa Industrial Zone Abu Dhabi (KIZAD).

This multi-user chemical and petrochemical dedicated hub is set to offer its services to clients within UAE and the rest of the Gulf region and will act as the company's Middle Eastern headquarters. Schmidt Middle East Logistics has leased about 22,000 square meters of prime land at Khalifa Port FTZ in order to setup an economical and efficient solution to store, handle and distribute different bulk materials like polyethylene, polypropylene, catalysts and additives for the chemical and petrochemical industry.

Wolfgang Hoppmann, chief executive of Schmidt Middle East, says: "Our hub in KIZAD represents a key part of our expansion plans in the GCC to better serve our customers. We have also recently launched our facility in Bahrain, in addition to serving our existing customers for their onsite projects in Kuwait, Saudi, Qatar, and Oman."



EGYPT'S SUEZ CANAL EXPANSION PROJECT

"We continue to develop our infrastructure and facilities in the region as part of our commitment to our customers, and in order to facilitate the growth and efficiency of their operations in the region. We are confident of the future growth of this sector in the region, and we will continue to offer world-class services we are known for."

Mana Mohammed Saeed Al Mulla, CEO of KIZAD, comments: "We are delighted to contribute to the Emirate's business portfolio by welcoming Schmidt Middle East Logistics to KIZAD's Khalifa Port FTZ, now home to its regional headquarters. Schmidt is one of the world's leading dry bulk logistics solution providers and its new, state-of-the-art facility will benefit from a strategic location that offers great regional and international transportation links.

"The readily available supply chain connections at KIZAD, coupled with excellent transport infrastructure allow our investors to receive materials and reach their clients and markets fast, smoothly and cost-effectively. It is such services that attract major players such as Schmidt ME Logistics to Khalifa Port FTZ in KIZAD. To date, we have over 130 investors benefitting from our outstanding services and access to regional and international markets," says Al Mulla.

The AED20 million facility allows Schmidt to open the gates for highly specialised logistics in this region, with UAE playing an important role as a distribution hub for the GCC.

Schmidt ME Logistics facility at Khalifa Port FTZ comprises a warehouse providing about 2000 square meters of storage area, a silo battery containing nine silos, a tilting platform, a packaging line, a repair shop and a service station, as well as offices and social rooms. In addition, the facility offers services such as truck transport and customs clearance.

To and from its warehouse and silos bunker storage, Schmidt ME Logistics will provide transport services for dry bulk products, packing dry bulk goods into maritime containers and managing overseas long haul and short sea transport to end user locations.

HUGE CRANE INVESTMENT FOR SAQR PORT

Saqr Port Authority recently signed a contract for two new LHM 800 units in bulk handling configuration. These two machines will be the biggest mobile harbour cranes for bulk operation in the Middle East.

The LHM 800 in bulk handling configuration come with a 54m boom and a maximum lifting capacity of up to 144t. The powerful hydrostatic transmission and advanced Liebherr electronics ensure short, productive working cycles during bulk handling. Both machines for Saqr Port are equipped with Liebherr's unique Pactronic system.

This hydraulic hybrid drive system achieves increased handling performance with reduced fuel consumption. By adding an accumulator as a secondary energy source instead of a bigger or additional prime mover, Pactronic regenerates the reverse power while lowering the load.

The stored energy is transferred back to the system when the crane requires peak power during hoisting. In terms of turnover capacity, that means an increase of up to 30% compared to a conventional machine with an equal power rating of the primary energy source.

With Pactronic, the LHM 800 is able to achieve a turnover of up to 2300t per hour.

Saqr Port has committed to a strategy of continually investing in the quality and modernisation of its port facilities. This includes the creation of additional deep-water berths, capable of efficiently handling Capesize vessels.

The two new bulk giants LHM 800 will operate at these new berths and consequently reinforce Saqr Port's position in the Middle East bulk market. Both cranes will start operation in spring 2018.

They will be delivered fully assembled directly from Liebherr's maritime headquarter in Rostock, Germany to Saqr Port at the beginning of 2018. "These new mobile harbour cranes will help us to improve our bulk handling efficiency even more," says Captain Cliff Brand, Group General Manager RAK Ports.

"Thanks to the high lifting capacities at a wide outreach, we are able to expand our service portfolio up to Capesize class vessels.

"This is very important for the future development of our port. We have been operating Liebherr mobile harbour cranes for many years and are very satisfied with the overall performance and the reliability of the machines."

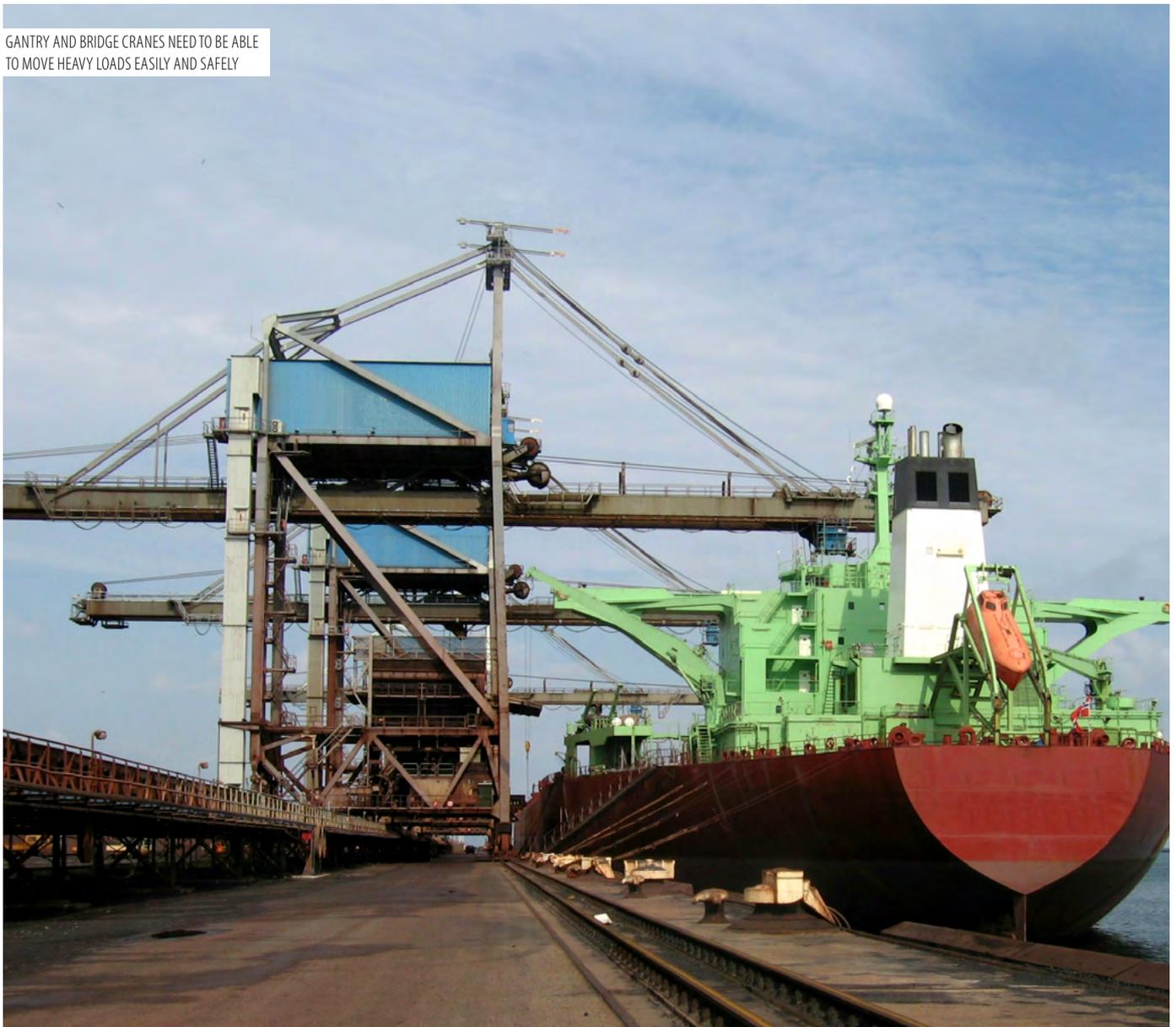


LEFT TO RIGHT: GUNTHER BERTHOLD, LIEBHERR; CAPT CLIFF BRAND, DAVID OWEN, RAK PORTS

DEUTSCHE TECH

In the latest news round-up from Germany, innovative technology, including new loading and cargo handling systems, has seen Germany's increasing move towards digitalisation, cementing its place as one of the pioneers of 24-hour cargo handling

GANTRY AND BRIDGE CRANES NEED TO BE ABLE TO MOVE HEAVY LOADS EASILY AND SAFELY



IN CONTROL

Gantry and bridge cranes need to be able to move heavy loads easily and safely. Hirschmann MCS, based in Ettlingen, is a market leader in controllers and sensors for these applications and has developed and obtained certification for an innovative complete overload protection concept.

PSV overload protection devices have been a mainstay for decades. With the new cSCALE trueSafety controller, the individual cSCALE components are perfectly harmonized with the fSENS force sensors. Both were recently certified under the latest versions of the EN ISO 13849 and EN 62061 standards as well as the EN 15011:2011+A1:2014 standard for bridge and gantry cranes, which covers all safety functions and sequences.

The certified complete overload protection concept saves crane manufacturers and operators the expense and trouble of obtaining individual certificates when equipping or re-equipping cranes. All of the components involved are completely compatible. Parametrisation, calibration, and checking are much easier than with PSV, thanks to a user-friendly, browser-based service tool. It enables both on-site work and remote maintenance. Everything is password-protected with flexibly assignable access privileges. The cSCALE controller integrates into the overall control architecture. Modbus, TCP/IP, CANopen, Profibus-DP, and ProfiNET I/O communication interfaces are available. The sensors of the fSENS series and the cSCALE controllers are robust, require a minimum of maintenance, and work reliably under harsh environmental conditions.

The certified system meets all of the requirements for overload protection according to EN 15011:2011. Overloads are reliably detected to ensure timely system cut-out in critical situations. This can happen in either of two different ways: indirectly with a delayed cut-out or immediately if the weight involved is greater.

A large number of other functions can also be optionally enabled. They

include a limit switch that protects hoists by blocking their upward motion when triggered, limiting wire rope layers in winches by blocking their downward motion, horizontal and vertical monitoring of unbalanced loads, cut-out when the load falls short of a defined minimum, monitoring of proper functioning according to PL d, and monitoring of loads on individual ropes according to PL d.

Once the system has been configured, it ensures maximum safety. Audible and visual alarms are activated, including a slack cable warning, sirens, and lamps.

The comprehensive data logger shows error and event messages, status information, analogue measurement values and calculated values (for example, total and individual loads). Data is stored at regular intervals and after certain events.

Reports are also compiled, containing data from the operating hour counter, the stroke counter, and the timespan load counter. Strokes are recorded in different load ranges.

These values are continuously recorded for at least 30 days and are easy to import into Excel using a memory stick.

The cSCALE controller supports up to eight different operating modes for different spreads or grippers.

Hirschmann MCS engineers designed the solution so it can be flexibly parametrised for a wide variety of requirements. These include:

- » Support for between one and eight redundant force sensors
- » Digital or analogue height correction, i.e. correction of the load display to compensate for the angles of the stay rope
- » Adjustable cutout points.

ECOSTRUXURE LAUNCH

Dusseldorf-based Schneider Electric, the global specialist in energy management and automation, has introduced EcoStruxure Machine, a significant step forward in its ability to help its packaging machine builders design machine solutions.

At Interpack 2017 the company

launched the EcoStruxure system which delivers Schneider Electric's smart machine solutions, which are built on its IIoT (Industrial Internet of Things) -enabled open and interoperable EcoStruxure system architecture and platform.

Schneider Electric's vision for smart machines is part of a connected, cybersecure production system based on EcoStruxure Machine, the company's machine-centric automation architecture that enables OEMs to design more efficient, more flexible, better connected, and safer machines through advanced digital technologies and open standards. EcoStruxure delivers innovation from connected products to to applications, analytics and services.

At the apps, analytics and services layer, EcoStruxure integrates machines to the IT layer, allowing the collection and aggregation of data ready for analysis – for machine builders and end users alike this means increased uptime and the ability to find information faster for efficient operations and maintenance.

EcoStruxure Machine aims to facilitate IT and operational technology convergence across industry-standard platforms, meaning machine builders reap benefits from web interfaces and cloud computing for easy vertical integration of production lines, and realtime data exchange to access, monitor, and control.

NEW MARITIME SAFETY CENTRE

A new Maritime Safety and Security Centre in Cuxhaven was officially opened in February.

The Maritime Safety and Security Centre has been acting as the communication and cooperation network for the operational forces of the Federal Government and the German coastal states to ensure maritime safety and security since 2007. Different specialist capabilities have been grouped together in the Joint Emergency Reporting and Assessment Centre Sea (GLZ-See) for this period of time and operations are co-ordinated on the basis of common situational awareness.

About 100 employees, including shift workers, are working in this newly built facility within the area of the Waterways and Shipping Department in Cuxhaven.

The Maritime Safety and Security Centre is responsible for the entire German coast and all water access routes. The Federal Office for Agriculture and Food, Federal Police Department, Central Customs Authority, German Navy, Central Command for Maritime Emergencies, Federal Waterways and Shipping Administration, and the Waterways Police forces of the German federal and coastal states operate together through this centre.

COMMUNICATION FOR CENTRE

Frequentis has introduced its communication solution, Asgard, which is fully IP-based and operating on COTS (commercial off-the-shelf) hardware.

Compliant to the highest security standards, Asgard is verified by the Federal Office for Information Security (BSI). It incorporates cross-industry expertise, connecting maritime and public safety product features.

"The exchange of information between all facilities involved in the Maritime Safety and Security Centre has been intensified and accelerated. The deployment of Asgard helped to promote this further. Frequentis delivered at cost, on time and with a very professional project management", says Hannes Mahler, Deputy Administration Manager at the Maritime Safety and Security Centre.

LIEBHERR CEMENTS PARTNERSHIP

A longstanding partnership between Damen Shipyards and leading crane manufacturer Liebherr was cemented recently with a further order from Damen. The two family-owned companies have worked together since 1985. The order was for a Liebherr CBG 350 crane, which will be installed on the new generation Transshipment Crane Barge 6324.

Liebherr board member Patricia Rűf comments: "The vessels of Damen Shipyards Group and the cranes from Liebherr complement each

other perfectly and achieve highest effectiveness when it comes down to transportation and transshipment of goods globally.

"The common position of both our companies essentially follows the philosophy of creating the highest quality standards and we are proud that our cranes are installed on their vessels.

"We are confident that our co-operation will continue in the future and we are in no doubt that the continuous improvement of our ship crane portfolio will meet the requirements of next-generation vessels."

The new barge type was designed by the two companies, together with Pon Power for the generator sets, DMT Marine Equipment for the winches and Van der Leun for the electrical systems.

RAIL GETS BACK ON TRACK

Hamburg Port Authority (HPA) recently started work on the new port railway locomotive service point. The new facility at Dradenauer Deichweg will form part of the Alte Süderelbe rail terminal and come with locomotive storage spaces, a workshop and refuelling station as well as offices and break rooms.

The project will ease the strain on the track network and benefit the environment as unnecessary trips of locomotives running light can be avoided.

On an average working day, roughly 200 trains arrive at and depart from the Port of Hamburg. This frequently involves locomotive-only trips to social and maintenance facilities located outside the port. Such "unladen" trips put additional strain on the already highly frequented route sections between the port and the Harburg district. As rail traffic is expected to rise, the HPA has decided to build the new locomotive service point to substantially reduce movements of locomotives running light.

Similar to a car park, the facility offers "parking" bays for 32 locomotives arranged in parallel. Its centre piece is an 80x75m large transfer table facility used to move rolling stock to parking positions.

Apart from the locomotive storage spaces, the service point will also house a two-track locomotive workshop that will be operated by Ajax Loktechnik. In addition, office space — which the RU can also use to schedule wagons and process trains — and break rooms/ common rooms for multiple unit drivers and shunting workers will be provided. A diesel locomotive refuelling station will also be available.

The new service point is expected to start operations at the end of 2017, with the official launch of the locomotive workshop planned for the spring of 2018.

The locomotive service point is part of an overall infrastructure expansion concept for the western port area. "Besides providing important facilities at the starting and end points of rail journeys, our foremost aim is to avoid movements of locomotives running light," explains Harald Kreft, Head of Railway Infrastructure at the HPA.

"Analyses have confirmed that reducing locomotive-only trips will create the freight train capacities required to accommodate rising transport volumes at the railway hub of Hamburg."

According to Tino Klemm, HPA Chief Financial Officer: "The locomotive service point will further strengthen the Port Railway's network capacity. It is the HPA's contribution to making the Port of Hamburg continuously more attractive for RUs. At the same time, the concept benefits the environment as a lot of locomotive-only trips can be avoided."

BIOMASS MANAGEMENT

PHB Weserhütte has recently signed a contract for the implementation of the biomass management system for the Tees Renewable Energy plant, to be built in the port of Teesside, UK.

With this new contract, PHB Weserhütte strengthens its position in the renewable energy sector as a global supplier of material handling equipment with its own technology.

The scope of supply comprises the design, manufacture, transport and assembly of the complete fuel management system of the new plant

that will have a fluidised bed power of 299 MWe and will be the largest biomass plant in the world with this configuration and size.

BOOM SYSTEM DEBUTS

Liebherr has developed a completely new boom system with the designation SX for its 750-tonne lattice boom cranes LR 1750/2 and LG 1750, for erecting the latest generation of wind turbines. Turbines with a hub height of up to 165m and component weights of up to 120 tonnes can be erected using the SX system. To date these capacity data were the exclusive domain of cranes in the 1000t class or above.



LIEBHERR SX BOOM LG 1750

The new SX system differs from previous boom systems by the fact that 3.5m-wide lattice sections are used in the bottom area of the boom rather than sections measuring just 3m wide.

The extended lattice sections increase the lateral stability of the boom and therefore deliver a higher load capacity. Furthermore, the weight of the lattice sections has been reduced. This means that the boom length can now be raised up to 165m, comprising the main boom plus the fixed lattice jib.

An additional increase in lifting capacity is achieved by a particularly innovative extension to the SX system: instead of 3.5m-wide lattice sections, two lattice sections each 14m in length (SX2 system) or three lattice sections each 14m in length (SX3 system) with a width of 6m are installed in the lowest area of the main boom.

This provides additional rigidity to the boom system, thus increasing its load capacity.

The challenge for the development of the 6m-wide lattice sections, however, was the question of how they could be transported economically on public roads. Liebherr created something completely new to solve this problem: the wide boom sections made up of two halves which can be bolted together in the centre and separated again very quickly.

To transport them, the individual halves are slightly offset longitudinally and then joined so that they mesh together like teeth. This means that a practical transport width of 3.5m can be achieved.

VERSATILE AND MOBILE

Konecranes Gottwald mobile harbour cranes continue to be in great demand for fruit handling applications at terminals around the world.

At the end of 2016, HHLA Frucht- und Kühl-Zentrum, part of Hamburger Hafen und Logistik AG (HHLA) and the terminal operator SEA-invest, put a diesel-electric Konecranes Gottwald Model 4 Mobile Harbor Crane into operation at its multi-purpose terminal in Hamburg.

The crane's main job at the O'Swaldkai multi-purpose terminal in Hamburg is to serve reefer vessels that transport bananas. The G HMK 4406 unloads the delicate fruit on pallets from the ship's hold and unloads reefer containers that arrive as deck cargo.

With a maximum lifting capacity of 100t and an outreach of up to 46m, it can also handle heavy cargo and project cargo.

Axel Hoeckrich, Managing Director of HHLA Frucht- und Kühl-Zentrum GmbH, says: "With this new mobile harbour crane, we can efficiently unload the growing number of containers that are now being transported aboard fruit vessels.

"It has replaced an old ship-to-shore crane. Furthermore, it can also unload fruit pallets and its versatility increases our ability to develop new business activities. With this state-of-the-art crane, we are strengthening the fruit port of Hamburg, which is already the most important site for fruit handling and trade in Germany."

HHLA has trusted mobile harbour crane technology from Konecranes for fruit handling since 2003. At that time, two small HMK 90 E cranes of Generation 4 went to Hamburg, where they are still in operation. Like them, the new crane can be moved quickly on the quayside.

"All of the cranes also have high working speeds, giving high productivity and, particularly when handling fruit pallets, help us to keep the cold chain intact," explains Hans-Juergen Schneider, Regional Sales Manager, Konecranes, Port Solutions. The G HMK 4406's maximum lifting speed is 90 m/min.

The benefits of Konecranes Gottwald mobile harbour cranes and the resulting competitive advantages have recently impressed several other operators of fruit terminals.

As a result, two additional machines started work in a fruit terminal in the UK in October 2016. These machines are Model 2 cranes in the G HMK 2204 two-rope variant, predominantly intended for unloading fruit pallets arriving at two berths.

EVENTS

The not-to-be-missed events for all those in the industry

06-07 JUNE 2017

SOLIDS

MOSCOW, RUSSIA

www.easyfairs.com/solids-russia-2017/solids-russia-2017/

07-08 JUNE 2017

ACI, EUROPEAN ENVIRONMENTAL PORTS CONFERENCE

ANTWERP, NETHERLANDS

www.wplgroup.com/aci/event/Environmental-Ports-Conference

19-20 JUNE 2017

SMI, PORT SECURITY TECHNOLOGY

LONDON, UK

www.smi-online.co.uk/defence/uk/port-security-technology

21-22 JUNE 2017

PORT FINANCE INTERNATIONAL RIO, BRAZIL

<http://portfinanceinternational.com/pfbrazil2017>

27-29 JUNE 2017

TOC EUROPE

AMSTERDAM, NETHERLANDS

www.tocevents-europe.com

11-13 SEPTEMBER 2017

INDIAN COAL MARKETS CONFERENCE

KOLKATTA, INDIA

www.indiancoalmarkets.com

19-20 SEPTEMBER 2017

AFRICAN SUGAR CONFERENCE

NAIROBI

<https://energy.knect365.com/sugar-ethanol-africa/>

20-22 SEPTEMBER 2017

GLOBAL GRAIN SOUTH AMERICA

BUENOS AIRES, ARGENTINA

www.globalgrainevents.com

25-26 SEPTEMBER 2017

LMA, LIQUIFICATION OF BULK CARGOES

LONDON, UK

<https://maritime.knect365.com/liquefaction-bulk-cargoes/>

27-29 SEPTEMBER 2017

PORT INFRASTRUCTURE DEVELOPMENT

ROTTERDAM, NETHERLANDS

www.pidevent.com/?MAC=INF_GPPC_25383.002&gclid=CKehwrvv8M4CFdS4GwodK6YC4g

02-06 OCTOBER 2017

ICHCA

LAS PALMAS, GRAN CANARIAS

<http://ichca.com/ichca-international-conference-2017>

04-05 OCTOBER 2017

SOLIDS

ROTTERDAM, NETHERLANDS

www.easyfairs.com/?id=103992

10-13 OCTOBER 2017

GREENPORT

AMSTERDAM, NETHERLANDS

www.greenport.com/congress/news101/host-port-and-2017-dates-confirmed

17-18 OCTOBER 2017

AFRICA PORT DEVELOPMENT

DURBAN, SA

www.portsevolution.com

17-19 OCTOBER 2017

TOC AMERICAS

LIMA, PERU

www.tocevents-america.com

18-19 OCTOBER 2017

BULKEX

NOTTINGHAM, UK

<http://mhea.co.uk/bulkex-2017>

24-26 OCTOBER 2017

OVERVIEW OF PARTICULATE

HANDLING SHORT COURSE

GREENWICH, UK

<http://www.gre.ac.uk/engsci/research/groups/wolfsoncentre/home>

25-27 OCTOBER 2017

WORLD COAL LEADERS NETWORK

SITGES, SPAIN

www.coaltrans.com/world-coal-conference/details.html

31 OCTOBER 2017 – 01 NOVEMBER 2017

BULK TERMINALS 2017: ACHIEVING EFFICIENCY AND COMPLIANCE

LONDON, UK

www.bulkterminals.org

See page 7 for more information

01-02 NOVEMBER 2017

ASIAN SUGAR

BALI, INDONESIA

www.aiscsugar.com

07-10 NOVEMBER 2017

EUROPORT

ROTTERDAM, NETHERLANDS

www.europort.nl

14-16 NOVEMBER 2017

GLOBAL GRAIN GENEVA

GENEVA, SWITZERLAND

www.globalgrainevents.com/geneva/details.html

18-19 NOVEMBER 2017

COALTRANS EMERGING ASIAN MARKETS

HO CHI MINH, VIETNAM

www.coaltrans.com/emerging-asian-coal-markets/details.html

30 NOVEMBER 2017

FEPORT THIRD ANNUAL

STAKEHOLDERS' CONFERENCE

BRUSSELS, BELGIUM

www.feport.eu

01 FEBRUARY 2018

COALTRANS

INDIA

www.coaltrans.com

01-02 FEBRUARY 2018

COALTRANS USA

MIAMI, US

www.coaltrans.com/usa/details.html

07-09 FEBRUARY 2018

MVTTC, NEW ORLEANS

NEW ORLEANS, US

www.mvttc.com

13-15 MARCH 2018

INTERMODAL SOUTH AMERICA

SAO PAULO, BRAZIL

<http://10times.com/intermodal-south-america>

01-03 MAY 2018

MULTIMODAL 2018

BIRMINGHAM, UK

www.multimodal.org.uk

04-08 JUNE 2018

POSIDONIA

ATHENS, GREECE

www.eventseye.com/fairs/f-posidonia-14329-1.html

04-07 SEPTEMBER 2018

SMM, HAMBURG

HAMBURG, GERMANY

www.smm-hamburg.com

BULK TERMINALS 2017

ACHIEVING EFFICIENCY AND COMPLIANCE

The Inaugural Conference of the Association of Bulk Terminal Operators (ABTO)

31 October – 1 November 2017, London

More details at
www.bulkterminals.org/events.html



The only event aimed
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KEY SPEAKERS INCLUDE

Susan Oatway, Associate,
Drewry Shipping Consultants

Professor Mike Bradley,
Director, The Wolfson Centre

Aron Frank Sørensen,
Head of Maritime Technology
and Regulation, BIMCO

David Wragg, Business
Development Director,
Hargreaves Industrial Services

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Liebherr Fixed Cargo Cranes

Fixed cargo cranes (FCC) are space-saving handling solutions for harbours and quaysides and suitable for vessels up to post-Panamax class. The slewing cranes installed on fixed foundation pedestals comprise both cylinder luffing as well as wire luffing slewing or double girder cranes. They provide the optimum balance between restricted space and cost effective turnover.