BULK TERMINALS *international*

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THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

ROAD TO REGENERATION

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FUEL FOR THOUGHT

BY SANDRA SPEARES

While the bulk segment is seeing new investment, the industry as a whole is grappling with the looming low sulphur deadline

Those operating in the bulk segment have been more upbeat in recent months as operators invest in new tonnage and there are hopes that, for bulk cargoes at least, over-ordering will not prove to be a depressant on prices.

There are also signs that port operators that have been concentrating on the container side of the equation – not least in the Middle East – may be trying to diversify their portfolios and boost handling of bulk commodities.

For example, there was good news for Redcar Bulk Terminal recently as the company announced two new long-term investments with PMAC, building a £250m waste-to-energy plant at Redcar and Sirius Minerals signing a deal to transport millions of tonnes of polyhalite through the port.

Meanwhile, the industry as a whole continues to grapple with the demands of new regulations covering emissions with the looming deadline of a sulphur cap from 1 January 2020 and new rules on cyber security coming in the following year.

Companies are finally having to step up to the plate in deciding whether to count on supplies of low sulphur fuel being available to meet demand or alternatively fitting scrubbers to clean higher sulphur products. There have been several high-profile deals for scrubbers in recent times, which some commentators suggest may be driven by tactics to secure a solid chunk of business while other companies are struggling to fit the new equipment.

Availability aside, much of the concern about low sulphur is whether available fuel supplies will meet quality standards. This will be essential to ensure ships operate in safety.

There was therefore some relief at the International Maritime Organization recently, when the International Organisation for Standardisation announced that the existing industry standard for marine fuel oils, ISO 8217, already addresses the new 0.5% fuel blends that will be used by many ships to comply in 2020.

That said, although there appears to be no need to revise existing standards prior to 2020, question marks remain over whether the tools are in place to assess compatibility. In addition to other bulk cargo safety issues still on the table, including liquefaction, concerns over cat fines in low sulphur products are once again on the agenda.

Many of these topics will be discussed in detail at our forthcoming conference in Hamburg in October. Not only will there be analysis of the bulk market as a whole, including prospects for bulk terminal operators, but a chance to discuss some of the hot topics they face, such as safety and security in port facilities, the increasing use of automation in port processes and the ever-present and increasingly vital need to ensure that ships and shoreside facilities are safe from cyber attack.

Those making the trip to Hamburg will also be able to hear in detail of development at one of the world's foremost ports in terms of successful trading, while hearing of new technological developments, which, we all hope, will be good news for bulk terminal operators.

We hope you enjoy this edition of *Bulk Terminals International* and look forward to seeing you in Hamburg.

BULK TERMINALS *international*

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ASSOCIATION OF BULK TERMINAL OPERATORS

EDITOR: SANDRA SPEARES
SPEARES1@AOL.COM

DESIGNER: JUSTIN IVES
JUSTINDESIGN@LIVE.CO.UK

PROJECT DIRECTOR: JONATHON FERRIS
JONATHON.FERRIS@BULKTERMINALS.ORG

PROJECT MANAGER: ALEX CORBOUDE
ALEX.CORBOUDE@BULKTERMINALS.ORG

SUB-EDITOR: SAMANTHA ROBINSON
SAM.ROBINSON.JOURNALIST@GMAIL.COM

PUBLISHER: BILL ROBINSON
PRODUCTION@BULKTERMINALS.ORG

ABTO
35 BEACON DRIVE
NEWTON ABBOT
DEVON
TQ12 1GG

CHIEF EXECUTIVE: IAN ADAMS
CE@BULKTERMINALS.ORG

EVENTS: SIMON GUTTERIDGE
EVENTS@BULKTERMINALS.ORG

PR: PATRIK WHEATER
PR@SEABORNECOMMS.COM

WWW.BULKTERMINALS.ORG

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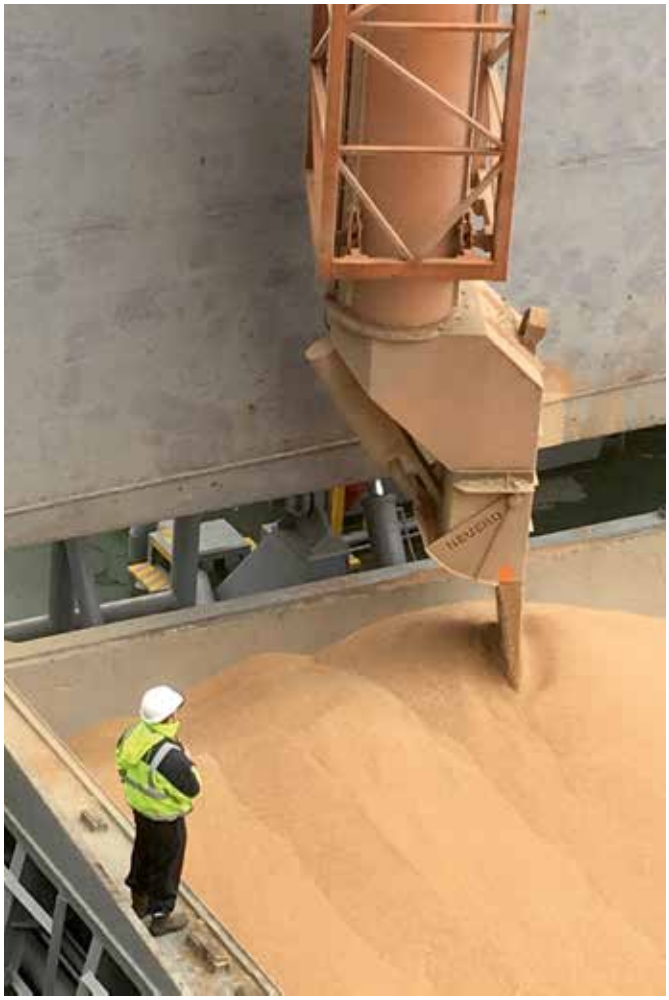





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279-2016

CONTENTS


» p44


» p53


» p51


» p36

A CAUTIOUS NOTE ON CARBON

IAN ADAMS, CHIEF EXECUTIVE, ABTO

Welcome to the latest edition of *Bulk Terminals International*. I hope that you are finding the publication to be interesting, informative and, above all else, useful as we enter our second year of publication. ABTO is a relatively young organisation, but we are delighted with the response we have received from the Bulk Terminals community. We are now fast approaching our second annual conference, which this year is being held in Hamburg, Germany. More on that later…

One of the reasons that ABTO exists is to represent its members. We achieve this in many ways. We maintain a good working relationship with other trade associations in the sector, which may result in collaborations to address issues that arise within the industry. It is important to remember that often there are issues that affect ship operators that have a knock-on effect on the terminals business, and vice versa.

We therefore maintain a dialogue with organisations such as the Baltic and International Maritime Council (BIMCO). We also enjoy a very good working relationship with the International Cargo Handling Coordination Association (ICHCA) whose representative, Richard Brough, will be speaking at our annual conference.

The most important representation that we make is to the International Maritime Organization (IMO). While it is true that the IMO is primarily concerned with the shipping industry, as mentioned previously, the actions of the IMO can have an unintended (or sometimes intended) consequence for the terminals. It is therefore vital that we keep an eye on events at IMO.

As discussed in the last edition of *Bulk Terminals International*, there have been some big headlines out of IMO regarding environmental issues. At present, these have had little effect on terminals. In fact, decisions taken by the United Nations Framework Convention on Climate Change will probably have more effect on the terminal business as national governments look for ways to meet their commitments under the Paris agreement. How governments will meet these targets will vary from country to country, but we have seen some evidence that fiscal measures are being deployed to encourage businesses to seek "greener" alternatives.

Here in the UK, we have seen a move towards the use of biomass in our power generation sector at the expense of coal. The theory behind the use of biomass is that by using the by-products (waste products) of the lumber industry, we can generate energy effectively for free and, more importantly, because the trees used are planted sustainably, the new trees will absorb CO_2 as they grow, thus meaning that biomass is carbon neutral. The European Commission has declared that biomass is officially carbon neutral.

In 2016, approximately 14% of global power generation came from biomass out of a total of 18% from sustainable sources (biomass, solar and wind). Biomass produced approximately 50EJ of power (EJ = Exajoule, 10^{18} or quintillion), it is estimated that by 2035 this could treble to 150EJ. With this increase in demand, the danger is that rather than using the by-products of the lumber industry trees will be grown specifically to satisfy that demand. When this happens, the carbon neutrality of biomass is questionable.

Professor Sir John Beddington was the UK government's chief scientific adviser between 2008-2013. He is a senior strategy adviser at the Oxford Martin School and professor of natural resource management at the University of Oxford. In a blog for Carbon Brief at

PORT OF HAMBURG

the end of 2017, he raised the issue of the harvesting of trees specifically for the generation of energy.

He explained that the use of the by-products as biomass results in the fossil fuels it replaces remaining in the ground, which prevents significant emissions. In addition to this gain, the by-products had previously been left to rot, which also generated a significant release of carbon into the atmosphere.

However, if we were to start harvesting trees for energy, this carbon balance is upset. He points out that several studies have indicated that the burning of these trees creates a carbon debt that may take decades to repay.

He further highlighted the relative inefficiency of wood burning compared to fossil fuels. Around a third of the tree is left behind when it is harvested (roots and smaller branches); this is left to rot, which emits carbon. When the wood is burned, it burns at a lower temperature, which combined with the greater carbon intensity means that wood emits four times the amount of carbon than gas and one and a half times as much as coal.

Professor Beddington concludes "a reasonable estimate (based on several studies) might be that every kilowatt hour of wood at least doubles the emissions over a period of 30 years that might otherwise occur even if the alternative were fossil fuels."

It seems to me that governments are going to have to exercise caution on how they encourage the use of biomass if they are not going to find themselves in a situation where they have made the situation worse rather than better.

Back at the IMO, we are approaching the annual meeting of the sub-Committee of the Carriage of Cargoes and Containers (CCC). The fifth session of this sub-Committee will convene between Monday 10 and Friday 14 September. Most of the items of interest are proposed new and revised schedules for cargoes under the International Maritime Solid Bulk Cargoes Code (IMSBC Code). All relevant papers are available in the members section of the website. If you have any comments or concerns, please let me know via email at *ce@bulkterminals.org*.

Finally, as mentioned earlier, our annual conference is being held in Hamburg, Germany on 23 and 24 October 2018. The programme has now been all but finalised and is available on our website (*www.bulkterminals.org*). I hope that we will see as many of our members and potential members at the conference as possible, but please do note that places are limited so book early to avoid disappointment. There are still some sponsorship opportunities: if you wish to discuss them please contact Simon Gutteridge at *events@bulkterminals.org*

WORLD NEWS ROUND-UP

Commentators have tended to be more bullish in recent months, at least as far as prospects for dry bulk shipping are concerned, and the industry is gearing up for the next deadlines in the environmental calendar

Prospects in the capesize segment look particularly promising as the demand for bulk ore supplies continues. Maritime Strategies International's (MSI) dry bulk forecaster suggests that capesize spot rates could rise above $25,000 per day during the fourth quarter of the year, on the back of iron ore demand.

Panamax tonnage also looks set to benefit as a result of shippers deciding to split ore cargoes into smaller shipments and MSI remains upbeat about prospects, but predicts softer coal demand and says that forecasts assume that there will be a good performance as far as scrapping vessels is concerned.

In its latest corporate figures, Star Bulk said: "We are optimistic about the prospects of the drybulk markets as the orderbook is close to its lowest levels of the past 20 years and new regulations coming in effect in the near future will likely keep the supply of vessels in check; this will allow increases in demand to positively influence earnings and values."

WAR FOOTING

One issue that presents more questions than answers is the trade war. BIMCO's chief shipping analyst Peter Sand said recently: "The trade war adds painful uncertainty for the shipping industry, as it distorts the free flow of goods, changes trade lanes and makes it difficult for ship operators and owners to position ships efficiently in the market."

The dry bulk shipping industry has already been affected by the steel and aluminium tariffs. Sand suggests that while dry bulk shipping will by far be the most affected in terms of volumes, both in scheduled and already implemented tariffs, dry bulk products targeted so far only represent a minimal amount of the total seaborne dry bulk trade. Similarly, the containerised goods affected also represent a small amount of the total containerised trade.

SULPHUR CHALLENGE

With a new raft of environmental legislation coming up, the International Chamber of Shipping (ICS) says it is encouraged by efforts made by IMO Member States to resolve some pressing practical challenges ahead of the global implementation of the 0.5% sulphur in fuel cap on 1 January 2020.

ICS secretary general Peter Hinchliffe commented recently that although there is still much work to be done, the most recent discussions at IMO had been positive. "Most important is that governments have acknowledged the safety concerns raised by industry about the use of compliant fuels, including possible incompatibility.

"We are pleased that Member States have accepted their obligations under MARPOL to ensure that fuel is suitable for use and will not pose a safety risk to the ship or the crew, and that IMO has now agreed that these critical issues should be urgently addressed by the next IMO Maritime Safety Committee in December 2017," he said.

"ISO announced that the existing industry standard for marine fuel oils, ISO 8217, already addresses the new 0.5% fuel blends that will be used by many ships to comply in 2020. ISO also advised that it will be providing guidance on the application of the standard to these new blended fuels.

"It will be vital for shipowners and crews to have confidence that new fuels will indeed be safe and compatible before taking delivery, which they will need to start doing several months in advance of January 2020," said Hinchliffe.

COMPLIANCE TEMPLATE

ICS has also welcomed the development by IMO, as suggested by the industry, of a template for ship specific "Implementation Plans", which will be adopted by the Marine Environment Protection Committee in October.

"This template will help ship operators to prepare for implementation and demonstrate good faith in doing everything possible to ensure compliance, which will be important if compliant or compatible fuel is not available in every port during the first few weeks of implementation."

The chamber was pleased by the agreement to apply the 95% confidence factor of ISO 4259 to on board fuel oil samples used for verifying compliance, while retaining the existing absolute 0.50% limit for the MARPOL sample, which is taken during bunkering.

ICS says this should help avoid potential scenarios where the sample taken during bunkering receives an acceptable test result only for the in-use fuel to be found non-compliant.

SECURE FUTURE

Security guidance has been getting the once over with the launch of a new website dedicated to providing comprehensive maritime security guidance to companies and mariners. The new website, *maritimeglobalsecurity.org*, provides security-related guidance produced by the industry as well as links to other useful maritime and military security resources.

"In a world of increasingly complex security risks, it is essential that mariners and ships are protected.

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The new website will be a freely available facility where companies and mariners can access essential guidance and information to help them comprehensively prepare for voyages through areas of security risk," the authors say.

The aim is to ease access for companies and seafarers to maritime security related information and guidance. There are new best practice guides to help companies and mariners risk assess voyages and mitigate against external threats to their safety. These include: *Global Counter Piracy Guidance for Companies, Masters and Seafarers*; *BMP5: Best Management Practices to Deter Piracy and Enhance Maritime Safety in the Red Sea, Gulf of Aden, Indian Ocean and the Arabian Sea* , and the third edition of the *Guidelines for Owners, Operators and Masters for Protection Against Piracy and Armed Robbery in the Gulf of Guinea Region*.

All three publications are free to download and free printed copies of *Global Counter Piracy Guidance* and *BMP5* will be available soon.

CASUALTIES FALL

Large shipping losses have declined by more than a third (38%) over the past decade, according to Allianz Global Corporate & Speciality's *Safety & Shipping Review 2018*, with this downward trend continuing in 2017.

Yet recent events such as the collision of the oil tanker Sanchi and the impact of the NotPetya malware on harbour logistics underline that the shipping sector is being tested by a number of traditional and emerging risk challenges, the report says.

There were 94 total losses reported around the shipping world in 2017, down 4% year-on-year (98) – the second lowest in 10 years after 2014. Bad weather, such as typhoons in Asia and hurricanes in the US, contributed to the loss of more than 20 vessels, according to the annual review, which analyses reported shipping losses over 100gt. "The decline in frequency and severity of total losses over the past year continues the positive trend of the past decade," says Baptiste Ossena, global product leader for hull and machinery liabilities at AGCS.

"Insurance claims have been relatively benign, reflecting improved ship design and the positive effects of risk management policy and safety regulation over time. However, as the use of new technologies on board vessels grows, we expect to see changes in the maritime loss environment in future. The number of more technical claims will grow – such as cyber incidents or technological

defects – in addition to traditional losses, such as collisions or groundings."

New risks emerging in the industry involve the sheer size of ships, new threats and machinery damage risk resulting for environmental moves to cut emissions, as well as containment and salvage issues, the report suggests.

"Shippers continue to grapple with balancing the benefits and risks of increasing automation on board. The NotPetya cyber-attack caused cargo delays and congestion at nearly 80 ports, underlining the threat of cyber risks for the sector," says the report.

Almost a third of shipping losses in 2017 (30) occurred in the South China, Indochina, Indonesia and Philippines maritime region, up 25% annually, driven by activity in Vietnamese waters. This area has been the major global loss hotspot for the past decade, leading some media commentators to label it the "new Bermuda Triangle", the report says, adding that major loss factors included the weather, traffic congestion and lower safety standards on some domestic routes

Cyber incidents such as the global NotPetya malware event have been a wake-up call for shipping, it says, as many operators thought themselves isolated from this threat. Also, new European Union laws such as the Network and Information Security Directive, which requires large ports and maritime transport services to report any cyber incidents and brings financial penalties, will exacerbate the fall-out from future failures – malicious or accidental.

SCRUBBER SURVEY

A survey of Exhaust Gas Cleaning Systems Association members has revealed that scrubber uptake is rapidly accelerating, with the number of ships with exhaust gas cleaning systems installed or on order standing at 983 as of 31 May 2018. This follows recent reports that major ship operators, including Spliethoff, Frontline, DHT and Star Bulk, have opted for scrubbers.

Until relatively recently, the largest installed exhaust handling capacity has been for engine powers in the region of 25 to 30MW. However, the latest data shows that this has been well and truly exceeded by a retrofitted hybrid system for a 72MW container ship engine. Large capacity scrubbers are not confined to retrofits as the maximum size new building installation is a hybrid system for a 65MW engine.

Nearly 60% of all retrofits and new building installation works take place in Asian yards. Unsurprisingly this increases to nearly 85% of new building installs. EGCSA believes that although there has been a surge in demand, yard capacity is not an issue going forward, however other constraints such as the availability of laser scanning specialists and experienced installation teams mean that it may not be possible to pick and choose an installation slot nor coincide a scrubber installation with an already scheduled dry dock in the near future.

STREAMLINING TOOL

The pressure is on for the shipping industry to reduce emissions. In the past few years, both the European Union and IMO have introduced regulations that require ship operators to gather and report their vessels' fuel consumption. To help make this reporting process simple, speedy, and streamlined, DNV GL has introduced a combined reporting and verification online tool.

The EU MRV (Monitoring Reporting & Verification) and IMO DCS (Data Collection System) are designed as the first steps in a process to help the maritime industry reduce GHG (greenhouse gas) emissions from ships. They both require shipowners and operators to gather and submit fuel consumption data, which will be used to track vessel GHG emissions.

"DNV GL has had a verification tool for the EU MRV in place for some time, as the reporting started 1 January 2018, and this has now been extended to also cover the requirements of the IMO DCS," says Geir Dugstad, director of ship classification and technical director.

BLOCKCHAIN MOVE

Maritime Blockchain Labs (MBL) recently presided over the establishment of a consortium to address traceability and transparency in the marine fuel supply chain, bringing together industry actors Lloyd's Register, Precious Shipping, Bostomar, BIMCO, International Bunker Industry Association and GoodFuels.

Following extensive research, MBL has identified the bunker industry, with its multiple, complex transactions, as an ideal use case where blockchain technology can increase transparency and create better compliance and stronger governance.

The consortium will evaluate how blockchain technologies could help to provide an efficient, tamper-resistant and auditable chain of custody on quality and quantity recording activities, together with a reputation system of the compliance of fuels prior to purchase, benefitting both buyers and regulatory bodies.

Such characteristics help to provide greater confidence in the fuel being purchased, ultimately resulting in reduced safety risk and creating a more trustworthy framework for accurately monitoring emissions from shipping such as sulphur, and carbon.

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RED DOT AWARD FOR NEMAX® GRAB

COMPANY NEWS

Generally awarded to consumer products on the cutting edge of innovative design, one of the Red Dot Awards this year has gone to an unusual candidate: the nemaX® grab from Nemag. Previous product design winners have included the iPhone, the BMW 5 series and the GoPro Hero. This is the first time in history that an industrial grab has received this internationally acclaimed distinction. The expert jury was won over by the outstanding design quality exemplified in the innovative nemaX® concept.

HIGHER PRODUCTIVITY, LOWER MAINTENANCE

The patented nemaX® is the most productive grab on the market, increasing the entire productivity of a dry bulk terminal by at least 10%. Its optimised closing mechanism helps it close 20% faster, facilitates ergonomic maintenance at safe heights, and reduces spillage.

The nemaX® has 70% less moving parts and the lowest maintenance costs on the market. The design capitalises on the mechanical properties of high-tensile steels by preventing multi-axial stresses in the main construction. The resulting lean, graceful design has a minimum of joints and welds that are vulnerable to fatigue, ensuring cost-effective operation and maintenance.

EVALUATION PLATFORM FOR GOOD DESIGN

Dating back to 1955, the Red Dot Award is presented in several categories, including product design, communication design and design concept. In 2018, designers and manufacturers from 59 countries submitted more than 6,300 objects to the competition. True to the motto "In search of good design and innovation", a jury assessed the products individually based on the original.

The strict assessment criteria, which include level of innovation, functionality and durability, provide a frame of reference which the jurors then complement with their own expertise. The nemaX® grab has won this year's Red Dot Award for Product Design, which is most frequently presented to consumer products.

MULTI-AWARD WINNER

As Professor Peter Zec, PhD, founder and CEO of the Red Dot Award, explained, "Success in the Red Dot competition is proof of the good design quality of the products and once again shows that companies are on the right path. All of the products are characterised by outstanding functionality. This demonstrates that the designers have understood their clients and their needs." The Red Dot Award is not the only recognition conferred on the nemaX®. Its solid technology and ground-breaking design also brought it to the attention of International Bulk Journal, a leading trade publication that presented the grab with the Innovative Technology Award 2017.

WINNING DESIGNS SHOWCASED INTERNATIONALLY

The nemaX® grab will be featured in the Red Dot Design Yearbook 2018/2019, which showcases all of the year's winning products. In addition, the winners will be prominently profiled in the Online Exhibition, in the Red Dot App and on Red Dot 21.

nemag.com/nemax

ON THE ROAD TO REGENERATION

As Redcar Bulk Terminal and PMAC Energy link up for a £250m waste-to-energy plant – bringing much-needed jobs and business to the area – we talk to Garry O'Malley, RBT's general manager and PMAC managing director Rob Lewis about the project

In a major boost for South Tees, plans to build a £250m waste-to-energy plant at Redcar Bulk Terminal (RBT) have been announced, with PMAC Energy securing 25 acres of the terminal's land for the development. Garry O'Malley describes the PMAC deal as "hugely significant, not only for our businesses, but for the whole South Tees region. We've worked closely with PMAC Energy on this project for a number of years and it's another reflection of the continued resurgence of Redcar Bulk Terminal and this site.

"Like many others on Teesside, we were dealt a hammer blow when SSI steelworks closed – so much so you could say RBT's mere survival is a success in itself. We're grateful for the strong support we received during these difficult times, in particular from Greybull, which provided us the capital and energy required to turn the corner. The fact we're seeing significant growth, diversifying our business and attracting new companies to the Tees is an incredible achievement.

"Projects like this – which could bring hundreds of millions of pounds and many valuable jobs to Teesside – are heralding the start of a new era for RBT

and our employees. We've a healthy business pipeline and the continued investment in our operations from British Steel and Greybull means we can continue to grow with confidence and pace," he says.

RBT's road, rail and port facilities offer access to both the UK and European waste markets. Up to 500,000 tonnes of refuse-derived fuels would pass through the plant each year, with 150,000 tonnes of this exported to cement and energy plants across the world.

The plant would create up to 400 much-needed local jobs in the next three and a half years. These opportunities could start in as little as 12 months' time with the construction of the plant and would continue – following a two-and-a-half-year build – with the availability of up to 100 full-time operational jobs.

Rob Lewis says: "RBT's superb port facilities and road and rail links make it the perfect location for this plant. Not only does it give us the logistical advantages of being on the River Tees, the area also provides us with the workforce we'd need to manage the volume of waste coming into the plant and the quantity of fuel being created."

Working in partnership with RBT on a 25-year lease, the PMAC Energy facility would recover and treat municipal and commercial waste to create fuel for the renewable energy sector, capable of providing both heat and power. Generated fuels would not only power the on-site waste-to-energy plant, but also be sold into the export market.

Lewis explains that PMAC has been in the business of exporting waste derived fuels to Europe for some time and he was put in touch with Garry O'Malley just over two years' ago, shortly after SSI steelworks went into administration.

"When you get on to the site at Redcar Bulk Terminal, the opportunities there were just unbelievable for someone like myself looking to develop a waste-to-energy facility because we are not just supplying other people, but wanted to build our own facility to supply ourselves.

"The aim is to get the waste supplies specifically from the UK, but only 60% will be used in the on-site waste-to-energy facility, with the rest being manufactured, baled and used for the export market.

"The export market will still be very important for the UK, I foresee, for the next 20 to 30 years," he says. "The UK is simply not building enough infrastructure for all the waste diversion required from landfill, therefore I think the export market will have a strong role to play in the UK for some time yet."

In spite of Brexit, he thinks the UK will remain in line with EU on waste regulations. Most of the company's waste-derived fuels tend to be transported to Europe. "We would look wherever the market is commercially viable," he says, although the Netherlands is the biggest user.

The company is looking to set up its own terminal in Amsterdam with a view to importing material into the Netherlands for its waste-to-energy burners and also to export out of Amsterdam products such as wood waste-derived fuels, for which it has contracts in countries including Finland.

The Netherlands investment would include a terminal, but not a waste processing facility as there is already plenty of waste energy infrastructure in Europe – an area where the UK lags behind.

Unlike many other energy projects across the UK, the PMAC Energy plant would be completely free from government subsidies and financial support, with all income generated purely from waste gate fees and the sale of electricity. Following commissioning, the plant would operate as a 100% commercial entity.

Government support for biomass in the UK, though, is "enormous" and it would be impossible to function without that support unless income was coming from heat and electricity. There is much information out there about how much waste there is going to be in the market because of a decline in landfill. "There is anything between 6-9m tonnes of waste, which is not going to have a home by 2030. We are going to take a chunk of that out with this facility, but there will still be huge amounts," Lewis explains.

Also to be taken into consideration is whether proposals under consideration elsewhere will actually be built and whether the technology they use will actually work. For the Redcar facility they are planning on 600,000 tonnes input of which 350,000 will be put into the on-site waste-to-energy facility for the production of electricity. "We are also going to use the heat in the materials recycling facility on the front end to process more waste. If you have a lot of waste that is high in moisture, we will be able to handle it." The excess waste at the end will be baled and exported.

The material recyling facility on the front end will take various waste streams, including construction, industrial and general waste, as well as liquids and sludge for dry blending. Different customers will require different grades of RDF [refuse derived fuel] and RBT's facility will also manufacture its own and go directly into feeding the boilers.

There will be an ash plant at the back end and ash will be recycled and metals extracted with the resulting ash being used as aggregate. The ash plant could offer opportunities for Redcar in the sense that "if we over-engineer the ash plant we can import ash over the dock as well," Lewis says.

The venture is already looking at the possibility of supplying other UK processors. As coal becomes less of a fuel source in the UK there is less bottom ash available in the aggregate market, Lewis says, therefore "we will be looking to fill that gap".

Following the collapse of SSI in 2015, O'Malley says the terminal basically had to start again with a "blank sheet of paper". It had a lot going for it, however, being the deepest port on the east coast, and having a good rail infrastructure and land for development. Coming up with a selling proposition was not easy, but "when you have got a first-class facility it does make it easier".

Redcar put together a five year plan covering how it planned to market the facility, "which we have done. We have brought in new customers involved in

coal and granulated slag and links to the cement and aggregates industry. We have tapped into numerous bulk markets," O'Malley says.

Last month, Redcar signed a materials handling agreement with Sirus Minerals, which involves providing port and ship loading services for up to 10 million tonnes per annum. O'Malley says that Redcar had been in discussions with Sirius for a number of years, but the closure of the steelworks gave the capacity to handle up to 10m tonnes of minerals and enter into a long-term lease agreement. The business outlook is "very healthy" as the company goes forward with its five-year plan.

While Redcar already has some good business partnerships in place, there is still land and capacity available for new investment going forward, O'Malley says. "We have still got to go for further expansion and to add more products and that is ultimately our plan, obviously with the assistance of British Steel and Greybull, which have supported the business over the past few years and enabled us to invest in infrastructure and equipment for us to grow as quickly as we have."

He says that the stipulation he has always had with regard to new investment in the Redcar facility is that "any new customers that come to RBT have to be port-related, so there has to be an added value in using the wharf." The lease of land to Sirius, for example, is made on the back of a material handling agreement. Every project done, and there are quite a few in the pipeline, has to have a port element.

While the BMAC contract is for 25 years, this is not necessarily the term of all the contracts signed. "The Sirius minerals agreement is actually a 30-year agreement, which is what the customer asked for." Redcar, O'Malley stresses "will look at everything on its merits. It really does depend on customer requirements".

Redcar has been investing heavily in equipment in the past year. "Where we need to invest in equipment and infrastructure, it is all linked to new contracts." People will be employed at the new facility with pretty much the same skill sets as those who were employed at the steel works. There are also plans for an apprentice programme to train the next generation of workers for the new facility.

Redcar itself, O'Malley explains, has a mature apprenticeship scheme and retained its apprentices in the aftermath of the SSI collapse "as we see them as the future of our business".

As far as the Brexit question is concerned, for RBT the mainstay is business with China and Japan, although there is obviously business with Europe as well. This does not take into account, however, the possible effect on RBT's parent British Steel.

Lewis also does not see Brexit having a effect on the new terminal's activities. If the UK government decides to put an export tariff on any waste derived fuels, all it would do would be to push the gate fee up to cover it, he says. "Nobody in our market is expecting any change and we will soon adapt if there is any change. It would be financial and it would hit councils because they would have to pay more to get rid of their waste so it is in nobody's benefit to play with the market as it is. The majority of the material we would be bringing in is UK based. In 20 years' time that might be different. We are so well placed at RBT it could come from anyway," he says.

RBC's diversity of clients (there are 13-14 at the moment) also means that it does not have its eggs in one basket, as was the case when it was a steelworks. Lewis stresses that RBT would not be where it is today without the valued support it has received both from British Steel and Greybull: "I can't emphasise that enough."

ARTIST'S IMPRESSION OF THE FUTURE OF THE SITE

GRABS AND BUCKETS

COMPANY NEWS

Negrini, established in 1967, specialises in engineering and manufacturing a comprehensive range of grabs and buckets for rope machines and crawler mounted cranes. They are employed to do many jobs, including the following:

» ELETTRO-HYDRAULIC AND HYDRAULIC ORANGE PEEL GRABS to handle rocks, waste for recycling and loose material. To be operated they require crawler mounted cranes and, in general, boom lifting machines.
» TWO or FOUR ROPE ORANGE PEEL GRABS to handle rocks and waste to be recycled. To be operated they require crawler mounted cranes or, in general, boom lifting machines.
» ELETTRO-HYDRAULIC AND HYDRAULIC CLAMSHELL GRABS for the handling of any loose material as well as for dredging work in confined areas such as near jetties or quays.
» DUAL SCOOP GRABS to handle loose material, including the load inside ship cargo compartment. For operation they require 2 or 4 rope boom lifting machines or crawler mounted cranes
» -RADIO CONTROLLED SINGLE ROPE GRABS meant to handle any loose material. The dust and waterproof radio controls opening of the bucket. They can be operated by any kind of crane..
» ENVIRONMENTAL HYDRAULIC CLAMSHELL BUCKET to load polluted mud especially for the sea or river ground. The two peculiarities of this range of buckets are that at lifting the two sides copy the ground they contact with, hence leaving it flat so the digging depth is automatically controlled. The second are the valves on the upper part that allow water to flush away without releasing polluted mud in the water.

ACTIVITY

The reliability of NEGRINI srl lies in its professional expertise and experience acquired by the entire, highly specialised workforce.

Our technical department is always on hand to tackle and solve any technical problem, explaining and motivating the solutions adopted. When necessary, NEGRINI srl calls upon partners to find solutions to the most complex design issues.

Our company currently has twelve employees and when necessary, calls upon carefully selected external partners. The company has two facilities covering an area of about 2,000 square metres and a large service area.

PRODUCTION SYSTEM

Every customer request is carefully assessed for feasibility from both a technical and capacity point of view.

The requested elements, including the drawings, are examined and planned in collaboration with the head of department to guarantee delivery times, reliability and the best use of resources.

The technical data, including the drawings, are entered into a Cad-Cam electronic processing and 3D CAD solid modelling system for a more efficient management of the product and rational organisation of the machinery.

Before shipping occurs, a final test is carried out by the head of production, overseen by the company owner.

The company's policy is to supply products to firms operating in the excavation and handling industry, developing customised projects.

All products adhere strictly to the technical specifications and drawings and are sourced from reliable and well-established suppliers. On specific request, we can provide individual certificates and reports.

LESSENING THE LOADS

With a range of challenges facing transshipments, companies have provided a range of grab solutions to ensure smooth operations

Transshipment is clearly a key factor in the whole cargo shipment chain, involving the movement of dry bulk cargo to an intermediate destination before it is delivered to the final user and it may be used both for consolidation of cargoes or deconsolidation.

Although transshipment may take place shoreside, there is also an argument in favour of offshore transshipment using grab technology, Riny Stoutjesdijk, sales manager at Nemag, points out. The company has developed the nemaX four-rope grab especially for transshipment situations at sea.

So what are the challenges of seaborne operations? Apart from management issues on board, challenges could be operational, for example avoiding congestion and demurrage costs of ingoing and outgoing vessels due to slippage in estimated departure or arrival times, he says, or availability of the installation due to bad sea state and other meteorological conditions.

"Shipowners need to ask themselves 'How do I keep my installation going at open sea under severe conditions and

COMPANY NEWS

WE COVER EACH STEP

Bedeschi covers each step of the project execution from the feasibility study and basic design to the assembly, installation, start-up and for any need after commissioning, while the plant is in operation.

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Bedeschi offers TAILOR MADE solutions with products that rate best in the market in terms of energy consumption operational costs and pollution control.

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BEDESCHI TRANSHIPPER

without too much technical support?'" says Stoutjesdijk.

Financial issues also need to be considered. "As the handling rates are under pressure due to overcapacity in the dry bulk market, the question needs to be asked how to ensure maximum efficiency and lower costs per tonne of transshipment," he says.

Nemag has highlighted the fact that many high-performance marine transshipment hubs are equipped with four rope (grab) slewing cranes. "The reason for choosing four-rope cranes is they provide significantly higher efficiency compared to, for instance, slow-moving, single line derrick cranes equipped with slow operating remote controlled or electro/ hydraulic grabs.

"In most cases, these four rope cranes are standardised to a high degree, with specific speeds and accelerations, depending on the make and type," says Stoutjesdijk.

"Within these constraints, the productivity of any transshipment crane depends entirely on the productivity of the grab. Any grab, regardless of type or brand, will have a given deadweight and payload. The general idea is that the lower the grab's deadweight, the higher the payload and the higher the productivity."

The grab's opening and close time should also be considered, he says. "Productivity equals payload times cycles per hour. The number of cycles per hour is the result of the hoisting and slewing time of the crane plus the opening and closing time of the grab. Given the speed of the crane winches, the closing time depends on the grab's closing cable withdrawal length.

"As slewing cranes can only start to slew after the grab is fully closed and lifted out of the cargo, the opening and closing time of the grab is an important factor in the entire productivity. Especially at small slewing angles (which operators prefer to have in order to achieve the shortest possible cycle time), the speed of the grab has a dominant impact," he explains.

Nemag claims nemaX has a 15% lower deadweight compared to similar clamshell grabs, as well as a 20% shorter cable closing length. The result is a higher payload, a significantly shorter cycle time and at least 10% higher productivity for the entire transshipment process.

Other advantages include increased productivity in the intermediate and clean-up phase. The nemaX extends the free-digging rate past the intermediate phase and reduces the clean-up phase, thanks to a 30% larger footprint and horizontal digging path.

A typical floating transshipment crane deals with the pendulum motion of the pontoon and crane. This is the result of crane sway due to shifting centres of gravity caused by changing weights, combined with changing outreach of the crane, sea state and swell. These considerations can lead to harmful peak loads in the crane and productivity losses.

AHEAD OF THE CURVE

Where bulk ports are concerned, the amount of cargo that can be lifted at a time is increasingly important and therefore grab curves need to be optimised. As bulk carriers have increased in size, so too have expectations of port technology's potential performance and operators of bulk ports have the same expectations as operators of container ports.

If the crane grab curve increases, so does efficiency of bulk handling of commodities at the port. Analysis by Liebherr suggesting that only 70% of grab capacity was used led to the development of the its SmartGrip system, which recognises the density, granularity and compression of the product and adapts its behaviour accordingly.

Shannon Foynes Port Company in Ireland recently took delivery of Liebherr's LHM 420 mobile harbour crane for the handling of bulk products. It is the largest crane in the port and its added lifting capacity doubled the port's then-current capacity of 124 tonnes per single lift.

The Port of Vado Ligure in northern Italy is also in the process of expanding its capacities and acquired Liebherr equipment as part of the programme. It has commenced a project to deepen the waterways in the port area to between 11m and 14m, as well as to add new piers in the bay area. Italian dredging contractor Co.Ed.Mar has equipped its self-propelled barge with a new Liebherr Type HS 8130 HD duty cycle crawler crane, with a hydraulic clamshell bucket. Thanks to the optimum grab capacity of 6m^3, quicker movements and larger outreaches can be achieved during operation.

Co.Ed.Mar attains cycle times of only 45 seconds when dredging materials from the seabed and 25 seconds when unloading the vessel. This results in an average turnover of some 400m^3 per hour, equal to the barge loading capacity.

Liebherr says the company picked the unit because with a total weight of approximately 120 tonnes including crawlers, it can be quickly and easily positioned on or off the barge, thus providing the owner with a high level of flexibility and the option to use the machine in different areas. The duty cycle crawler crane can be fitted with grabs of capacities up to 10m^3 for dredging and materials handling, and there is also a range of attachments for deep foundation and lifting applications.

Konecranes' mobile harbour cranes, meanwhile, also include high performance grab curves and four-rope grab cranes. The Model 6 mobile harbour crane for European Bulk Services, for example, provides a maximum lifting capacity of 100 tonnes, an outreach of up to 51m and a 50-tonne grab curve.

Konecranes recently received an order to deliver two industrial cranes with specially designed spreader clamps to CMPC Celulose Riograndense in Brazil.

The company produces pulp from eucalyptus short-fibre cellulose and uses cranes to load pulp bale units to ships at the factory landing. The new Konecranes equipment will be designed for the load of two million tonnes of pulp per year.

The order consists of two tailor-made cranes with specially designed, adjustable spreader-clamps and specific smart features, including target positioning. The cranes are operated with cameras and sensors from a movable cabin, which help to enhance operational safety. The cranes can handle loads of up to 16 tonnes.

"These cranes will help to improve safety and efficiency of the customer's pulp bale-loading process," says Arto Hujanen, director for paper and forest industry at Konecranes.

"Several semi-automatic features will assist the crane operator in moving pulp fast and accurately. These features were selected after we had studied the customer's loading process carefully. Once again, understanding the customer's process was the key factor when selecting the right solution."

The first crane will be delivered to Celulose Riograndense in December this year, with the second one following by April 2019.

HANDLING WITH CARE

Loading and unloading operations present terminal operators with a number of challenges – not least when dealing with transporting the bulk commodities that continue to be in such high demand, most notably in China

Keeping costs to a minimum is essential for any competitive port facility. Therefore, recent technological developments are upgrading facilities that may be many years old, but also improving methods to ensure safer handling and a better quality product.

One example is Terminal Maritimo Ponta da Madeira (TMPM), a private concern near São Luiz in Brazil owned by commodities giant Vale.

Last year, 168 million tons of iron ore were exported from there (approximately 46% of Vale's iron ore production in 2017). TPTM is one of the few deep-water terminals able to serve the 380 to 400,000dwt Valemax ships.

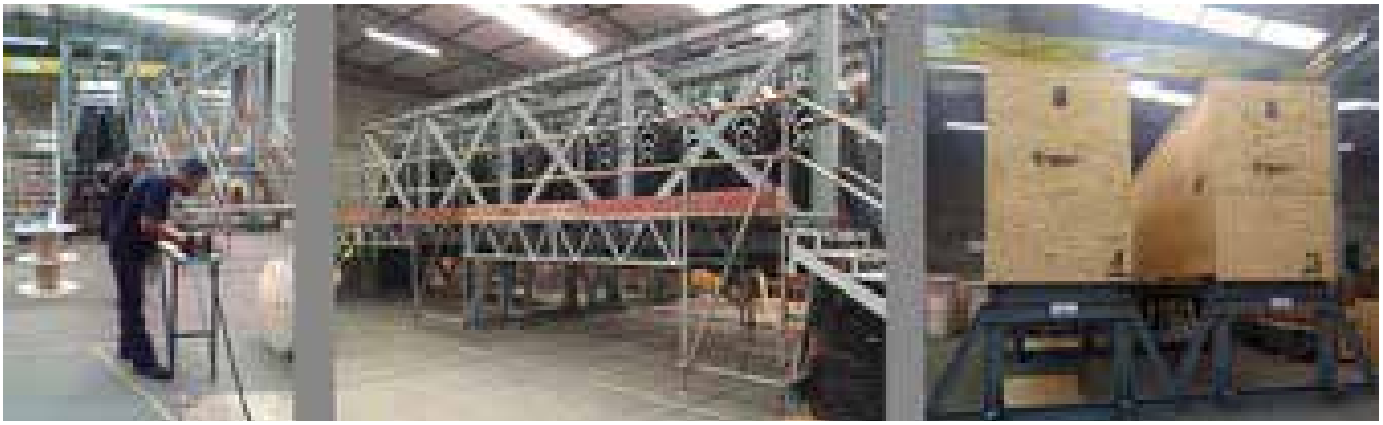
Conductix-Wampfler has been supporting Vale's operations with a products ranging from motorised reels for stacker and reclaimers, to trailing cable reels in electric shovels and festoon systems for stacker and ship loaders.

One key issue that was examined was how to ensure downtime, when replacing key pieces of equipment, would not affect productivity. Reducing downtime and maintenance time frames were critical to enhance productivity.

Another problem to be tackled was how to upgrade the festoon systems that had already been in place for a number of years. The two legacy festoon projects were interconnected through a cable package with continuous lengths all the way down to the substation. The individual replacement of cables and trolleys was very time consuming.

"Users were used to having problems and downtime with the legacy festoon system. The idea that a new festoon system could run with minimal corrective maintenance seemed revolutionary," says Cleuber Souto, head of Vale's implementation team.

"It is very satisfying to see five months after the installation that a significant improvement in the performance of the machine could clearly be evidenced by our team. It changed our perception, by showing that a festoon system can be run with minimal corrective maintenance," says Souto.



MACHINE, REPAIR & SERVICES

COMPANY NEWS

Established in 1977, MRS Greifer GmbH is a leading engineering company providing design, manufacture, supply and after sales services for grab buckets up to 30 m³ capacity. Our commitment to continuous research and development ensures our grabs are world leaders in terms of technology, quality and performance.

With five decades of experience in the design, manufacture, research and development of grabs, plus an extensive after-sales service backed by our team of highly skilled engineers, MRS Grabs has clients from every corner of the world.

We design grabs to fully meet the needs of our clients and the parameters within which they work, producing equipment capable of unloading all kinds of bulk cargo. Our machines include the latest features and are of optimal weight, ensuring an exemplary performance for a longer period of time. When it comes to hydraulics and other outsourced parts, we only use trusted brands so the highest quality is ensured.

Each grab is manufactured under the industry's strict quality controls, according to the QAP approved by our experts. We are only too aware that delays in shipping can result in exorbitant costs so we keep a full stock of spare parts, and our committed after-sales service team is available to see to all our customers' needs in the quickest possible time.

With grabs to handle bulk, logs, scrap, underwater dredging and more, please don't hesitate to contact us to talk through your needs.

MRS GREIFER

MRS Greifer GmbH
Talweg 15 - 17
74921 Helmstadt
www.mrs-greifer.de
export@mrs-greifer.de
Phone: +49 7263 9129-15
Fax: +49 7263 9129-12

Meanwhile, work has been continuing at the port of Chernomorsk in the Ukraine on a new grain terminal where Kernel, one of the country's largest producers and exporters of sunflower oil and supplier of agricultural products to the world market, has been implementing plans to increase the capacity of goods storage.

Bulk handling specialist Bedeschi has provided slewing shiploaders with a capacity of 2,200 tonnes per hour for the handling of wheat, corn, barley and flour, which use enclosed conveyor belts. All the machines are fitted with dust spillage systems and are equipped with three different types of filters and a telescopic chute that allows the equal distribution of the product evenly throughout the vessel to be loaded.

> "Our experience and expertise in bulk material loading was a significant factor in winning this contract

Over in Australia, Kerman Contracting has been awarded a $30m contract for a new ship unloading facility for the Port of Newcastle in New South Wales. This design and construction contract involves the demolition of two existing ship unloaders and associated conveyor structures to be replaced with a new high-capacity ship unloader, new conveyor structures, associated wharf upgrades and electrical systems. The project is expected to be completed in December 2019.

The new ship unloader will be the first of its type in Australia and will provide multi-purpose bulk commodity unloading efficiencies far superior to machines currently operating in the country, the company claims. "We have worked closely with Tenova/Takraf to develop the ship unloader that satisfies all of Port of Newcastle's requirements", explains Kerman managing director Chris Kerman. "The ship unloader will be a jib grab slewing style machine."

Meanwhile, Siwertell has secured an order for a ship-loading system from Irish mining company, Boliden Tara Mines. The specially designed system will serve the company's new terminal located in Dublin Port's Alexandra Basin, ensuring close to zero dust emissions for the operator.

"Boliden required a flexible system capable of handling a variety of cargoes and a wide range of vessel sizes, but with a very strict approach to dust emissions," explains Peter Göransson, sales manager at Siwertell.

"Our lengthy experience and expertise in bulk material loading was a significant factor in winning this contract, including the fact that no efforts were spared in designing a triple-enclosed loading system that will ensure as close to zero emissions as technologically possible for the operator.

"A high loading capacity, combined with easy system operation and low service and maintenance costs, were also significant factors in Boliden's decision to invest in Siwertell's market-leading technology. Additionally, it complies with best available technology and reference document (BREF) regulations," adds Göransson.

The new system comprises a triple-enclosed belt-type ship loader, with luffing and slewing capabilities, a reversible shuttle-belt conveyor with dual remotely-operated connection points, as well as a triple-enclosed jetty and overland conveyor.

It will handle zinc and lead concentrates, which are transferred from rail wagons to a receiving storage building. From here, a conveyor belt leads to a new quayside facility in Alexandra Basin.

Siwertell designs are well-suited for sticky and hard-to-handle materials and the new system will be capable of loading ships of up to 10,000 dwt at a continuous rated capacity of 600 tonnes per hour.

"Based on our designs and with production and construction supervision as a part of the delivery scope, Siwertell, together with local partners, will have full control of the project from design to handover," continues Göransson.

"With carefully-selected components from Swedish and other European sub-contractors, we will deliver an efficient, reliable, high-performance system with low operational and maintenance costs."

The steel structures for the ship loader will be produced in the Far East and equipment will be mainly supplied from Sweden. The overland and jetty conveyor will be produced locally in Ireland, with the conveyor equipment supplied from Europe. The system will be erected and commissioned at Dublin Port in partnership with an Irish company and is expected to be fully operational by August 2019.

Dublin port launched its revised development strategy for the years to 2040 earlier this year and the port's capacity will be increased to cater for a growth to an ultimate capacity of 77m gross tonnes by 2040, rather than the 60m gross tonnes originally proposed in 2012.

Commenting on the revised plan, Eamonn O'Reilly, chief executive at the port, said: "We have identified a series of projects that will bring the port to its ultimate capacity by 2040 and, in doing this, support the objectives of Project Ireland 2040.

"Achieving sustainability is a considerable challenge and we are committed in Dublin Port to doing that in the case of port operations," he says. "We will continue to work to achieve a re-integration of the port with the city. Next year will see construction start on a 4km greenway for pedestrians and cyclists on the northern fringe of the port overlooking the Tolka Estuary.

"In the meantime, work is continuing on the Alexandra Basin Redevelopment Project and on other projects, and we will invest €132m in port infrastructure this year alone."

SPREADER TO THE GLOBAL MARKET

COMPANY NEWS

As the world leading independent spreader manufacturer, Swedish ELME Spreader supports companies worldwide with container handling solutions to make their work easier and more profitable. Over a period of four decades, their customers have attached over 18,000 ELME spreaders to lift trucks, reach stackers, straddle carriers and cranes.

ELME Spreader was formally established in December 1973 by Gösta Karlsson, a 25 year old mechanical engineer with a dream of running a business of his own. That dream has now, four decades later, turned into a multi-million dollar organisation employing 200 qualified people who develop, design, produce, market and service over 1,000 spreaders annually.

What hasn't changed is that every spreader is still built at the plant in Älmhult – from start to finish it's an all In-house production. In Northern Europe that concept is rather unique, but the beneficial reason for this is simple and easy to understand – it gives ELME 100% control over the production and the final product quality. And President Gösta Karlsson, now at the age of 69, is still very much active in the daily operations and strategic development of the family run company.

While all production remains in Sweden the two subsidiaries in Shanghai and USA enable ELME to give a high quality service to customers on seven continents – both recognised OEM manufacturers and end users.

A WIDE RANGE PRODUCT LINE

The ELME spreader product line covers spreaders for truck, crane and straddle carriers, with a considerable share of the business related to mobile truck sector for mast trucks and reach stackers. In addition to this ELME offers a wide range of piggyback slave attachments and special equipment, such as spreaders with tilting function, tool changer and slab handler, together with the concept of approved spare parts – ELME Genuine Parts.

The ELME top lift spreader models 327 (fixed, 20ft) and 817 (telescoping, 20-40ft) are available with tilting function for handling of laden containers with e.g. grain, wood chips and other bulk material where tilt operation is required. Both models are designed for mounting on reach stackers and available in 45° vs. 60° version. Standard capacity for model 327 is up to 32 tonnes (lifting/tilting) – standard capacity of model 817 is up to 45 tonnes (lifting) and 32 tonnes (tilting).

ELME™
Swedish Spreader Systems

ELME Spreader AB
P.O. Box 174
343 22 ÄLMHULT
Sweden
Phone: +46 476 55 800
Email: sales@elme.com

ARE WE READY?

Cyber security is one of the biggest issues facing shipping at the moment. We talk to Andrew Fitzmaurice, chief executive of Templar Executives, on the steps that the industry should be taking

How prepared is the shipping industry for the new cyber regulations due to land in 2021? Shipowners may not actually realise they may be penalised by charterers if they do not have adequate cyber security in place or don't comply with new regional regulations, a point addressed by Andrew Fitzmaurice, chief executive of cyber security supplier Templar Executives.

According to Fitzmaurice: "The maritime industry is definitely starting to take note and there is evidence that it is actively addressing its readiness for the new IMO regulation enforcement in 2021. Indeed, as shipping companies become increasingly reliant on technology to conduct their day-to-day operations and seek operational efficiencies, good business processes will drive a competitive edge and enable cyber resilience.

"However, it is also going to need effort from the regulator and maritime organisations to ensure that they are ready for their first year of compliance from the start of 2020."

Fitzmaurice explains that alongside industry-specific regulations there is also the introduction of flag state rules, which will help provide the mandate for shipping companies to address cyber as an essential business function. Maritime, for example, is one of the regulated industries in the Singapore Cyber Security Act introduced earlier this year; this will force companies with operations in this major maritime hub to address cyber security.

The introduction of this Act comes at a similar time to the introduction of the lesser-known EU Network and Information Security (NIS) Directive, which also includes maritime as a regulated "operator of essential services".

"The global maritime sector is part of a nation's critical infrastructure and all stakeholders across the maritime industry have a duty to stand up and improve their holistic cyber resilience. This is no different than the ask from other sectors such as finance, which has had to work together and share information; they have learned the hard way that by working together they are stronger than the sum of their parts," says Fitzmaurice.

"Whether charterers decide to penalise a company for not having adequate cyber security in place will be interesting to follow. However, what is certain is that as public awareness and regulatory pressures increase, if a company cannot demonstrate that it is

taking the necessary proactive measures to protect information and data, it will be at a disadvantage against companies out there that do. It is the companies that take proportionate measures who will gain a competitive edge and continue to attract business."

Outside of regulations, incidents such as Maersk, Clarkson's and, more recently, COSCO making international news mean that people are taking note and those that don't take action cannot claim to have a defensible position should an incident occur, Fitzmaurice warns.

"It is worth noting that even though Maersk was not an intended target and collateral damage in the NotPetya attack, the impact to its business has nonetheless had a real and damaging effect," he says.

Maersk estimates the incident has cost it £250-300m and their chairman Jim Hagemann Snabe recently highlighted: "It was an important wake-up call. We were basically average when it comes to cyber security, like many companies."

So are players aware of the issues or the impact on their business if they are attacked and is the industry complacent about the dangers, both to companies and personnel, or unprepared to pay for the costs of cleaning up its act? Fitzmaurice says that Lloyd's of London has estimated the global cost of a serious cyber attack to be more than $120bn (£92bn) and the threat from cyber crime is growing alarmingly.

In Templar's assessment, while organisations are aware of the impact, in the past a company could have been complacent about the risks. However, the risks today from both collateral and targeted damage are clearly recordable and it would be remiss if this agenda was not attracting boardroom attention.

"Cyber security needs to be embraced from high up in the company to drive a culture change in the maritime industry. This was echoed by a statement from Maersk's chairman, saying: 'We have to plan to come in a situation where our ability to manage cyber security becomes a competitive advantage.'

"It is acknowledged that margins across the maritime sector are tight and there may be a lack of clarity in an organisation on where funding should be focused, but unless the board understands the business benefits of investing in cyber security, no money will be spent — or it will be spent ineffectively. The Maersk incident also demonstrated that post-incident recovery is a significant business issue," Fitzmaurice says.

To sum up, he believes both organisational and cultural changes need to be embraced at pace in order for a business to work as one team and provide the best cyber resilience possible given the finite resources available to address these concerns. "Education and training are at the heart of these changes and, in my experience, it remains a leadership issue."

Some cyber security firms believe that technology, not training is the solution to the problem. So does Fitzmaurice believe shipping companies are aware that 70-80% of cyber problems can be solved with good cyber hygiene?

"Cyber security best practice does not need to be expensive. Cyber security training for all employees backed up by a comprehensive suite of policies can be a quick win that sets organisations on the road to cyber security maturity and ultimately cyber resilience for their business.

"Although I would like to believe that shipping companies are aware that good cyber hygiene is vital, in our experience, some of the basic cyber terms are not understood by board members let alone the workforce at large," he continues. "Consequently, it can be difficult to drive these effective and at times simple initiatives without a base level of understanding.

"It is widely stated that the majority of times malware gets on to a vessel is through the use of removable media by crew members. Education and awareness around areas that are known problems across the sector would go a long way to solving some of the most widespread and common issues. Initiatives such as 'securing the bridge' are a good example of best practice.

Ultimately, these initiatives need to be led from the top, the board of a company and a captain of a vessel need to lead by example," he explains.

Although awareness and training are key, for a mature approach to cyber security, businesses need to adopt a layered approach consisting of people, processes and technology — technology will never be the panacea by itself.

It is fairly common for people to say that shipping trails behind other industries on key issues, so is cyber one of them and are owners/operators aware of how vulnerable they are, given the value of the industry and its importance to the world economy— as well as the tight margins within which the industry operates?

"I have been working with the sector for many years now," says Fitzmaurice. "It is still a fact that the maritime industry is not as prepared as other sectors, such as financial services, which are much more mature with regards to the cyber agenda. I believe that 2019 will be the year when cyber security will gain greater traction within the majority of the global maritime industry, but it will take effort from regulators and all those operating in the sector.

"As mentioned, the past year has seen some really high-profile incidents to highlight the adverse effect poor cyber security can have on the maritime sector and the supply chain as a whole," he says.

Does he think maritime operators are aware of the dangers of attacks through

their supply chains, as opposed to through individual companies directly?

"With such large capital investments tied up in high-value shipping, any loss of time, assets or unforeseen damages will have a direct impact on the bottom line and these compromises could come through third parties. Shipping companies need to be able to demand the same high cyber standards from their supply chain that they would expect of their own team," he adds.

"The maritime sector is vital to moving goods globally and it is inevitably intertwined into numerous other supply chains for other sectors. The effects of the disruption to this supply chain flow from an attack on a maritime business itself, or on its supply chain, could have serious consequences, especially considering the already very tight margins existing within the sector.

"Business interruption and cyber risk commonly occur concurrently; an organisation is only as good as its weakest link," he continues. "It is likely that in the future, companies further up the supply chain will start to seek assurance the maritime companies they partner with are not the weak link in their supply chain due to not addressing the cyber risk. "

In addition, Fitzmaurice warns, affected organisations may not be able to claim on insurance for lost business if it is found to be directly because of a cyber attack due to Exclusion Clause 380. It may be feasible through tight contracts that shipping companies may start demanding compensation from their supply chain if they are the cause of the business disruption.

The industry often speaks of sea blindness. Does he think this works both ways and the industry is too isolationist? "Currently, there is very little reporting of cyber incidents throughout the sector because there is no requirement or pressure to do so," he says. "Additionally, the most likely result of reporting currently is a significant negative impact on reputation and share price value so it is no surprise that reporting is minimal."

This, he says is one of the biggest barriers to the industry collaboration that is desperately needed so that lessons learned can be shared among the maritime community as a whole. A good example is the financial services sector, which has reaped rewards by adopting this collaborative approach.

"There needs to be a significant industry shift from an isolationist view to a consensus that 'an attack on one maritime business is an attack on the sector as a whole'.

"This is just one of the reasons we are so excited about our recently announced industry initiative on the launch of international Maritime Cyber Centre of Excellence. One of the key goals of this centre is to support industry collaboration and help the global maritime community respond more effectively to the cyber challenge."

So what are the benefits of MCERT membership and could this lead to lower insurance premiums? "From Templar Executives' experience and perspective, it is important that the sector recognises the need to help itself and the benefits of collaboration.

"The Maritime Cyber Security Centre of Excellence (MCCE) which will be live from 3rd September, and incorporates the Maritime Cyber Emergency Response Team (MCERT) and the Templar Cyber Academy for Maritime, will help address this issue. Templar Executives has partnered with Wärtsilä and the Maritime Port Authority of Singapore on this important initiative. We are inviting all industry players to join this collaborative response to safeguard and shape the future of our industry, either by enrolling as MCERT members or joining the Advisory Committee."

This is particularly pertinent as the MCERT will use intelligence feeds from the global security community (among other intelligence feeds), to provide members with advice and support on the latest cyber threats. In addition, it will offer real time assistance to members experiencing cyber attacks and incidents.

There will also be the capability for members to report incidents securely and anonymously. If a vessel suspects they have suffered, or are currently suffering from a cyber attack, the MCERT can be contacted and can offer triage via secure communications.

"For other benefits, such as lower insurance premiums, that is the decision of the insurance company," says Fitzmaurice. "However, by joining the MCERT, companies are able to demonstrate an acknowledgment of the risk and that they are taking proactive steps to mitigate the risk and develop a more defensible position when it comes to improving their cyber maturity and resilience."

MODERN SHIP LOADING

COMPANY NEWS

FAM Magdeburger Förderanlagen und Baumaschinen GmbH is a medium-sized company based in the German city of Magdeburg. With its historical roots stretching far back into the 19th century, the company has a long heritage as a manufacturer of handling and conveying systems. A few years ago FAM, one of the leading suppliers of durable mining, handling and conveying systems, faced the tough challenge of augmenting its existing activities with new types of plants, systems and services, developing new business segments, sharpening its competitive edge, and distinguishing itself by virtue of its own reliable products from the competitors on the world markets.

FAM SHIPLOADER SL3000.39SX, HARD COAL, 3,000 TPH, LATVIA.

FAM SHIPLOADER SLRQ6600.56/27 0X, COAL, 6,600 TPH, COLOMBIA.

When selecting and designing a shiploader, the quality and properties of the bulk material, local conditions, performance parameters, and environmental requirements play a decisive role. With these aspects in mind, FAM engineers determine the most effective and cost-efficient handling method while minimizing operational and maintenance requirements. The loading system must fit in the port infrastructure and match current and future vessel sizes.

That's why FAM has developed a variety of different loading systems in addition to standard **mobile shiploaders mounted on rails**.

Radially traveling shiploaders, also referred to as radial quadrant shiploaders, have a different design. They are used in seaports with a water depth that does not allow to accommodate ships with a large draft. These shiploaders are secured offshore and connected to the mainland via conveyor bridges. They have an anchor point around which they can pivot. At the same time, the boom, which can be raised and lowered, and its loading system, e.g., a telescopic chute, can also be moved. This flexibility allows the tip of the boom to reach all loading hatches of the vessel without having to shift it.

Especially in cases when infrastructural conditions do not allow for the use of rail-bound shiploaders traveling along the jetty or radially traveling systems, new concepts must be developed. One of such solutions, which FAM has already implemented several times, is a **stationary shiploader**. Ships can be loaded by two slewable and movable booms equipped with feeding chutes that can be raised and lowered.

Assembly conditions for systems located in the open sea always present a special challenge. For this project, pre-assembled large components were transported and installed using self-loading and unloading heavy-lift ships. For this purpose, two deck cranes with a load capacity of 1,000 tons each, installed on a vessel, came to use. Such transportation and assembly conditions require comprehensive and detailed planning and preparation carried out by FAM Engineering in co-operation with logistics companies. Such system design has proven to be a success also in other projects, for example, in seaport facilities of Latvia and Canada.

TWO STATIONARY FAM SHIPLOADERS SL3000.45, HARD COAL, 3,000 TPH, CHILE.

TRANSPORTATION OF THE ASSEMBLED FAM SHIPLOADER SL8800.25EK FOR PORT CARTIER, CANADA.

Naturally, clients prefer to have their shiploaders delivered to site of operation completely assembled and ready for production. For such situations, FAM has the right solution when equipment is assembled prior to shipping in the home port, prepared for sea transportation, and placed and secured on a heavy-lift vessel. Figures also show the FAM shiploader type SL8800.25EK for handling iron ore at a rate of 8,800 tph in Port Cartier, Canada. The FAM equipment was assembled in Bremen, Germany, shipped to Canada by a heavy-lift ship, and placed directly on rails on the jetty in Port Cartier. The advantages of such an approach are obvious: within a very short period of time the equipment can be commissioned and put into operation according to contractually agreed technical parameters.

LOADING THE FAM SHIPLOADER SL8800.25EK FOR PORT CARTIER, CANADA.

The global volume of handling activities is growing rapidly as does the demand for appropriate modern port facilities.

Currently, FAM is involved in numerous projects which aim to make the port handling processes even faster and more efficient all over the world. One of the FAM most remarkable projects was a complete handling system for the port of Onne in Nigeria, where an FAM shiploader was recently installed at the top of a technology chain for loading urea at a rate of 900 tph.

As part of a strategic partnership, FAM also offers a globally unified solution for building modular jetties in bulk cargo terminals through knowledgeable and experienced industrial companies. These companies contribute their port and logistical expertise and, more importantly,

FAM SHIPLOADER SL900.23DX, PORT OF ONNE, NIGERIA.

also an opportunity to integrate the forthcoming projects into the existing logistics networks of the customers.

In this way, the current constraints on the development of transport and port capacities, which mainly concern export and import of raw materials, can be remedied in a short time by the extensive know-how of the companies. It will facilitate the transshipment processes which will lead to the trade balance improvement and creation of new jobs in the regions.

Material handling connects the entire world. The FAM Group provides its globally active customers with a wealth of knowledge, extensive experience, and high quality. The most current examples of such a successful cooperation include a port facility with an FAM shiploader type SL1200.31.D.H for handling urea in Turkmenistan and an order of a third FAM shiploader type SL1500.27EXL for handling fertilizers by JSC "Baltic Bulk Terminal", an operator of the port terminal in Saint Petersburg, Russia.

THE FAM GROUP

Headquartered in Magdeburg, Germany, the FAM Group has a total of 14 subsidiaries in Germany, Bulgaria, Chile, China, Canada, Russia, Singapore, Hungary, and Australia as well as representations, among others, in South Africa and in the United States.

Approximately 1,500 employees work for the FAM Group around the globe. Planning, project development, designing, manufacturing, assembly and startup as well as servicing of bulk material conveyor systems generate a turnover of about 300 million euro per year.

FAM successfully plans, designs, and manufactures turnkey plants and systems for mining, conveying, loading, and storing minerals, raw materials, and goods. FAM efficiently combines its know-how of serial and custom-specific production.

In addition to engineering services, the company offers a complete range of manufacturing services as well as aftersales service. For more than 100 years, FAM incorporates in its global solutions professional competence, engineering know-how and top-level project management.

FAM Magdeburger Förderanlagen
und Baumaschinen GmbH
Sudenburger Wuhne 47
39112 Magdeburg
Germany
Tel.: +49 391 / 63 80-0
Fax: +49 391 / 63 80-10 0 99
sales@fam.de
www.fam.de

STRATEGIC PARTNERSHIP FOR THE BEST RESULT.

CLEANING UP THE MARKET

A highly glamourised commodity of the industrial age, coal has almost become a dirty four-letter word in the last decade. With heightened debates on global warming and evidence of rising seas, coal has now became the subject of national policy in many developed and developing countries, mostly by implementing policies to "encourage" power generation plans to switch to cleaner fuels, writes Basil Karatzas

The improvement of new technologies for shale oil in the US and massive discoveries of natural gas deposits around the world seem to offer the last nail on coal's coffin. However, by taking a closer look at recent data, as the saying goes, the news of coal's death seem to be exaggerated, at least for now.

Based on the latest data by the Energy International Agency (EIA), in 2017 worldwide coal production increased by 225 million tons, or 3.1%, after three years of declining production. Worldwide coal production stood at 7.5 billion tons in 2017, approximately 500 million tons lower than its peak in 2013.

Of these 7.5 billions, approximately one billion is of coking (metallurgical) coal and 5.6 of steaming (thermal) coal – the difference to the total being lignite, with approximately 800 million tons of production. As coking coal production actually marginally declined in 2017, steaming coal production made most of the increase in overall coal worldwide production.

Looking at consumption, in 2017 worldwide coal consumption increased by just 1%, with OECD countries consuming 0.6% less, but non-OECD countries consuming 1.4% more than in 2016. Specifically, for steaming coal, worldwide consumption increased by 1.4%, with Indian consumption jumping by 6.6%, but with US consumption dropping by 2.8% year on year.

In terms of trade, countries of the Pacific Rim and South East Asia are getting ever more critical in terms of coal imports, specifically for steaming coal, with this region now representing approximately 74% of the worldwide market. On the other hand, the European region now barely represents 20% of the worldwide market of steaming coal imports (it used to be more than 40% just 20 years ago and more than 70% of the global market 40 years ago), according to the EIA. Thus, developments in South East Asia and countries of the Pacific Rim, especially in China, are especially critical to the coal trade.

Steaming coal is primarily used for the generation of electricity and commercial heat, approximately 65% globally, and significantly higher, at 82%, for OECD countries. As global emissions of CO_2 reached 32.5 gigatons (billion metric tons) in 2017, attention has been paid to the high contribution from coal burning to such emissions – according to EIA, almost 45% of global CO_2 emissions are attributed to coal.

Carbon emissions have been a typical example of the "tragedy of the commons" on a global scale (a resource-shared system where players act individualistically to their self-interest while collectively spoiling the common resource – in this case, burning coal for power generation optimised to the benefit of individual players while CO_2 emissions cause global warming even for parties that share little of the power generation output, such as islanders in the Pacific Ocean) and almost has been ignored until the very recent past. Pollution, on the other hand, has been reaching such high levels and affecting the well-being and health of citizens in local communities that it cannot be ignored any more, for social and political reasons. For instance,

images of smog from major Chinese cities are now a frequent feature in the international press. As such, coal as a source of energy may have limited use in the future.

Coal emits almost 80% more CO_2 than natural gas per British Thermal Unit (BTU) produced (206 vs 117 pounds between bituminous coal and natural gas, respectively), a substantially significant difference and strong indicator of coal's inherent disadvantage to natural gas in this respect. All along, natural gas has also a significantly higher calorific value than coal, approximately 80% (51g/MJ vs 90g/MJ, respectively) rendering the economics of the natural gas trade more favourable in the long term.

Switching power generation plants from coal to natural gas is a process that can take at least a decade, even for countries such as China when the state government can move fast to implement new initiatives. Even retro-fitting coal burning power generation plants can take several years to undertake and come at a significant CapEx commitment. Building clean coal power plants are not risk-free or cheap either, as the Kemper power plant in Mississippi, US, shows, with the $7.5bn plant eventually abandoned after several budget and timeline overruns.

China's long-term commitment to cleaner sources of energy has both amazed and impressed the world's market. For instance, China has committed to invest $360bn by 2020 in renewable (solar) energy and, by next year, China is expected to be the world's largest importer of natural gas. Although it is the world's largest emitter of greenhouse gasses, the country is moving fast to next generation power generation, well ahead of many other developing and developed economies.

In the interim, China keeps feeding its legacy power generation plants with coal, but in an effort to enjoy cleaner skies ("make China's skies blue again"), it has switched to a higher proportion of imported high-quality Australian coal at the expense of domestically produced low quality coal. Higher imports of Australian coal is one of the factors for increased South East Asia and Pacific Rim coal trade activity, as China's coal imports moved higher by more than 6% in 2017.

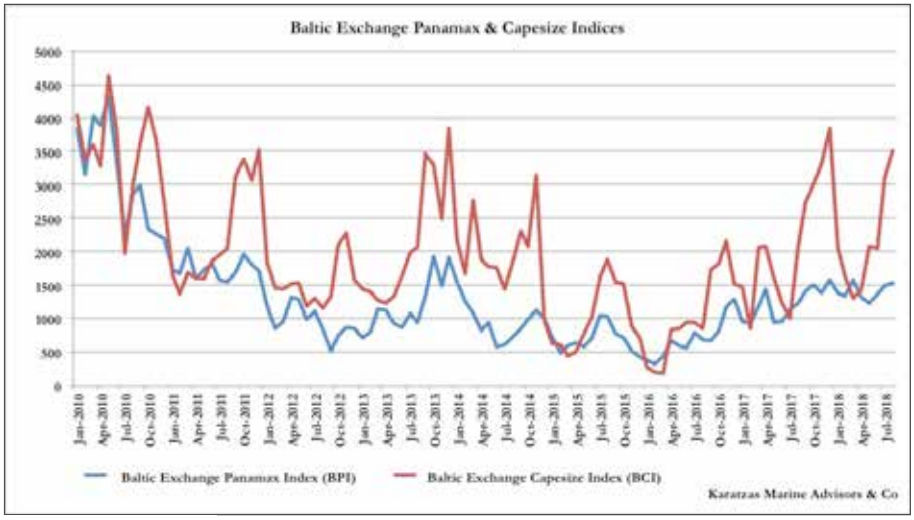
India and South Korea, another two major players in the coal trade in the Pacific, saw their coal imports increase by almost 8% and 11% in 2017, respectively.

Coal is primarily traded with capesize, Newcastlemax and panamax dry bulk carriers. The two charts below show the activity in the seaborne trade for coal (steaming and coking) and the Baltic Exchange indices for capesize and panamax dry bulk vessels. While there is influence from other segments of the market, the correlation is obvious – that coal business affects freight rates for capesize and panamax bulker vessels.

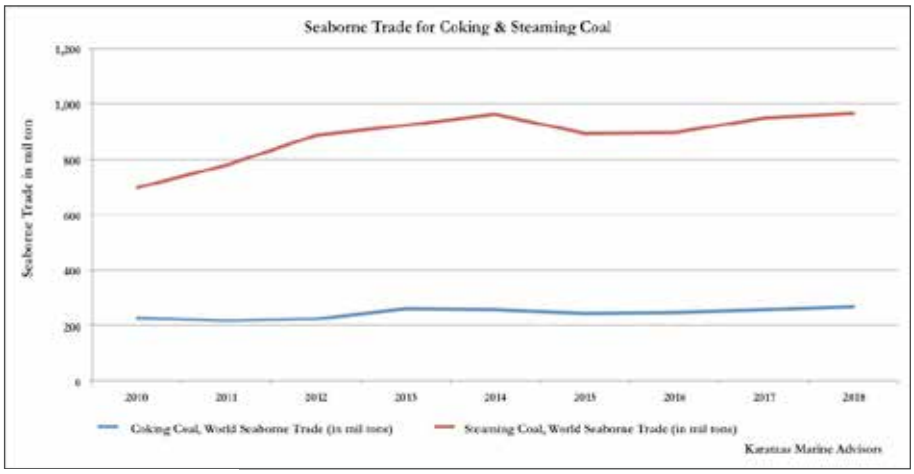
Plain economics considerations are in favour of natural gas over coal as power generation fuel, and over the long term, the market will move towards that direction.

In the interim, trade of coal depends on shorter terms macro-economics and other government initiatives. And, there have been high-profile politicians that have used the coal industry as a proxy for rejuvenating the past glory of the coal mining industry and bringing back the lost coal mining jobs. It may be so, but the future may hold differently.

Basil M Karatzas is the Founder and CEO of Karatzas Marine Advisors & Co, a shipping finance and shipbrokerage firm based in New York City. For more information, visit: www.karatzas.com



GRAPA PANAMAX & CAPESIZE



GRAPH COAL SEABORNE

FROM CEREALS TO MINERALS AND EVERYTHING IN BETWEEN

COMPANY NEWS

THE NEW GENERATION STORMAJOR® IS DESIGNED IN ACCORDANCE WITH DIN 22261-2 (EXCAVATORS, SPREADERS AND AUXILIARY EQUIPMENT IN OPENCAST LIGNITE MINES) AND DIN22101 (CONTINUOUS CONVEYORS – BELT CONVEYORS FOR LOOSE BULK MATERIALS)

Contact: sales@samson-mh.com
SAMSON Materials Handling Limited
www.samson-mh.com
+44 (0)1353 665001

SAMSON
AUMUNDGROUP

For over 50 years SAMSON has been providing equipment worldwide for handling dry bulk materials. As trade in dry bulk materials has evolved, SAMSON equipment has enabled operators to remain competitive by providing them with an efficient and effective mobile handling solution.

SAMSON's latest development, the new generation Stormajor®, promises to bring multiple benefits for ports and terminals in terms of efficiency and flexibility, maximising the use of space and environmental respect.

SAMSON has a long history of providing mobile dry bulk handling equipment to ports and terminals worldwide. The company began in the UK providing mechanical handling solutions for the agricultural industry.

It quickly expanded to offer ship and barge loading equipment and gained experience in multiple industries; particularly mining, minerals and cement. Since 2002 SAMSON has been part of the AUMUND Group and is proud to be able to support a wider network of customers through AUMUND subsidiaries, representatives and support services worldwide.

The latest addition to the SAMSON equipment family is the new generation Stormajor®. This revolutionary piece of equipment combines a fully mobile material reception unit with a luffing and slewing boom in one integrated machine.

It can receive dry bulk cargoes from tipping trucks and front end loaders directly into its universal entry. The buffer capacity of its reception hopper allows continuous material supply during truck turn around.

Material is then either loaded into vessels for onward processing or discharged to storage facilities. The Stormajor® is effective for both indoor and outdoor stockpiling and can deliver conical, kidney and unrestricted plateau stockpiles maximising every bit of space available. If the material is for export or processing at an alternative location the unit can be used to load rail wagons, barges or ships due to the easily directional outloading boom which is available in 18m, 21m, 24m and 27m options.

Three duties of the new generation Stormajor® are now available:

- **300 Series:**
  For dry bulk materials ≤1 t/m^3 ideal for grain and fertilisers
- **400 Series:**
  For dry bulk materials 0.9 – 1.5 t/m^3 ideal for sands and light minerals
- **800 Series:**
  For dry bulk materials 1.4 – 2.1 t/m^3 ideal for mineral ores and aggregates

Each series Stormajor® can be mounted on a wheel-based or tracked chassis. Whilst lighter applications may suit a wheel-mounted tow travel unit, heavier applications may dictate a track-mounted unit with self-propulsion, with optional outrigger support wheels when a percentage of the material is required to remain within the reception section.

Once the required duty of the Stormajor® has been determined the unit is tailored to the specific requirements of the material, operation and customer with a wide choice of optional extras. Abrasive materials may require liners in the reception section and transfer chute. Fugitive dust can be contained by using enclosures, transfer point sealing systems as well as dust filters and water spray de-dusting at the reception unit transfer points.

SAMSON equipment is available for each step of the materials handling process from material extraction or origin, through rail, truck or waterways transport to shipping and material reception at arrival ports.

The major benefits of SAMSON equipment are its flexibility, ease of operation and maintenance. Equipment is designed to be robust and long-lasting with minimal maintenance requirements to give operators the maximum return on their investment.

CONCRETE SOLUTIONS

Efficient yet eco-friendly equipment is critical in the cement industry

"Cement manufacturers are faced with several challenges: complying with ever-stricter environmental regulations, in an industry with some of the highest carbon dioxide emissions," says Detlev Rose, Chief Sales Officer at Beumer Group. "They are also faced with permanently increasing cost pressures due to excess capacities, especially from China. Many countries, therefore, import the material, instead of producing it."

Large infrastructure projects around the world have ensured that global cement production has almost quadrupled since 1990, according to Dr Rose, amounting to about 4.17m tonnes in 2016, with growth mainly coming from Asian markets and China, in particular.

"Despite growing cement sales, cement manufacturers worldwide face production overcapacities that have been built up during recent years, especially in China," he says. "This decreases global cement and clinker prices. Due to these overcapacities, some countries focus more on the export of cement and clinker, an intermediate product when producing cement. At the same time, an increasing number of countries decide to import cement or clinker, instead of producing it domestically."

One key importer is Australia, where strict environmental regulations and price pressures have meant rising imports of cement, and clinker in particular, Rose explains.

"The clinker is imported and then ground down to cement in Australia. The imported materials are coming from multiple countries including Indonesia, China and Vietnam. The cement and clinker imports are increasingly replacing local production. In 2016, the utilisation of the domestic cement production capacities was only at around 57%."

One key issue to be considered is that producing cement results in large quantities of carbon dioxide being emitted as part of the production process, which involves the limestone used to produce cement clinker.

"Depending on the processes used, the carbon dioxide emissions from producing cement are at 0.6-0.99 t of CO_2 per ton of cement. The CO_2 emissions from producing cement are estimated to account for 7-8% of the overall global carbon dioxide emissions. Manufacturers can reduce these large quantities by partially substituting the cement clinker with alternative materials such as fly ash, clay or granulated blast-furnace slag."

Another way of tackling the issue is to increase the use of alternative fuels for cement production. These can be used as an alternative energy source to coal and gas.

"Besides liquid materials like waste oil or solvents, the majority of the solid alternative fuels are composed of municipal and industrial waste, such as plastic, paper, composite material or textile mixes," says Rose. "Whole or shredded waste tyres are also used and made up 6 % of the alternative fuels used in Germany for the production of cement in 2016. The calorific value of the rubber from waste tyres is comparable to that from hard coal and the iron from the reinforcement can be incorporated mineralogically into the cement. This minimises the addition of ferrous corrective substances."

Beumer's contribution to the cement production process includes conveying systems such as troughed belt conveyors and pipe conveyors, different bucket elevator types and clinker transport systems, loading systems and complete packaging lines. The company provides these solutions throughout the entire material flow chain, from unloading the delivery vehicle to storing, taking samples, conveying and control feeding solid alternative fuels, Rose explains. Also supplied are fully automated systems that can control feed, singulate and convey large and heavy tyres to the inlet of the rotary kiln.

One example is Aalborg Portland for whom Beumer has provided a complete solution so the cement manufacturer can recover energy from different types of waste at its plant in Denmark. Different types of alternative fuels are used in the calciner and in the main burner. These fuels are made of varying compositions and are efficiently stored, conveyed and fed.

The oven-ready alternative fuels are delivered in moving-floor trailers. They are unloaded and then temporarily stored at the receiving station. Both lines receive the transported material from the storehouse via the moving floors.

To enable the transport of the pre-processed fuels from the storehouse to the calciner and to the main burner, Beumer supplied and installed a pipe conveyor. Using the conveyor to transport the fuels is quiet and low-maintenance, Rose says, and the enclosed system is also emission-free and energy-efficient.

"The enclosed construction prevents material from falling and dust and odours from escaping into the environment. With an ability to navigate curves, the pipe conveyor requires considerably less transfer points compared to other belt conveyors. This allows for substantial capital cost savings for the customer and Beumer can customise the system to the individual routing."

The belt conveyors are provided with environmentally safe electric drives and low-energy belts. The motors – which, depending on the topography are run in motor-driven and regeneration mode – are mostly adjustable. This permits an optimum load distribution on the drive unit in different operating conditions. If the belt conveying system conveys downhill, the system works in generative operation. The generated electric energy is fed back into the public network by a regenerative feedback unit. This way the operating costs of the complete system can be further reduced.

The company also provides different types of bucket elevators. The buckets are mounted either to a belt or a central chain, depending on the application. Until recently, the use of belt bucket elevators was generally limited to transporting fine bulk material because there was a risk with older models that coarse-grained bulk material could get stuck between the bucket and the belt and damage the belt, Rose says.

The company has developed a high-capacity belt bucket elevator type HD (heavy duty), that makes it now possible to also efficiently transport coarse-grained material such as clinker. Designed to eliminate the space between the individual buckets and the belt, it prevents coarse material from getting stuck during the scooping and filling process and from damaging the belt.

Until the final completion of cement in the silo, the greatest part of the costs is associated with the transport. Cement is transported in bulk and in bags and the majority of cement worldwide is loaded in bulk via terminals on road and rail vehicles or on ships.

There is a trend towards higher degrees of automation in the fields of packaging and loading, also in emerging markets such as India, for example, where the goal is to reduce personnel, especially in countries where the transshipment of bagged bulk goods is increasing and labour costs are climbing. The loading and palletising system Beumer autopac, can load up to 3000 bags per hour without any problems, the company says.

DUST-FREE SHIP LOADING

COMPANY NEWS

You have certainly heard of the danger of dust and particulate matter in the air in the cities generated by cars? Clean air is very important to everyone, everywhere.

In the sector of ship transport of grain and similar goods it is the same. In earlier days dust was accepted as a "part of the process" but today we have increasing regulation and claim for better quality of life – even more when neighbours complain. In addition, the dust causes damages in devices, such as air conditioning or electrical equipment and not forgetting cars, windows, rooms depending of residence distance and wind direction.

PREVIOUS SYSTEMS

Until the 80s, a loading system was built without consideration of dust reduction. Typical systems from this period were jet belt slingers Fig. 1), open vertical telescopic tubes (Fig. 2) and telescopic tubes with rotating shoe (Fig. 3).

Later, loading bellows were developed with or without filters and skirts (Fig. 4). This category also includes the loading head stowage pots or choker (Fig. 5). These had to stow product in the storage container head and release it through a complicated controlling mechanism according material flow and try to avoid dust. The grain fell 20m from the boom to the hatch and the choker tried to slow it down. In addition, emergency openings were necessary in case that material blocked the vertical tube. Unfortunately, these systems are very sensitive to failure and difficult to handle and therefore barely used.

EFFICIENT SYSTEMS

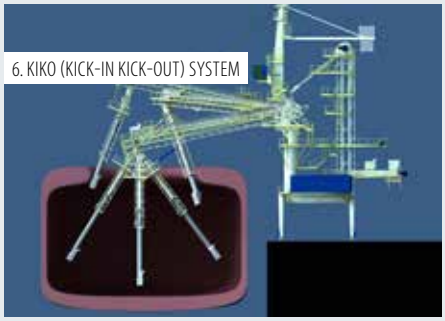
Two systems show another way to reduce dust – KIKO (kick-in kick-out) (Fig. 6) System with DSH (dust suppression head) via a controlled flap (Fig. 7) and cascades (Fig. 8). The wheat gets decelerated through the vertical tube or slides in a cascade and is unloaded from a low altitude and correspondingly low speed into the ship.

1. TELESCOPIC PIPE WITH JET SLINGER

3. TELESCOPIC PIPE WITH ROTATING SHOE

2. OPEN TELESCOPIC PIPE

4. LOADING BELOW WITH SKIRT



6. KIKO (KICK-IN KICK-OUT) SYSTEM

The advantage is that the wheat dust mixture stays together due to the low drop height and the corresponding low speed (~ 1 m/s). Hardly any dust is created. The advantages are no need of emergency openings as the breakage of the crop is reduced and an horizontal movement by KIKO. The disadvantage of this technique is that the machine plant must be recalibrated after a fully loaded vertical pipe.

CASCADE

In the cascade, the product slips from top to bottom from a small height and is slowed down by the cascades. This only works in a vertical position because otherwise the material comes to rest. To fill the whole hull an additional horizontal movement is necessary.

KIKO WITH DSH FLAP

Neuero Industrietechnik has developed and perfected the KIKO (Kick-in-Kick-out) system with a flap on the loading tube, as used by stationary loading systems attached to silo walls. The novelty is the combination with a pendulum movement in both directions. For the first time, the KIKO system was successfully launched with RHG Kiel in 2002. After that many projects in Russia, Ukraine and more recently in France, USA, Finland, Canada and Germany followed.

The advantage with this system is the pendulum movement combined with the rotary movement, whereby a hatch can be completely covered without having to travel, even at difficult spots.

This movement enables dust-free loading even while trimming (filling all corners and hatch edges). This feature makes the difference and permits an efficient and low dust operation.

The KIKO system with DSH offers following advantages: highest dust reduction, less grain breakage at a larger working radius.

Many port operators are already opting for a low-dust unloading system and this will certainly increase in the future for environmental reasons. The benefits are obvious and an improvement in air quality ultimately benefits each one of us.

One example is the new KIKO with DSH SL1400, a 1.400 t/h shiploader (Fig.9, fig. 10) supplied to company Bollore in La Rochelle, France. It opted for the system because the old system (Fig.11) generates dust.

It is not always an easy decision because of higher costs and competition in the market. But is provides a signal of care of people and environment.


8. CASCADE


9. SL1400 KIKO WITH DSH


10. DETAIL OF SL1400 IN OPERATION


5. CHOKER


7. DSH


11. OLD SYSTEM

TALKING TECHNOLOGY

With some of the most technologically advanced port operations in the world, German companies and port authorities have continued to showcase new products and processes aimed at making port operations work even more efficiently

Coming up with a solution to the ongoing problem of emissions from shipping and other forms of transport has resulted in increased financing by governments in alternatives — and the German federal government is no exception.

This has led to high levels of funding for the development of battery and fuel cell-powered transport, with the aim of making the transport sector more energy efficient, while at the same time reducing its carbon footprint.

Andreas Scheuer, Federal Minister of Transport and Digital Infrastructure, commented recently that he was convinced that "electric mobility offers major opportunities for German industry. When it comes to shaping mobility in an environmentally friendly way and reaching climate change targets, electric mobility is a key technology. Electricity and hydrogen are the fuels of the future."

"Mechanical engineering companies can be very satisfied with the first half of 2018, with order books filling up by 7% overall. This fully met the positive expectations for the current year," Mechanical Engineering Industry Association chief economist Ralph Wiechers commented.

Ports have also seen the benefits of co-operation when it comes to data exchange and one good example was a project launched earlier this year between HVCC Hamburg Vessel Coordination Centre and Rotterdam Port Authority. The ports will exchange relevant data through a digital interface so terminals can optimise their resource planning. This collaboration, therefore, improves the operational processes, while also making both ports more attractive.

The joint project was launched at the beginning of 2018 with HVCC and Rotterdam exchanging data directly via IT systems. The information includes planned and actual arrival and departure times for ships coming from or heading to either port.

This direct line of communication improves the capabilities for planning for both ports as well as for the shipping companies that use these ports, thus ensuring the ability to react quickly in the case of schedule changes, HVCC says.

Gerald Hirt, managing director of HVCC explains: "'Airport Collaborative Decision Making' is a concept that we know from aviation and refers to the joint decision-making and data usage established in that industry, from which shipping can also benefit.

"The direct exchange of data between Hamburg and Rotterdam is the logical first step towards building a network of ports all over Europe, particularly in order to increase the ability to react to delays — and thus provide both shipping companies and terminals with improved and reliable support for the arrival and dispatching of ships.

"We would like to invite other European ports to connect with us and to benefit from these advantages," Hirt concludes.

This digital co-operation is achieved through an interface, which links the HVCC software with the Pronto platform used in Rotterdam. This allows for the real-time exchange of

data along the lines of the Port Call Standard of the International Harbour Masters' Association.

As the ports industry increasingly moves forward with digital technology, German engineering firms such as Liebherr have been developing systems to improve efficiency alongside the process.

Liebherr's intelligent SmartGrip grabbing technology, for example, aims to revolutionise bulk handling and the self-learning system increases material handling performance and protects the crane from being overloaded.

The SmartGrip grabber technology is capable of optimising the filling rate of the grabber. It learns after just five lifting cycles how to optimise capacity utilisation of the grabber, even for crane operators who have less experience than others.

SmartGrip prevents overloads, increases the material handling rate and, at the same time, alleviates crane operator stress, the company says.

HANDLING HAZARDS

One key area of concern for those involved in commodities handling has been dust and other potentially carcinogenic substances contained in material being loaded in ports.

One example of new technology that aims to address this issue is new sorting technology produced by Bühler, which aims to minimise toxic contamination in maize by identifying and removing aflatoxin-infected grains.

LumoVision was produced in conjunction with Microsoft and is, the company says: "A significant advance for the maize processing industry in its fight against toxic metabolites produced by mycotoxins — fungal moulds — the most poisonous of which is aflatoxin."

Using digital technology to combat potentially harmful substances when sorting product is a considerable step forward and the company claims the new technology can eliminate up to 90% of contaminated maize.

Until now, sorting maize for aflatoxin reduction has proved difficult and imprecise, relying on identifying indirect indications of contamination, Buhler says. "Testing for contamination based on sampling is inconclusive and time-consuming as contamination occurs in hotspots. Just two contaminated kernels in 10,000 are sufficient to make a lot unfit for purpose. Alongside health risks, the economic impact on farmers and food processors is significant."

According to Buhler, LumoVision is the first optical sorting technology able to identify aflatoxin based on direct indicators of contamination, while simultaneously using real-time, cloud-based data to monitor and analyse contamination risk.

It analyses the colour each kernel shows as it passes under UV lighting in the sorter as contaminated kernels shine with a specific bright green colour. LumoVision's highly sensitive cameras detect precisely this colour of fluorescence. Within milliseconds of detection, air nozzles deploy to blow contaminated kernels out of the product stream. The machine processes up to 15 tons of product an hour, eliminating up to 90% of contamination — a significant improvement on current solutions.

A cloud-based solution using infrastructure provided by Microsoft is a key enabler to reducing overall yield loss, the company explains. Combining data from the cameras with data stored in the cloud allows a local, real-time analysis of the risk of contamination to be carried out. When the risk is minimal, sorting is halted while the machine continues to monitor. If the risk rises, sorting automatically restarts.

LumoVision is currently undergoing testing onsite with Bühler customer Capa Cologna in Italy, an agricultural co-operative whose maize was affected by aflatoxin after drought conditions during the growing season in 2012.

Meanwhile, Germany-based Flexco is presenting a new solution to make life much easier for conveyor system operators at trade fairs this year, through which material carryback, belt misalignment, material loss and belt slippage can be avoided.

The PTEZ belt centring stationdetects belt misalignment and re-aligns it correctly. It is suitable for light- to medium-duty applications and for reversible belts with widths of up to 1,200 mm, according to Flexco. Operators can also use it for belts with worn or damaged edges. The station is very quick and easy to install thanks to the simple design of its brackets and components and a particular feature of the PTEZ is the roller, which is polyurethane-coated as standard.

Flexco also markets mechanical belt fasteners, which are specially developed for use in mining and underground operations and are suitable for conveyor belts made of woven PVG/PVC up to a strength of 1,750 N/mm. Users apply the fasteners manually or with a hydraulic press, without damaging the fibres. The flat design of the belt fasteners improves the approach for cleaning systems and reduces contact with skirt elements and return rollers, meaning a longer life time.

THE RIGHT SOLUTION FOR EVERY TRANSPORT TASK

COMPANY NEWS

Transport systems are important additions to warehouse logistics for port facilities. Operational logistics must ensure that different goods are reliably and quickly available at their destination. Therefore individual delivery solutions for each of these transport tasks are needed. The German company SMB International GmbH covers all major areas of loading systems, conveyor and shiploading technology.

As a specialist in the field of material handling, SMB identifies the exact requirements, plans, designs and produces tailor-made conveyor systems complete with control and drive technology. In the recent years the company realised several projects in the Middle East, South-East Asia and Europe.

"The increasing demands regarding cost minimization, high productivity and a quick handling of goods are getting more important", explains Andreas Heckel, Managing Director of SMB International GmbH. "In many regions we also face difficult climatic and geologic conditions."

LOADING DAY AND NIGHT

This also applied for one of the company's projects in Algeria. For a fertiliser company, SMB has designed two ship loading systems for the handling of urea. The ship loaders were installed directly at the port facilities where SMB was given the task to construct the complete connection to the quay including the take-up of the bulk cargo from the quayside belt right into the ships.

TWO SHIP LOADING SYSTEMS DESIGNED FOR ALGERIA.

With a reclaimer, the granules are brought from the silo warehouse to the conveyor technology and transported further to the SMB ship loader. The material reaches the ship from the warehouse in a protected manner. As a result, a fully-automated loading process can take place at any time during day and night.

The engineering designers also decided to implement a mobile system on the quay with a pivoting superstructure. In this way the ship can be loaded at all locations. With the loading of bulk cargo, it first reaches the tripper car via the conveyor belt system. Then the cargo falls on the portal belt, is conveyed to a funnel, which is in the centre of the intermediate transfer point. It reaches the boom conveyor and falls into the cascade chute.

The chute has several open cones inside it, arranged in an angled position across one another. The material flows into ship's hold in order to avoid damage to the materials. The outlet section of the slide is shaped around 360 degrees. The system serves as example of successful complete solutions with an automatic flow of goods.

GOING UP

One of the more traditional conveying systems are bucket elevators. Powerful and labour saving, they are still available to this day and used for vertical transport of bulk or materials.

Today, they are technically more advanced and there is a wide variety of models available. Some of the most common materials which are transported by bucket elevators are fertilisers, grains, coal, coffee, sugar, rice, metal ore and many more.

Regardless of their popularity in a wide range of materials and industries, there is no one-size-fits-all elevator.

In contrast to other systems like chain conveyors, bucket elevators cause less material degradation and are suitable for coarser bulk materials. Moreover, higher conveyor capacities are possible and larger conveyor heights can be realised. A series of buckets are attached to a belt or a chain to mobilize the buckets vertically. Bulk materials are loaded into each unit as they move past the inlet point. The buckets are inclined in order to discharge the material.

STARTING POSITION IS DECISIVE

As for the direction of the buckets, vertical, oblique and pendulum type elevators with oblique and vertical transportation option are possible. The bucket sequence can be customised according to individual conditions and chosen with or without distance. The starting position should thus be carefully examined before all other considerations.

Thanks to additional customisations options, the conveyor can be tailored to different factors such as the topography of the operational area. If it is an area with difficult climatic conditions, these must be taken into account for the long-term success of processes and a long service life.

SMB has implemented many such plants, for example, in the Iranian city of Assaluyeh, where urea granules are conveyed. Here, a bucket elevator connected to a dedusting system was realised inside a structural building within a port facility. Careful considerations were also made in the handling of the granular urea being conveyed. Since explosions may occur due to dust-air mixtures in granules, strict safety procedures had to be particularly taken into account from the start. In practice this meant allowance for sufficient sensors, limit switches and intrumentations.

A further focus was on safety precautions and careful transportation of the material. All equipment areas that come into contact with the material are made of stainless steel. Suitable dust proof motors and speed reducers such as bevel helical gear unit were chosen. Further safety measures were taken into account with the introduction of multiple inspection doors and service access for ease of maintenance.

As a supplier of fully integrated system solutions, SMB can connect bucket elevators such as these to other systems, for example to a ship loading system. In addition, conveying, palletising and filling systems with ideally co-ordinated measuring instruments can be integrated.

PACK UP YOUR TROUBLES

Palletising and packing cargos is a highly specialised area, requiring sophisticated technology. The consequences of getting it wrong can prove expensive...

GREGOR BAUMEISTER, HEAD OF BEUMER GROUP'S PALLETISING AND PACKAGING SYSTEMS

Gregor Baumeister, head of Beumer Group's palletising and packaging systems, manages and co-ordinates the global competence centre in this sector. So what are the company's – and his – objectives?

"With the management of the palletising and packaging systems division, I have taken on a highly exciting and varied task. Together with my team, I am responsible for developing and expanding our comprehensive solutions portfolio. I can formulate my goal very simply: I want to continuously promote the worldwide growth of this business sector.

"To achieve this, we must establish ourselves in a regionally balanced manner to enable us to support our customers throughout the world in the best possible way," he continues. "We concentrate on industries with potential and of course sectors in which we are firmly established, such as chemicals. Here we will continue to offer our customers intelligent solutions."

Christian Freise, senior sales manager, chemical division, says his team focuses on customers in the chemical and petrochemical industries who are looking for packaging solutions. "Our team is familiar with these industries

and knows what technologies are available. This can include simple products as well as complete packaging lines. These industries, and the petrochemical industry in particular, have very special requirements. Our machines and systems are designed to be adaptable to a wide range of industrial sectors, so they can be applied in these industries as well."

So what are the requirements that are specific to chemical engineering and what are the issues to bear in mind? Freise says: "Unlike cement, mortar or gypsum, chemical and petrochemical products can vary widely in temperature, and they can have special flow characteristics. They also have different bulk densities and grain sizes. But they have one thing in common: they have to reach distributors and customers in perfect condition. Therefore, they have to be carefully bagged, palletised and packaged, and it must be done quickly."

How can the company make sure that the right systems are provided? According to Baumeister: "We offer an extensive, modular range of products. Our corporate group has all the expertise needed for developing custom solutions, even for very complex material flows. Our systems can cover all of our customers' processes. This includes storing and moving raw materials, consumables and supplies, as well as semi-finished and finished products, within a defined area of the company. It can involve bulk materials and piece goods that are kept in bags, boxes, canisters, drums or FIBCs. These can be moved individually or on pallets. We supply everything from a single source."

Freise adds that when installing packaging lines in the chemical industry, an example could be bulk materials being transported from the silo via a conveyor line to a fillpac form-fill-seal (FFS) system. This filling machine forms a ready-made PE tubular film into a bag and fills it with the customer's engineering plastics, such as PE, PP, PA or PS granules. The granules are weighed before the filling process. For this, the Beumer fillpac FFS is equipped with an electronic calibration-capable weighing unit. It ensures that the bags are filled with a constant quantity of material within the specified tolerances. After filling, the bags are sealed. High-performance systems can fill up to 2,600 25kg bags per hour and the company now also includes systems for lower throughputs.

The filled bags, which come in various sizes and weights, have to be stacked on pallets in a stable and precise way. Beumer's high-performance palletiser has a modular design, which means it can be installed quickly. It is easily accessible for maintenance and can be operated intuitively and adapted to different packing patterns. "Companies in this sector have to position the bags smoothly, quickly and exactly. For this purpose, we equip the Beumer Paletpac with a clamp-type or twin-belt turning device."

When customers handle piece goods such as boxes or canisters instead of filling their goods in bags, they can use Beumer's Robotpac. This space-saving, fully automatic articulated robot is designed to solve complex palletising and depalletising challenges.

Depending on the requirements, the palletised products must stand securely on the loading space during transport, and during handling and outdoor storage they must be protected against dust, rain and other atmospheric influences. For this purpose, the company has developed a stretch hood high-capacity packaging system, which pulls a stretchable film over the products.

According to Baumeister: "We equip all systems in a packaging line with the same human machine interface (HMI). This operator panel provides users with an easily understandable and intuitive interaction concept, enabling them to define reliable working sequences.

"With our system solutions, the full pallets or individual bags can be forwarded to a connected warehouse or directly to the loading space of a truck. The components are mainly transport technologies such as conveyors or

vehicle-based systems," he says. "We always use components from our modular system. This makes it possible to expand our solutions at any time. They can be adapted to the customer's needs, such as when there are changes in the product range or packaging."

As far as tracking is concerned, Freise says: "We make sure that the filling, palletising and packaging components as well as other system components are perfectly co-ordinated. For this purpose, we developed the modular BG Software Suite as a higher-level data processing system. It can be adapted individually to particular tasks. Systems from other firms can be easily integrated. Customers can extend this solution at any time and optimise their material flows. The cross-program user interface BG Fusion shows process data and reports. All available data can be accessed, without having to switch between different applications."

Complete material flow plans can also be created where necessary according to Baumeister. "Depending on the complexity of the task, some applications can be implemented on the PLC level alone. Others, in turn, require high-level material flow computers or warehouse control systems. The Beumer group ensures communication between the different control levels for the user. In this way we can create an intelligent connection between the individual systems and integrate them into existing process and inventory control systems. And because we supply everything from a single source, we avoid possible sources of error that could stem from interfaces."

So what is the latest development in the range? According to Baumeister the company has developed an app for Overall Operation Monitoring via smartphones and tablets, which gives operators and managers an overview on all relevant key figures of the complete packaging line or individual systems. The app shows the status of availability, performance and quality levels, as well as the energy and compressed-air consumption. This ensures smooth operation of all systems and customers can adapt the program to their specific requirements.

DUNNAGE DILEMMA

Making excessive charges for disposing of dunnage or other materials related to packing cargo can get companies into legal hot water.

The International Transport Intermediaries Club (ITIC) reported a recent dispute in which a ship agent in Australia was held liable to its shipowner principal for excessive charges demanded by a contractor for the disposal of dunnage and other materials related to the packing of cargo.

The P&I Club explains that in this instance the agent was asked by its principal to arrange for the disposal of the materials upon the arrival of the principal's ship in Australia, where strict local quarantine regulations apply.

To carry out the job, the agent obtained the services of a licensed disposal company which, although it had experience in getting rid of ship's rubbish and other more hazardous waste, was not the company the agent normally used to dispose of dunnage.

The agent instructed the disposal company by telephone, without verifying the total cost. The materials were disposed of and the disposal company submitted its bill for approximately Aus$70,000. When the owner questioned the unusually high charges, the disposal company said it had charged its usual rate for licensed waste disposal.

Subsequent enquiries by the agent, meanwhile, confirmed that the amount which its usual dunnage disposal company would charge to deal with dunnage and packing materials would have been approximately Aus$7,000.

The owner was unwilling to pay more than the reasonable costs that should have been incurred. Because the agent had been negligent in its selection of the disposal company, ITIC reimbursed it the balance of the invoiced sum, amounting to Aus$63,000, which the agent was liable to pay the owner.

ITIC director Charlotte Kirk says, "It is essential that ship agents and other intermediaries check all details of the transactions which they enter into. Telephone calls should be followed up with an email confirming the discussion. As this case illustrates, the consequences of failing to check can be very costly."

SAFE AND SECURE?

Storage facilities face several issues, from holding specialist equipment to problems of misappropriation

Misappropriation gives rise to claims that routinely run to millions of dollars, according to consultants Gray Page. Yet the drivers and mechanisms of misappropriation and the ways potential victims can mitigate the risks are not always understood.

Misappropriation, to all intents and purposes, is theft, but in insurance terms there is a distinction. Crucially, misappropriation can only be committed by people entrusted with the care and custody of someone else's goods and who, generally speaking, have the responsibility of keeping them safe and accessible to their owner.

Goods held in a third-party warehouses are most at risk, with fungible products – such as oil, grains, ores, sugar and rice – particularly vulnerable to misappropriation.

Misappropriation may start out on a small scale, perhaps as an expedient to overcome what the perpetrator hopes will be a short-term problem. But it can quickly get out of control.

If misappropriation from a warehouse goes undetected for weeks or months, and if the perpetrators are hiding their tracks by providing false stock information, building an accurate picture of what has gone wrong can be complicated.

Problems often come to light when the owner of warehoused goods finds their contractual buyer has been in protracted default on their purchase agreement. Perhaps this is because of shifts in international to local pricing, duty levels, local currency to US$ exchanges rates or adverse shifts in futures pricing. Perhaps the buyer has been found to have been helping themselves, just not paying for the goods in advance.

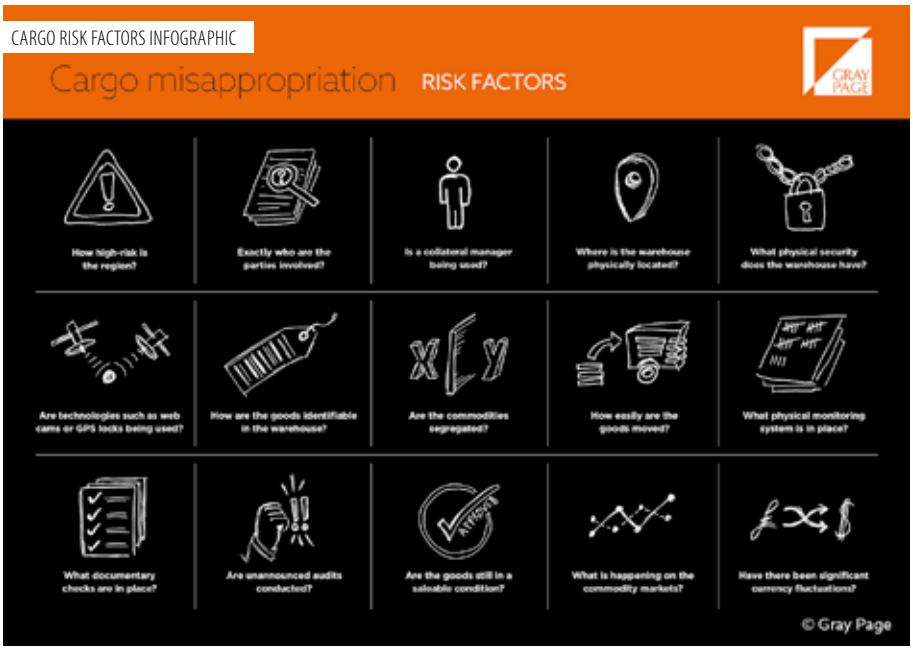
In a warehouse or depot where multiple consignments are not strictly demarcated, questions of ownership become moot and commingled cargoes provide opportunities for fraud.

Commodities are often warehoused in parts of the world where wages are low – often vastly so when compared to the value of the goods stored.

If the warehouse management is over-stretched and underpaid, if the security personnel are poorly remunerated and if the warehousing company or the buyer is struggling, it is not hard to understand why misappropriation occurs. Nor is it hard to see how the problem can remain hidden, often for protracted periods.

There are short-term ploys that can

CARGO RISK FACTORS INFOGRAPHIC



conceal the extent of misappropriation. The concealment can be as straight forward as commingling fungible cargoes or as labour intensive as creating hollow stacks.

It can involve misapplying seals, swapping and hiding pledge cards or re-dating old photographs to pass them off as new.

In the case of bagged commodities, such as sugar and rice, it can be as elaborate as re-bagging, presenting expired stock as new or as simple as misrepresenting the stock of one party as that of another.

All such scams can be thwarted. The key is due diligence before the goods are warehoused and effective monitoring once they are stored. The objective is to prevent the growth of a permissive environment where misappropriation can go unchecked.

Specialist advisory and consulting groups such as Gray Page can assist by investigating cargo theft, losses, damage, fraud and piracy, as well as providing maritime security consulting services.

SOLAR-POWERED STORAGE

A further issue facing storage facilities is the need to ensure that they are as green as they can be. There have been a number of initiatives recently to ensure that ports and terminals reduce their emissions and thereby environmental concerns.

DP World's Jebel Ali Free Zone, for example, recently launched the UAE's first green storage and warehouse facilities in Dubai, helping businesses to reduce their carbon footprint.

The launch of the solar-powered warehouse is in line with the operator's work under the United Nation's ninth Sustainable Development Goal's to build resilient infrastructure, promote sustainable industrialisation and foster innovation.

"By investing in these projects, we also encourage the development of new skills, driving economic growth and job creation," says Sultan Ahmed Bin Sulayem, DP World Group chairman and chief executive. "Our experience and studies have shown that a mindset to conserve and the development of sustainable business practices enables an efficient operation. This streamlines effort and saves resources, which enhances employee productivity and reduces cost. It is a win-win for all."

DP World says that while some cool storage facilities are now running entirely on solar energy, an increasing number of other Jafza warehouses will become more energy efficient as the operator's solar programme is rolled out over the coming years.

The solar project supports the UAE Vision 2021 for a sustainable environment and includes construction of the largest distributed solar rooftop project in the Middle East, with the installation of 88,000 rooftop solar panels on DP World's Dubai facilities.

It is estimated that the panels will produce enough clean power for 3,000 homes a year. DP World's Solar Programme also contributes to energy diversification in the region as part of Dubai's Integrated Energy Strategy 2030, which seeks to reduce energy demand by 30% by 2030.

MEDICAL STANDARDS

Specialist storage is another area that ports need to be able to handle, not least the storage of critical equipment such as medical devices.

GAC Dubai was recently awarded ISO 13485:2016 Medical Devices Management System certification, demonstrating its ability to provide quality warehousing, distribution and value-added services of medical devices that meet the high standards of the sector and the regulations that govern it. Certification comes after a stringent independent audit, which confirmed the company's compliance with the internationally recognised standard.

The company has also been awarded the Certificate of Good Pharmaceutical Storage and Distribution Practices for Medical Stores by the Dubai Ministry of Health after a statutory audit.

Only companies that have passed the audit and received such certification are permitted to conduct pharma warehousing operations in the Emirate.

Along with these facility and quality improvements in support of pharma logistics operations, the new certifications play a key role in GAC Dubai's contract logistics business strategy to move into specialised storage and handling operations.

Facility upgrades include construction of airlock loading chambers, temperature and humidity controlled storage from +4° to +18°, and remote temperature alarms and biometric access control.

Quality work streams, starting with the recruitment of an MOH-registered pharmacist in 2017, have progressed to include independent temperature mapping and an extensive suite of pharmaceutical-specific operating procedures focusing on cold chain integrity and stock control.

GAC Dubai Contract Logistics operates 18,000 pallet storage locations for pharmaceutical products offshore in Jebel Ali Free Zone (JAFZ), plus a further 150,000 pallet storage locations dedicated to food and beverage, retail and FMCG clients in JAFZ, Dubai South and onshore at Dubai Industrial Park.

IMPROVING COMPETITION

Ports have to weigh up the cost of providing storage in terms of space within the port facility. For example some Indian public sector port operators are finding they are losing out to the privately owned ones because they are reluctant to provide storage over longer periods in order to boost capacity and reduce congestion.

Some observers suggest that while handling charges for commodities such as coal may be lower in major ports than in private competitors' facilities, a user of the port's facilities might end up paying more because of excessive storage charges at major ports.

As a consequence, the Indian shipping ministry has announced plans to exclude storage charges from gross revenue calculations involving public private partnerships in order to improve public sector ports' ability to compete with private ones.

PUTTING SAFETY FIRST

Keeping staff in the bulk industry motivated prevents complacency – which can lead to accidents. Meanwhile, the issue of cat fines is coming to the fore...

While there is a recognised need for an improved understanding or method of measuring behaviour of materials, many people do not understand the practicalities that limit getting the issue properly dealt with, according to Mike Farnish of the Wolfson Centre for Bulk Solids Handling Technology.

Despite plenty of regulations and advice on best practice, enclosed space accidents continue to occur. One example relates to bulk silos. Farnish says that while new regulations have come into force during the past decade in relation to entry into silos, the fact remains "it is generally recognised that if you need to go into a bulk silo, it is a very dangerous proposition".

One concern is the practicalities surrounding entry into enclosed spaces, such as ships' holds. "If, for the sake of argument, you have just lowered in a front end loader to centralise the load before the end of the discharge, potentially that is one of the more dangerous times to do something in a hold because you have got cliffs of material retained around the grab area. Just how stable that material is is anybody's guess," Farnish says.

One fear, in such a situation, is that a person might be crushed, or alternatively asphyxiated in the time it takes a rescue team to arrive. Another issue is whether a rescue can be attempted without the use of heavy plant and equipment. If one approaches the issue on the basis that any ship unloading is going to be in a potentially hazardous situation and therefore rescue hardware needs to be at hand, then "you are interfering with the quayside operations and you've got to have a clear quayside so as to be able to work there safely". There is therefore something of a Catch 22 situation.

Farnish also points to the dangers of complacency with regard to operations. For any profession that has hazards associated with it, staff need to be trained. "The problem is the longer they are working on the job, the more complacent they can get," says Farnish. People believe that they have loaded the cargo many times without incident so why should anything happen? This, he says, is like playing Russian roulette.

Given that they are doing the same job, day in day out, keeping them motivated is key, otherwise this is where complacency creeps in. If people are motivated, they are safe. What the bulk industry needs to do, says Farnish, is look outside itself and benchmark itself against other industries where people are carrying out repetitive jobs. "It is all about keeping those people on the ball."

Improvements in safety come from the work culture, so it is therefore

essential to ensure people feel valued and part of the business.

When it comes to refreshing staff knowledge with the right degree of urgency, Farnish says: "If you give them the same course year in, year out, you are going to get diminishing returns." While drills are obviously a possibility, carrying out a drill where employees do not actually know it isn't a real-life scenario might be counter-productive because they might be traumatised by the event.

Farnish believes that the only way to keep on reinforcing the safety message is to show footage of real events. "That does bring it home, but you need a fairly large reserve of footage because, again, you don't want to show the same thing each year," he says.

He describes a conference and exhibition in the US where a US safety institute used simulation techniques – with a mannequin in an enclosed drum – to demonstrate how much force was required to extract a person submerged in a substance such as grain. The message was how dangerous it was to attempt to extract someone from such a situation without endangering oneself. "Whoever is trying to rescue you would have to attach a cable to your harness, assuming you had one on, or alternatively dig down and get the cable under your arms," says Farnish.

Other training scenarios involved interaction with cliffs of material. In a ship's hold, cliffs of material impacted in the hold could, if undermined, collapse a lot quicker than many might expect.

"The trouble with some of these deposits is that you can undercut them for quite a way before they actually give. They have had a week's worth of voyage time and compaction to gain strength and adhere to the internal surface of the hold. Until you start playing with them, you have no idea how strong they are," he says.

Farnish believes that health and safety areas are required, where port operators – or those responsible for unloading – can be given a hands-on demonstration of trying to pull a body out of a mass of grain, so that they understand what a rescue actually entails.

One way to carry out such a demonstration would be to use a container holding four cubic metres of an ore or grain and carry out a training exercise to demonstrate the force required to get someone out of it.

"It would be quite an eye opener," says Farnish.

The Wolfson Centre is in the early stages of planning a two-day short course for Port and Terminal Operations for Bulk Cargoes on 12–13 March 2019, at the University of Greenwich, Chatham, Kent. Contact wolfson-enquiries@gre.ac.uk for more details

CAT CONCERNS

In the run up to the 2020 deadline on low sulphur fuel, the issue of catalytic fines in LSFO is back on the agenda, with warnings from insurers about the dangers of engine damage.

Evidently the demand of LSFO is increasing and will continue to do so in the run-up to the deadline.

Although the sulphur cap is designed to reduce emissions, it also raises the issue of cat fines, which are found in greater quantities than in high sulphur fuels.

ISO Standard 8217:2012 introduced a maximum permissible 60ppm level of cat fines, expressed as Aluminium + Silicon, for marine residual fuels, a reduction from the 80ppm levels in ISO 8217:2005. The level of 60ppm Al+Si is maintained in the latest published ISO 8217:2017 Fuel Standard, Margrete Nordahl, Claims Director at Skuld, explains in advice by the P&I Club.

"Engine manufacturers generally recommend a maximum of 15ppm level of cat fines in the fuel entering the engines. As this level is significantly lower than the levels specified in the ISO Standards, it is essential to ensure adequate fuel handling and purification equipment and procedures are in place onboard to effectively bring the levels of cat fines in the fuel below 15ppm," she says.

As cat fines are very hard, they embed in the softer metal surfaces of cylinder liners, piston grooves and rings. Cat fines are particularly damaging to cylinder liners because their surfaces are not polished or smooth.

The Joint Hull Committee has issued recommendations on what vessels should do to reduce the risk of engine damage through cat fines:

"It should be ensured that sufficient numbers of empty and clean tanks are ready to receive the new fuel and that there is sufficient existing fuel onboard to allow time for testing and receipt of analysis reports, in order that engineering advice can be acted on before the new fuel is used.

"Drip samplers and equipment needed for taking representative samples of the fuel during bunker should be prepared and ready for use."

Other precautions include taking representative samples from each bunker source during bunkering, arranging a speedy analysis of samples and holding off use of new bunker before a fuel analysis has been completed.

This might include placing newly received bunkers in separate tanks to avoid blending, thus ensuring that fuels being blended are not incompatible.

Water and settled bottom sediments from fuel storage, settling and service tanks should be drained frequently, Nordahl recommends.

"Never by-pass fuel filtering equipment. It could result in introduction of contaminated fuel to the engines," she says.

Equipment should be properly maintained and cleaned on a regular basis. The cleaning programme should be increased in frequency in cases where fuel quality is suspected of being poor, she adds. There also needs to be an adequate supply of spares on board the ship, to ensure that purifiers are maintained in good condition.

"If a ship's engineers see any signs or have suspicions that damaging levels of cat fines have entered the engine(s), they must take immediate actions necessary to prevent damages or escalation of damages in the vessels machinery," Nordahl says.

Prevention is better than cure is the clear message.

SUPPORT SYSTEM

The Great Lakes and St Lawrence Seaway has a vital role to play in the movement of bulk cargoes worldwide, with construction having a vital role to play

Great Lakes-St. Lawrence shipping adds 180,000 jobs and $26bn to Canadian economy, according to a recent study. Cargo shipments to ports on the Great Lakes-St. Lawrence River waterway generate CDN$60bn worth of economic activity and 328,500 jobs in Canada and the US.

LOCKS ALONG THE ST LAWRENCE SEAWAY
© CHAMBER OF MARINE COMMERCE

In 2017, more than 230 million metric tons of raw materials and finished goods were transported by ships to and from ports via the waterway, which includes the Great Lakes, the St. Lawrence Seaway and the lower St. Lawrence River. This international and domestic cargo was worth over CDN$100bn.

According to Canadian Chamber of Marine Commerce president Bruce Burrows: "Great Lakes-St. Lawrence shipping is a key driver of the Canadian economy, supporting more than 181,000 jobs and carrying raw materials and finished products on behalf of businesses across the country.

"This study demonstrates the value of investing in port and lock infrastructure along this key binational trade and transportation corridor that connects cities within North America and is a gateway to international markets.

"The 2017 shipping season saw significant cargo increases fuelled by global economic recovery and new business wins. We have great potential to build on this momentum to deliver further economic growth for Canada."

The study shows that marine shipping on the waterway is used by many industry sectors of the economy including agriculture, manufacturing, mining, energy and construction among others.

Sean Donnelly, chief executive of steel producers' ArcelorMittal Dofasco says: "Great Lakes-St. Lawrence shipping provides a critical business advantage for ArcelorMittal and has been an integral part of our operations from the beginning. More than 185 ships deliver 5.2 million metric tons of iron ore and coal to our Hamilton docks every year for steel production, as well as other materials such as steel slabs and coke. It provides a direct, cost-effective and sustainable way to transport these huge volumes of raw materials."

According to Carsten Bredin, vice-president at Richardson International the waterway represents a key corridor for Western Prairie and Ontario soybeans, corn and wheat. "Richardson International ships a significant portion of its grain business through our terminals in Thunder Bay, Hamilton and Sorel to markets in the US, Mexico, South America, Middle East and Asia. Our ability to use marine shipping allows us to get goods to market quicker and most cost effectively."

Phil Guglielmi, general manager at Redpath Sugar adds that the company's Toronto location was specifically chosen to service the Ontario food and beverage processing sector, a sector that

generates $41bn in revenue, exports $7.6bn in product and provides over 130,00 direct jobs.

Redpath uses the seaway to transport raw sugar from as far away as Central America and Brazil. Each vessel of 20,000 metric tons of raw sugar represents 500 to 600 truckloads travelling over 500km of strained highways and congested downtown Toronto streets, he says.

"The jobs supported by the maritime industry include not only those located directly on the waterfront — shipyard workers, stevedores, vessel operators, terminal employees, truck drivers and marine pilots — but also grain farmers, construction works, miners and steelworkers," says Steven Fisher, executive director of the American Great Lakes Ports Association. "Many of these jobs would vanish if not for a dynamic maritime industry."

The study was conducted by Martin Associates. It was commissioned by a coalition of US and Canadian Great Lakes and St Lawrence Seaway marine industry stakeholders. According to the survey, the location of steel mills, alumina smelters and dependent iron ore, salt and alumina mines in proximity to ports and marine terminals underscores the importance of the transportation system in providing raw materials to the region's industrial economy.

The top five cargoes transported on the bi-national system by volume are iron ore, petroleum products, stone/aggregates, coal and grain.

Meanwhile, construction work was a major driver in bulk products being lifted in the St Lawrence Seaway this summer, with asphalt, cement and stone as key cargoes on the move.

There was close to a 38% increase in asphalt cargoes shifted in the first month of summer, according to the Canadian Chamber of Marine Commerce. Major building projects across the region have been driving increases, according to the Chamber's Burrows: "Grain exports are also up this season and illustrate the importance of marine transportation to so many of Canada's economic sectors."

Overall, cargo shipments on the St Lawrence Seaway between March 29 and June 30 totalled 12.1 million metric tons, down by 2% compared to the same period in 2017. The slight decrease is due to the later and slower start of the season, as well as a decline in salt shipments.

Grain shipments via the Seaway totalled 3.1 million metric tons, up 7.5%t compared with the same period in 2017. Liquid bulk shipments, which include petroleum and asphalt products among others, totalled 1.8 million metric tons — up 28%.

Increases in petroleum shipments are mainly due to the rebalancing of stocks following scheduled maintenance shutdowns of several refineries in the region. Stone shipments were up 32% and cement shipments were up 24%.

"Some of the world's highest-quality grains move from farmers' fields in Minnesota and North Dakota through the Port of Duluth-Superior [on the Seaway] to customers in countries across Europe, North Africa and points beyond," Kate Ferguson, director of business development for the Duluth Seaway Port Authority, said recently.

"When it comes to shipping everything from agricultural products and iron ore to heavy equipment and project cargoes, the Port of Duluth-Superior links the heartland of North America to the world."

The Port of Hamilton has also logged a 21% year-over-year increase in cargo tonnage. The main driver is agricultural cargo, notably exports of grain through the port's three grain terminals — owned by Richardson International, Parrish & Heimbecker and G3 Canada — as well as imports of fertiliser. Agricultural cargo is set to reach the million metric tons mark.

Steel-related commodities, including raw materials for steelmaking represent another strong area for the Port of Hamilton so far this season. Shipments are about 14% on 2017 figures for the same period. This activity is attributed to new momentum at Hamilton-based steelmaker Stelco and continued robust activity at ArcelorMittal Dofasco, according to the Chamber. Imports of liquid bulk products such as asphalt and gasoline are up 49%, although liquid bulk is only a small part of the port's business.

"We're happy when efficient transportation can give the Canadian industries we serve a competitive edge," says Hamilton Port Authority chief executive Ian Hamilton. "Cargo growth like we're seeing this season is an indication to us that we're succeeding in delivering value."

This year, the port has started the first phase of a major project to reconstruct a critical piece of marine infrastructure at Pier 12. The previous dock was over 60 years old and the maximum load permitted on the dock had been reduced over time, thus limiting its use. Pier 12 is one of the port's busiest piers and handles more than 700,000 tonnes of cargo each year, including fertiliser, aggregates, salt and steel.

Construction began on the Pier 12 west wharf in early 2018. The project involves reconstructing the entire west half of the pier by installing a new steel sheet pile wall immediately outside of the existing wharf, leaving the existing wharf in place.

The new dock structure will be designed for an increased surcharge load capacity of 1,000lbs per square foot, double the original dock's capacity of 500lbs per square foot.

The reconstruction of the western half of the Pier 12 wharf is being undertaken in three stages. The first stage is being completed this year, with the second and third stages to follow in 2019 and 2020.

Meanwhile, at the Port of Thunder Bay, shipments of traditional bulk cargoes of grain, coal and potash that make up the majority of the port's cargo, were on par with five-year averages for the month of June.

Thunder Bay's project cargo corridor was active, with shipments of steel and windmill parts arriving at the port's general cargo facility, Keefer Terminal. Cargoes were staged in the terminal's laydown area before being loaded to rail and truck to destinations in western Canada.

BULK BOOM

A number of Australian ports have been pushing ahead with expansion plans aimed at the bulk market, with new investments in areas including Newcastle and the Eyre Peninsular

NEW INFRASTRUCTURE, INCLUDING A NEW UNLOADING CRANE

Stressing its commitment to diversifying trade throughput, Port of Newcastle has official launched the Newcastle Bulk Terminal development at Walsh Point, Kooragang Island.

Some $33m has been earmarked for investment in bulk cargo handling equipment, associated infrastructure and additional strategic initiatives.

The project includes combining the Kooragang 2 and Kooragang 3 berths under one banner as a rebranded Newcastle Bulk Terminal, as well as equipment changes including the demolition of existing crane unloader infrastructure, the construction of a new crane unloader and associated infrastructure, and the provision of temporary mobile hopper unloading infrastructure.

Kooragang 2 and 3 berths are the busiest common user berths in the port, handling fertiliser, meals, alumina, magnetite, cement and a range of bulk liquid commodities. The two existing ship unloaders, which are now over 50 years old, will be dismantled and replaced by a new high-capacity ship unloader, conveyor structures, wharf upgrades and an electrical system.

Mobile hoppers will provide continuity for customers at the Terminal while the new equipment is constructed.

Port of Newcastle's executive manager for operations and infrastructure, Keith Wilks, said the project represented a significant investment by the Port of Newcastle into the next generation in bulk handling infrastructure.

"The Newcastle Bulk Terminal is the centrepiece of the bulk cargo precinct within the Port of Newcastle. It is designed to cater for a diversified cargo mix on a common user basis

"The investment in new infrastructure, including a new unloading crane, will provide additional terminal capacity for new trades as well as growth from our existing customers.

"In recent years we have been seeing good growth in fertilisers, cements, and meal imports."

So how does environmental concern affect what is happening at the port? "The existing cargo handling cranes and equipment were 50 years old. The environmental expectations of the community and the regulator have changed over that time," he explains.

"This new crane will be equipped with the latest environmental control measures. The port is committed to

leading industry best practice in the handling of loose bulk cargoes.

The port is also implementing a new service model which will involve the provision of environmental services at the terminal. Previously, the environmental services were performed by each individual user, such as the stevedores, on an event-by-event basis. This type of service provision lacked economies of scale, consistency of application and innovative ideas that come with a dedicated provider.

"We went to open market tender for a single service provided under Port of Newcastle's direction," says Wilks. "Environmental services include 24/7 mechanical sweeping, equipment cleaning, post vessel berth cleaning and onsite bulk cargo waste management."

So what kind of crane unloader technology and associated infrastructure will the facility consider using?

"The crane will be a slewing/luffing grab crane that can accommodate a diverse range of cargo types and significantly increase efficiency. Kerman Contracting is delivering the project for the Port of Newcastle and has partnered with Tenova Takraf who will design and build the crane," says Wilks.

"The Newcastle Bulk Terminal will deliver best practice in safety and environmental management, while driving efficiency and maximising trade growth. We have listened to our customers, who have requested more capacity to grow their cargo volumes, and to the NSW Environment Protection Authority, which wants to see best practice in cargo handling. The new equipment will deliver on both fronts, providing state-of-the-art environmental capabilities, and delivering faster unloading to enable customers to access the berth quicker, reducing vessel turnaround times and moving more cargo across the berth.

"The launch of the Newcastle Bulk Terminal is only Stage One. Stage Two of the Walsh Point Master Plan will include minimising cargo double handling, reducing cargo transfer points and removing trucks from the berths through the use conveyor systems," Wilks explains.

Port of Newcastle's chief executive Geoff Crowe adds that the port has embarked on an ambitious diversification strategy and the development of the Newcastle Bulk Terminal was a key part of these plans.

"Newcastle is a global gateway for bulk and general cargoes, but it needs to continue to diversify. The development of the Newcastle Bulk Terminal is a key component in this strategy, as is the development of a container terminal," said Geoff. The project is due for completion at the end of 2019.

NEW ERA

July saw another construction milestone for a new port project with an official sod-turning event at the T-Ports Lucky Bay bunker site, which has marked the start of a new era in grain handling and exports on the Eyre Peninsula.

Planning for the port has been underway for several years with an innovative approach that involves a direct link between grain producers and the port. T-Ports CEO Kieran Carvill said at the ceremony: "We have been meeting with growers on the Eyre Peninsula and the enthusiasm and excitement for a real, tangible alternative grain supply chain in which they have equity is obvious.

"We know growers have been promised many things over many years but turning the sod today and having earthmoving equipment already at the site demonstrates this project is here to stay and we see a long and beneficial partnership with the Peninsula communities.

"We believe it will create a new way of business for local growers where, rather than the harvest rush to get grain into the bulk handling system, they may consider investment in on-farm storage to return benefits in cheaper delivery direct to port in the post-harvest period."

The $115m project features the Lucky Bay port facility, a state-of-the-art shallow draft transshipment vessel with a 3500-tonne capacity, grain storage facilities at the port with the capacity to hold 27,000 tonnes, bunkers at Lucky Bay with 360,000 tonnes of storage and up-country storage at Lock with the capacity to hold 150,000 tonnes.

Construction at the bunker sites at both Lock and Lucky Bay began in July. "This investment innovates upon the traditional port model and almost monopolistic grain supply chain in South Australia through proven transshipping technology that has been utilised in other industries for the past 20 years," Carvill says.

T-PORTS LUCKY BAY BUNKER SITE © T-PORTS

"The lower build cost and lower environmental footprint compared with traditional export port facilities in South Australia has made the financial feasibility of the investment easier to attain with a lower throughput requirement from growers. This model means growers can access multiple small ports that can load vessels up to and including panamax, allowing product to be exported profitably, which will prove a great benefit to Eyre Peninsula growers and South Australia itself."

Project developer T-Ports has appointed local construction company Ahrens to manage the 358-hectare Lucky Bay port site, near Cowell. The company is building the shallow harbour grain terminal with a projected completion date for Stage One during December, in time for shipping of the 2018/19 grain harvest.

The construction at the bunker has already begun, with the start of earthworks at both Lucky Bay and Lock. Lucas Total Contract Solutions will construct the Lucky Bay bunkers, while Buttrose Earthmovers will work out of the Lock site, which will feature 150,000 tonnes of storage space.

Carvill says the project is on track for completion ahead of the 2018/19 grain harvest season, with artist impressions of the port site recently unveiled. "Ahrens are well advanced in both the mechanical and civil design of the port," he explains. "Test pitting to check for suitable gravel and rubble materials at both Lucky Bay and Lock has also brought pleasing results."

Adelaide-based software management company Eka will develop technology allowing trade partners to view their transactions electronically as they happen.

"A major milestone has been the appointment of Eka for the installation of the inventory management system including web portal for grower interface," says Carvill. "The portal will allow growers and trade to see their transactions and stock levels in real time and undertake weigh-note transfers to facilitate fast payment."

GREEN INNOVATION

Meanwhile, the Australian hydrogen infrastructure company Hydrogen Utility (H2U) has awarded Thyssenkrupp a contract to perform a feasibility study for a new green hydrogen project.

A 30MW water electrolysis plant and a facility for sustainable ammonia production are to be built near Port Lincoln in South Australia. It will be one of the first commercial plants to produce CO_2-free "green" ammonia from intermittent renewable resources.

H2U chief executive Attilio Pigneri says the project is an "important milestone for Australia's shift to a reliable renewable energy future. The new facility will provide balancing services to the national transmission grid, fast frequency response support to new solar plants under development, supply green ammonia and other chemicals to the local farming and aquaculture sectors," he says.

"It will host the demonstration of novel supply chain technologies for the export of green hydrogen to markets in the Asia-Pacific region."

The planned facility will integrate different hydrogen technologies, including a multi-megawatt electrolyser plant and an ammonia production facility with a capacity of 50 tons per day. Both plants will be based on Thyssenkrupp technology. A 10mw hydrogen-fired gas turbine and 5mw hydrogen fuel cell will supply power to the grid.

INNOVATIVE DAMEN MEETS MARKET DEMAND

COMPANY NEWS

Seven years ago, the Netherlands-based Damen Shipyards Group recognised the increasing demand for transshipment barges. To meet demand the innovative company decided to develop and built a first series. To launch this new product, Damen decided to build two of these barges for stock. In this way they could ensure short delivery times of just a few weeks. This moment marked the beginning of a new player in the transshipment industry.

These barges are mainly utilised in the dry bulk transshipment industry, but can also be outfitted to handle containers. At Damen's headquarters in Gorinchem, the company worked on improving the design. They talked to operational experts such as the crews working on floating cranes and other specialists asking them 'where do you see opportunities to make it easier to operate, enhance safety and crew comfort? All this feedback gave Damen the direction required to come up with some new features distinct from other floating cranes.

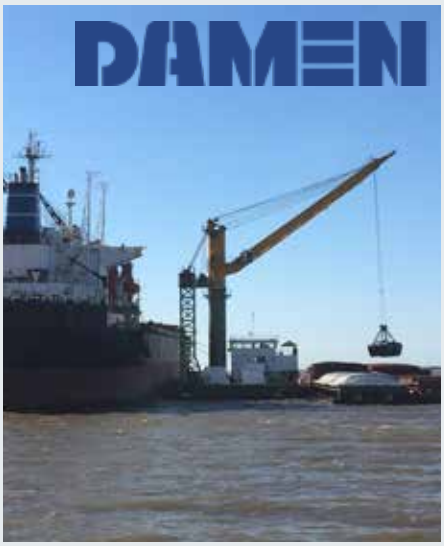
The focus was to design a low cost, safe, efficient and easy to operate transshipment solution for the global market. Working on the barge is made efficient, safe and comfortable by application of European quality accommodation, lots of storage space, a large workshop on deck and compliance with Class, MARPOL, MLC 2006 and IACS 99. The carbon footprint is reduced by using high efficiency Caterpillar generator sets which prove to have low fuel consumption. Liebherr is well known for its cranes and an excellent services department, which, together with Damen's global service network, ensures clients always have specialist engineers available when needed.

Not only is the cost price very friendly because of the optimised design, the operational costs are as well. Fuel consumption comes down to an indicative 190 L/h during operation and maintenance is very friendly because of components like a central greasing system and best practices in engineering for maintainability of components.

Where other transshipment designs are based on land-based cranes being redesigned for maritime use, putting a ship-crane on a barge has the big advantage on wear and tear. Original maritime cranes are known to be reliable over their full lifetime.

Damen has a wide portfolio making them a perfect supplier of vessels and barges for the full industry. Whether only a floating crane or a full logistics fleet of tugs, transport barges, crew suppliers and feeders is needed, their specialists are able to discuss projects in any phase for brown or greenfield developments.

DAMEN SHIPYARDS GORINCHEM
Phone: +31 (0)183 63 99 11
Fax: +31 (0)183 63 21 89
Email: info@damen.com
Visiting address:
Avelingen-West 20
Gorinchem
The Netherlands



GOING FOR GROWTH

The Netherlands is receiving a spate of investment that is enabling its ports to expand, particularly into eco-friendly areas

Expansion plans for increasing bulk cargo handling at a number of facilities in the Netherlands has been continuing over the past few months, with a number of new investments in technology.

One example is Laurenshaven terminal at Rotterdam – one of two bulk terminals operated by EBS – which has been investing in new cranes, the latest of which has a reach of more than 51m. The new Gottwald crane is part of plans for the major expansion of the closed storage capacity to more than 800,000m^3 in 2020.

The EBS expansion programme includes building three multi-purpose warehouses with a combined capacity of 126,000m^3, as well as the grant of a permit for the construction of a 50,000m^3 warehouse at the Europoort terminal.

The Port of Rotterdam achieved throughput of 232.8m tonnes in the first six months of 2018, down 2.2% on the first six months of 2017. However, the market share of Rotterdam by comparison with the other ports in the Hamburg-Le Havre range increased from 30.9% in the first quarter of 2017 to 31.2% in the first three months of this year.

There was a fall in wet and dry bulk throughput during the first half of the year, largely because of a decrease in throughput of coal, crude oil and mineral oil products. The decline was in large part due to falling coal transshipment resulting from the closure of coal-fired power plants, as well as a reduction in coke flows for the steel industry, according to the port.

Perhaps unsurprisingly, there was increased throughput of more eco-friendly products such as LNG and biomass, for which volumes more than doubled when compared to the previous year's figures for the same period. This development fits with moves that are afoot by the Netherlands' government to reduce industry's carbon footprint.

Waste-for-energy products are big business in the Netherlands, which is a big importer of waste to power its own plants in a more eco-friendly way. This seems likely to provide opportunities for companies exporting waste to continental Europe, from centres like the UK, irrespective of the outcome of Brexit.

As far as LNG is concerned, Rotterdam's Gate terminal announced in June that it will invest to increase the ship loading flow rate at the jetties for large ships from the current 2300m^3 per hour to 4000m^3 per hour to lower port time for vessels, according to Vopak, a global storage company.

"This investment will allow Gate terminal to load the new standard size vessels of around 180000m^3 in less than three days. The investment entails a de-bottlenecking of the pipeline systems used to deliver LNG from the storage tank to the ship and can be installed without a plant shutdown. The construction starts this year and is set to conclude after the summer of 2019," says Vopak.

"Loading of LNG in ships and transshipment activities in North West Europe have increased over the years. The liquid spot market of LNG leads to quick successions of loading and unloading periods. This dynamic of the LNG market requires more flexibility and efficient operations. With this investment Gate terminal will strengthen its pivotal role as the LNG Hub terminal for North West Europe."

Meanwhile, in Amsterdam, an enormous solar project is getting underway, with more than 41,000 solar panels that will generate sustainable energy in the Port of Amsterdam for logistics services provider CWT.

In addition to transport and sea shipping operations, CWT is active in the Port of Amsterdam in fields including storage of cocoa and coffee. To carry out these activities in a sustainable manner, CWT has opted to use the roofs of its buildings to generate solar power. A combined total of 41,114 solar panels will generate more than 11,000,000 kWh of green electricity.

INTEGRATION FOR ENERGY

Simadan Group announced in July a takeover by Dutch investment firm Parcom Capital and the British firm John Swire & Sons. Simadan Group is made up of five business units: Rotie – a specialist in the collection and processing of used cooking oil and organic waste material; Noba – a producer of high-energy fat products for the European feed industry; Biodiesel Amsterdam (BDA) – a leading producer of second-generation biodiesel made from used fats and oils; Tankstorage Amsterdam (TSA) – a tank storage company for vegetable oils and fats and biodiesel, and Tank & Truck cleaning Amsterdam (CSA) – a tank and truck cleaning service in de port of Amsterdam.

As part of the transaction and in line with its renewable energy strategy, John Swire & Sons will integrate business units BDA, TSA and CSA into Argent Energy. According to Jim Walker, managing director of Argent Energy: "This investment will allow Argent to develop our capability of recycling waste fats and oils in the production of biofuel. It further underlines Swire's commitment to contribute to the global reduction of CO^2 emissions, just as the UK and the EU are legislating for the continued decarbonisation of transport to 2030 and beyond."

TRANSSHIPMENT DOWN

Transshipment in the North Sea Canal Area at the seaports of Amsterdam, IJmuiden, Beverwijk and Zaanstad declined to 49.4 million tonnes in the first half of 2018, a decrease of 5.1%. The Port of Amsterdam saw transshipment fall by 4.8% to 40.2 million tonnes.

In IJmuiden, transshipment declined to 9.3 million tonnes (down 4.4%), Beverwijk registered a decline to 282,000 tonnes (down 18.6%) and in Zaanstad transshipment fell to 84,000 tonnes (down 59.3%). Declining throughput has once again been driven by coal and oil cargo flows. In Amsterdam, transshipment of coal was down 25.5% in the first six months of 2018 to 6.4 million tonnes.

Transshipment of oil products also declined by 6.7% to 22.1 million tonnes. The latter decline was due to factors including maintenance at one of the terminals and reduced trading in the futures market, especially for diesel.

Transshipment of other dry bulk cargo in Amsterdam was up 16.8% to 5.2 million tonnes, due to much higher imports of construction materials such as sand and gravel. Transshipment of agribulk was up 18.5% in the first half of the year to 3.9 million tonnes, while transshipment of other breakbulk, including ro-ro, was down 1.6% to 889,000 tonnes.

Koen Overtoom, chief executive of the Port of Amsterdam, says: "The construction boom in the Netherlands is clearly visible in the sharp increase in other dry bulk cargo, which includes sand and gravel. Whether the decline in oil products will continue is difficult to predict. We are a truly international trading port, meaning that geopolitical developments affect the volumes that pass through our port. Oil products continue to be an important cargo flow for us at this time."

POSITIVE SIDE EFFECTS

Reducing emissions of sulphur dioxide from coal-fired power plants has one side effect that adds to the obvious environmental benefits, according to storage provider Eurosilo. The flue gas desulphurisation process produces high-quality FGD gypsum. Compared to mined natural gypsum, the industrially produced gypsum is more pure and therefore offers a wide range of environmentally friendly applications, the company says.

"This turns the output of flue gas desulphurisation into a basic material for industries around the world. From agriculture for soil improvement to panel products in construction, cement production, water treatment or glass making."

Turning the production of FGD gypsum into a cost-effective operation does, however, present strong challenges at operational plant sites. The wet output from the desulphurisation installation needs to be transported to a facility where it can be dewatered. From there on, the FGD gypsum needs to be stored at another facility ready to be loaded into trucks. This requires ground space that is usually not available.

Also operators, power shovels and transport are needed. The Eurosilo concept incorporates three functions into one unit, requiring only a third of the ground space. Dewatering, storage and load out are all located in one building with a fully automated silo system.

ENVIRONMENTAL DISCOUNTS

For some years, the Port of Amsterdam has been giving discounts on port dues to vessels listed in the Environmental Ship Index (ESI) that have attained an ESI score of 20 points or higher.

From 1 August, the authority added another discount, notably doubling the maximum ESI discount for vessels that are in the possession of an ESI certificate and use LNG for their main engine or auxiliary engine. In order to encourage the transition to LNG, there will be a LNG bunker pontoon in place at Amsterdam by the end of the year. Shoreside availability of LNG has been a major drawback in promoting LNG use as an alternative fuel in ports worldwide.

BULK BUYING

While many Middle Eastern ports have been developed to meet the demands of the container trades – not to mention liner services – there are now signs that they are keen to build up the bulk cargo side of the business

Diversification is the name of the game at the Port of Salalah in Oman, where Arabian Sea Port Services – a joint venture between Spain's Algeposa group, Oasis Development and Al Thabat Holding – has commissioned an agricultural bulk terminal at the port.

The development has been presented as part of a programme to reduce Salalah's dependence on container transshipment, a move that makes sense in the light of tight margins in the container segment.

The first phase of the project encompasses 25,000m^2, set for development as 60,000 tonnes of storage capacity of grain in bulk with handling capacity of 15,000mt of grain daily. Other services are likely to be provided, such as bagging facilities, quality and pest control.

During the second phase of the project, the aim is to increase the handling capacity of the facility so that it will be able to handle approximately 500,000mt of bulk cargo per annum.

Port of Salalah chief executive Andrew Dawes says the new operation will mean the port can provide improved services to existing users as well as attracting new customers who are interested in using the port as a hub for the region, notably those in the food and agricultural products segment

Algeposa has invested around US$12.5m in the Salalah agribulk facility, making it one of its biggest projects outside of Europe. Iker Elicegui, country manager for the Spanish group, said when the new project was commissioned that the port's proximity to major centres in the Middle East and Africa, along with its good connectivity, made it attractive for customers needing a cost-efficient and reliable supply chain. The first phase of the facility was already attracting huge interest from the company's customers looking to set up operations in the region.

Algeposa also sees significant potential for the facility to act as a catalyst for downstream industries in food processing, packaging and labelling, for example, within the Salalah hinterland.

Salalah also completed its first ship-to ship-transfer operation recently as part of the port's expanding service offering in 2018.

"Our vision is to make our customer's supply chains work better, more efficiently and safer," says Dawes. "Our new offering of ship-to-ship transfer of bulk liquids is designed to serve the regional market and Africa's economic demand."

As part of Salalah's ongoing general

cargo terminal investment programme, the port has placed a £5m contract with Northern Ireland-based company Telestack to supply ship-loading machinery capable of handling a range of bulk goods at the port, including limestone and gypsum, This is Telestack's largest ever contract and is expected to be delivered later this year.

Salalah is part way through a major infrastructure investment programme, designed to cater for the export requirements of its local mining, quarrying and cement industries. Telestack commercial director Malachy Gribben says: "Telestack's investment in new product development, coupled with input from our industry-leading global dealer network, produces the most innovative and consistently reliable equipment in the material handling market.

"Endorsements such as the Port of Salalah contract are a massive achievement for us, but we don't take this success lightly. In this business you have to earn experience and our customers deserve our continual investment," he says.

Meanwhile, there was more grain investment when Oman-based Sohar Flour Mills – a partnership between Atyab Investments and United Arab Emirates-based Essa Al Ghurair Investments – announced that it plans to construct a number of steel silos with a grain storage capacity of 110,000 tonnes at the port of Sohar. The investment is likely to help boost bulk cargo shipments through the port, as well as secure food supplies in the country.

Sohar Port and Freezone has also signed an agreement with Sohar Flour Mills for the lease of a 10-hectare plot within the port area for the construction and management of 12 grain storage silos, each boasting a storage capacity of 13,000 tonnes. Under the terms of the agreement, Sohar Flour Mill will also oversee the construction and development of a new agro bulk terminal and deep water berth, which will be dedicated to handling the rapidly growing volumes of agro commodities moving through Sohar Port.

Highlighting the growing role played by the food sector at Sohar port and Freezone, chief executive Mark Geilenkirchen says: "Enhancing the nation's food security has been a matter of great focus for the government in recent years. Aligning with Oman's National Food Security Strategy, we moved to set up a dedicated 'Food Cluster' within Sohar, which essentially forms the basis for an entire up-stream and down-stream food production, packaging and distribution eco-system.

"The construction of these large capacity grain silos highlights the rapid growth and development of the food and agriculture sector in Sohar, and aligns with the country's continued economic diversification efforts," he says.

Sohar Flour Mills has already invested in a state-of-the-art flour mill located at the port, which is expected to become operational this year. In its first phase, the facility will have a wheat milling capacity of 550 tonnes per day with a potential to expand to 2000 tonnes per day in later phases. The mill will also be capable of producing all types of specialty flours to cater to the different regions of Oman, as well as developing exports.

The plan is to build an agri bulk terminal at the port, which will be complemented by the new grain silo complex. The terminal will be dedicated to the import and export of agricultural bulk, notably wheat, rice, barley and other grains, and will be able to load and unload grain at a rate of 600 tonnes an hour. The port cluster will also house of a sugar refinery, with added-value food production, packaging and distribution facilities planned for the future.

Over in Iraq, contracts have recently been awarded for new port construction projects, including one with Mitsubishi Corporation. Awarded by the General Company for Ports of Iraq, the contract covers a port rehabilitation project in the country's southern region of Basra, and is valued at approximately $110m. The project is being funded through Official Development Assistance loans provided by the Japan International Cooperation Agency.

The project will be carried out through a partnership between Mitsubishi and multiple international contractors, including two Turkish companies – energy infrastructure provider Calik Enerji and construction firm Gap Insaat. Both part of the Calik Holding group, these two sister companies will play a major role in executing construction while MC will be responsible for overall project coordination and serve as the prime contractor, facilitating the import of steel structures and other necessary supplies from Japan.

The aim of the project is to modernise existing industrial port facilities around Basra by expanding the oil products berth at Khor Al-Zubair Port, as well as building a new service berth for working ships and service boats at Umm Qasr Port, Mitsubishi says.

Port rehabilitation in Iraqi is essential given increasing demands for port infrastructure, which is growing rapidly as the volumes of trade flowing in and out of the country grows. According to Mitsubishi: "Rehabilitating this critical infrastructure will also contribute to further stabilising the country's economy as post-war reconstruction advances.

"This project is particularly noteworthy given that Khor Al-Zubair and Umm Qasr are the only ports currently in operation in the Basra region, where a system of ports located in the 48km wide tip of the country wedged in between Iran and Kuwait along the Persian Gulf gives Iraq its only outlet to the sea."

In addition to this project, Mitsubishi intends to continue leveraging provisions under the Japanese Government policy framework for promoting export of "high-quality infrastructure" to identify opportunities that support Iraq's efforts towards reconstruction, economic development, and increased quality of life.

HAMBURG HUB

Venue for this year's Bulk Terminals conference, Hamburg is one of the key cities at the heart of global shipping and water-borne industry has shaped it for centuries

Hamburg's location on the shores of the Elbe — which, as Germany's second largest river, connects the economic hubs in the south with the open sea — has allowed the metropolis to become one of the world's most important centres for trade and transshipment.

Not only has the city attracted maritime business covering a wide range of different segments, but it is equally attractive to large cruise ships and general tourism. Economic figures for the port of Hamburg in the first half of this year show just how important it is as a hub, not only for more conventional general and bulk cargo, but also container traffic and cruise vessels although, like many centres, the port's business has been affected by market conditions.

In the first half of 2018, the Port of Hamburg achieved total throughput of 66.5 million tons. That represented a moderate downturn of 4.9%, with the downward trend slowing in the second quarter. General cargo throughput at 45.5 million tons (down 2.2%) and bulk cargo throughput at 21.1 million tons (down 10.4%) contributed to the total.

Hamburg has been taking steps to improve air quality at the port. Innovative technology developed locally is set to enable cold ironing for some ship categories, allowing them to draw the power they need for on-board operations from a new kind of mobile generator. Becker Marine Systems, Hapag-Lloyd AG and Hamburger Hafen und Logistik have been testing the new technology as part of a joint pilot project since the start of the year.

Recent months have seen a number of new developments in and around the port aimed at both strengthening its' ties with its neighbours and expanding the range of facilities it offers.

Just how closely the German economy is linked to the state of Latvia was showcased at an event in Liepaja recently involving Port of Hamburg Marketing, the ports of Lübeck and Liepaja, as well as Stena Line.

Speaking at the event, Ingo Egloff, joint chief executive of Port of Hamburg Marketing elaborated on how important the Baltic Region, with the upcoming Baltic States, is for Hamburg with a dense network of feeder liner services connecting Latvia to the port.

Ports have also seen the benefits of co-operation when it comes to data exchange and one good example was a collaborative project launched earlier

this year between HVCC Hamburg Vessel Coordination Centre and Rotterdam port authority. The ports will exchange relevant data through a digital interface so terminals can optimise their resource planning.

There have also been moves on fairway adjustment on the Outer and Lower Elbe, which are good news for shipping and Hamburg's port customers throughout the world. The legal preliminaries are now in place that will enable construction to start.

On the tourism front, the city offers its guests a large choice of guided tours and city walks, as well as boat trips on the River Elbe and the Alster Lake. There are even bus tours taking visitors through the container port. Many of Hamburg's tourist attractions are within walking distance or can be reached conveniently by local public transport.

These include the town hall — the sixth in the history of the city. The Speicherstadt, meanwhile, is more than 100 years old and is considered the world's largest contiguous warehouse complex; in 2015, it was declared a UNESCO World Heritage Site. Situated in the former free port, the red-brick building with its thick walls, copper roofs and blocks and tackle was built on oak piles between 1883 and 1888 and it is among Hamburg's main attractions.

The Speicherstadt's spice museum provides insights into the history of the warehouse complex and the lives of stevedores at the time, while the adjacent wine cellar serves as a venue for parties. Restaurants, cafés and quaint historic warehouse floors offer unique event venues.

Hamburg's most famous and most notorious street has become something of a recognised cultural asset. These days, the Reeperbahn is lined with night clubs, theatres, musical venues, restaurants and bars that provide for a colourful nightlife experience. The street owes its slightly seedy reputation to legions of sailors, who in the old days would have spent their week's pay in the pubs and brothels of St Pauli.

TALK OF THE TOWN

Improving safety, streamlining operations and ensuring environmental protection will be the topics for discussion at the Bulk Terminals 2018 conference this year

Following the success of our first conference in London in October last year — which featured high-level speakers from all sectors of industry and government, including former UK Deputy Prime Minister John Prescott — the Association of Bulk Terminal Operators is taking Bulk Terminals 2018 to Hamburg for a two-day event at the Radisson Blu hotel on Tuesday 23-Wednesday 24 October.

With terminal case studies and a programme of expert speakers providing insight, advice, solutions and networking, Bulk Terminals 2018 is the only event all those involved in the transportation, storage and handling of bulk commodities need to attend. We will also have the opportunity to hear from speakers from the port and city of Hamburg and its business users, who will be able to share their experiences of running and operating from a world renowned hub.

The conference will provide opportunities to understand the challenges the bulk terminal industry faces and learn from experts on how to keep customers and suppliers happy. It also offers invaluable networking opportunities with industry peers, consultants and investors as well as technology suppliers.

One question on the lips of bulk operators is whether the optimistic first half forecasts for the bulk trades will be sustained throughout 2018. Setting the scene for terminal operations, Bulk Terminals 2018 will undertake a strategic overview of the markets and future trends.

There have certainly been a number of high-profile orders for ships in the bulk segment in recent months — a good indicator of optimism — while the hope is the industry will not repeat the mistake of over-ordering, which has dogged it in years gone by.

Safety and environmental factors are investment drivers, as well as ensuring safe ships that comply with increasing levels of regulation. Smartening up the industry's act on safety continues to be a priority and industry eyes have been fixed on events following a number of accidents in the bulk cargo segment. Meanwhile, other challenges include the sulphur cap set to come into force

at the start of 2020, plus other rule changes including those to ballast water treatment regulations and cyber security.

Addressing ways to minimise the hazards of handling bulk cargo and how to prepare for the inevitability of fire and explosions will feature in the programme — as will what can be done to improve safety training without which there will be little or, at best, slow progress.

The environment and sustainability are steadily moving higher up the maritime agenda, driven by regulation and emissions concerns. Ballast water and other regulations are seen by many as a problem for ports, but may be an opportunity for others. Similarly, other green port initiatives, such as cold ironing and controlling dust emissions in ports, as well as ensuring safe and secure storage facilities are increasingly important.

Other investment drivers, including new and smart technologies that enhance operational efficiency, will be assessed at the conference, as well as which systems are suitable for what application. With the increasing need to be flexible and adaptable to changing markets, a further variable is added to purchasing decisions.

Access, location, connectivity, technology, equipment and operational efficiency are all vital and well known factors contributing to a bulk terminal's ability to attract customers. We will consider whether terminals can improve their performance with better marketing.

Meanwhile, both physical and cyber security remains a particular weak spot for the ship-shore interface. Ports and terminals are not only at risk from breaches in their own security, but also their customers and others in the supply chain. Should terminals suffer a cyber attack — or for that matter natural disaster, significant power loss, or terrorist incident — do they have a robust business continuity plan in place and, if so, how do they test it?

As well as insight and advice on these issues, the conference also offers a number of events to its delegates, including a trip around the port facilities by sea. Conference goers can experience the amenities of the luxury launch ***Diplomat***, which incorporates state-of-the-art technology and equipment. The passenger compartment has a wireless microphone system and a large plasma screen (with computer connection options) with all the features of contemporary presentation technology. A GPS-based, digital port map enables precise orientation in the confusing port area and on the Elbe and is thus an optimal supplement to company presentations and demonstrations.

Other supplements include the Deutsche Bahn (German Railway) event ticket, with special rates for delegates, speakers, exhibitors and sponsors to get to and from Hamburg by train within Germany. This is available from every train station in Germany (including DB station in Basel, Switzerland).

Meanwhile the official Hamburg tourism App is free of charge, available in English and German with plenty of useful features for every visitor.

For the latest programme and registration details please see: www.bulkterminals.org/events.

TERMINAL TALES

RELUCTANT REGULATION

As anyone in shipping will tell you, the industry is never fast off the mark when adapting to new regulatory regimes. Getting to grips with the 2020 sulphur cap aimed at reducing shipping emissions has been a case in point. First, there has been a lot of sitting on the fence over whether to go for low sulphur fuels or scrubbers and second, alternatives like LNG don't really seem to be up and running yet, at least as far as shoreside facilities are concerned.

The recent report by UMAS, therefore, makes gloomy reading. This suggests that while the EU has to date directly spent $250m on LNG projects in the marine sector, providing 50% partnership funding with the private sector to support $500m worth of investment "this half-billion of spending will have no significant climate benefits at best, and could potentially increase greenhouse gas emissions from shipping".

Let's hope the actual outcome is a bit more positive.

GRAINS OF TRUTH

There seems to be plenty of news around on grain investment at the moment, not only in areas like the Middle East, where it is seen as offering possibilities to diversify away from dependence on container business, but also in the UK. We read that Peel Ports has been investing substantially in recent months to upgrade handling and storage facilties at London Medway.

New kit includes installing a conveyor system to boost loading operations and a contract with Liebherr for new cranes. Good news, therefore, on the grain front and the plan apparently is to provide a boost for growth in the Sheerness region as well as provide import and export momentum.

CHARITABLE TRAIL BLAZER

Here's a chance for everyone in the industry to put their hand in their pocket for a good cause. The annual dragon boat race takes place on the Thames on 14 September, raising funds for the Oscar Campaign, which supports trail-blazing research and treatments for children with cancer and other illnesses at Great Ormond Street hospital.

The Oscar Campaign has received support from the maritime industry to the tune of over £1.7m since it was set up following the pioneering and successful treatment of Oscar Parry, whose dad Phil runs maritime recruitment firm Spinnaker Global. Oscar's life was saved by experimental treatments developed for use for all children globally by the bone marrow transplant specialists at Great Ormond Street Hospital for Children and the Institute of Child Health.

Eleven years on from a prognosis that saw Oscar not expected to last the day, and after he had endured two forms of leukaemia, two bone marrow transplants, over 100 blood transfusions, five brain haemorrhages and five years of chemotherapy, he is now working as a chef in London.

For those wishing to support the campaign, visit: *justgiving.com/fundraising/dragonboatspinnaker*.

WHAT'S ON

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

01-03 OCTOBER
AFRICA PORTS EVOLUTION
DURBAN
www.portsevolution.com

02-04 OCTOBER
BREAKBULK AMERICAS
HOUSTON , USA
www.breakbulk.com/events/breakbulk-americas-2018/

07-10 OCTOBER
AAPA 107TH ANNUAL CONFERENCES
VALPARAISO, CHILE
www.aapavalparaiso2018.com/en/

09-11 OCTOBER
OVERVIEW OF PARTICULATE HANDLING SHORT COURSE,
WOLFSON CENTRE
GREENWICH, UK
www.gre.ac.uk/engsci/research/groups/wolfsoncentre/coupro/sc/pht

23-24 OCTOBER 2018

Improving safety, streamlining operations and ensuring environmental protection

abto ASSOCIATION OF BULK TERMINAL OPERATORS

The Association of Bulk Terminal Operators Annual Conference

HAMBURG, GERMANY
www.bulkterminals.org/events.html

14-16 OCTOBER
WORLD COAL LEADERS EXPO
BARCELONA
www.coaltrans.com/world-coal-conference/details.html

14-16 OCTOBER
ASHTRANS EUROPE
BARCELONA
www.coaltrans.com/ashtrans/details.html

17-18 OCTOBER
SOLIDS
ANTWERP
www.easyfairs.com/solids-antwerp-2018/solids-antwerp-2018/

17-19 OCTOBER
EUROPEAN GREENPORT
VALENCIA
www.greenport.com/news101/greenport-congress-2017/greenport-congress-will-head-to-valencia-in-2018

17-19 OCTOBER
BULKEX
NOTTINGHAM UK
https://mhea.co.uk/category/bulkex/

06-08 NOVEMBER
WORLD ETHANOL AND BIOFUELS
BRUSSELS, BELGIUM
https://energy.knect365.com/world-ethanol-biofuels/

06-08 NOVEMBER
PNEUMATIC CONVEYING OF BULK MATERIALS SHORT COURSE
WOLFSON CENTRE
GREENWICH, UK
www.gre.ac.uk/engsci/research/groups/wolfsoncentre/coupro/sc/pcobs

07-08 NOVEMBER
SOLIDS
DORTMUND
www.easyfairs.com/schuett-gut-recycling-technik-2018/solids-dortmund-2018/

13-15 NOVEMBER
GLOBAL GRAIN GENEVA
GENEVA
www.globalgrainevents.com/geneva/details.html

13-15 NOVEMBER
TOC AMERICAS
PANAMA
www.tocevents-americas.com/en/Home.html

04-05 DECEMBER
COMMISSIONING AND TROUBLESHOOTING 'HANDS-ON' PNEUMATIC CONVEYING SYSTEMS SHORT COURSE
WOLFSON CENTRE
GREENWICH, UK
www.gre.ac.uk/engsci/research/groups/wolfsoncentre/coupro/sc/commpc

BULK TERMINALS 2018

IMPROVING SAFETY, STREAMLINING OPERATIONS AND ENSURING ENVIRONMENTAL PROTECTION

The Annual Association of Bulk Terminal Operators (ABTO) Conference

23-24 October 2018, Radisson Blu Hotel, Hamburg

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

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The Wolfson Centre

Captain Richard Brough
Brough Marine and ICHCA International

Michael Gubbins
CODELCO

Daniel Hosseus
ZDS – Association of German Seaport Operators

Garry O'Malley
Redcar Bulk Terminal Limited

Dr Sebastian Saxe
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