BULK TERMINALS *international*

SUMMER 2019

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

AFRICAN ODYSSEY

Companies queue up to invest in the booming continent

IRON AGE

Why iron ore is in the crosshairs of a US/China trade war

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SHIPPING'S GROUNDHOG DAY

BY SANDRA SPEARES

A sense of deja vu is not a pleasant experience when it comes to safety – or more precisely the lack of it – in the maritime environment, but recent months have produced a spate of reports underlining, once again, how more needs to be done on this issue, both in ports and on vessels

The Marshall Island's report of the sinking of the VLOC *Stellar Daisy* makes for grim reading, not least because of the speed at which the accident occurred, leaving no time for a safe evacuation of the crew. Further reports have also been released in the past month or so on the dangers of liquefaction and also of enclosed spaces, both topics that have been mentioned frequently in this publication and numerous others relating to our industry.

The accidents, often with fatal consequences, continue to occur, leading one to feel sometimes that one is living through some kind of *Groundhog Day* scenario. That said, there have been many positive initiatives to try and reduce — and hopefully eliminate — the dangers relating to enclosed space entry and develop technology that can be used effectively to minimise risks in the working environment whether on ships or shore-side in ports.

The clock is clearly ticking away towards the 2020 sulphur cap deadline and with recent worldwide demonstrations taking place on environmental emissions, the maritime industry as a whole will have to try even harder to clean up its act.

The whole issue of scrubbers versus low sulphur fuels continues to rumble on, despite the rapidly approaching deadline. There are positive outcomes for some, with the news that ports may be relaxing attitudes to open loop scrubber systems and new technology becoming available to test fuel on board, to check that new blended product is both compliant and safe to use.

NorShipping in June and International Shipping Week in September will give the industry plenty of time to debate whether in fact they have made the right decisions in the months before Sulphur 2020 kicks in.

Deliberations at the International Maritime Organization this month will include not only the Sulphur 2020 deadline and implementation issues, but an action plan for marine plastic litter and the ballast water treatment issue, as well as reductions in greenhouse gas emissions generally.

Other issues that remain on the agenda include the fallout from the tragic Vale dam disaster at the start of the year and the effect it has had on bulk trades from Brazil towards the Far East. Iron ore is also on the agenda for discussion, while other big commodity traders have been feeling the effect of government pronouncements on the Vale position.

The problem of how much vessel scrapping is done to ensure the market does not become overloaded with surplus tonnage also remains a key point for discussion. The publication of the *Stellar Daisy* report may well provide further impetus to the process of scrapping converted vessels still operating in the bulk ore segment.

ABTO, meanwhile, is busy putting together the agenda for our next conference in October. We hope that you will be able to join us in Amsterdam to discuss the hot topics for bulk terminal operators and maritime players. In the meantime, we hope you enjoy this latest edition of *Bulk Terminals International*.

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- Practical Workshop: our first course earlier this year included a visit to The Wolfson Centre's pilot plant. Interest was such that in 2020 we will be offering an optional Practical Workshop, to be held in its on-site industrial-scale pilot plant.

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More details at: **BULKTERMINALS.ORG/EVENTS/COURSES-AND-TRAINING.HTML**

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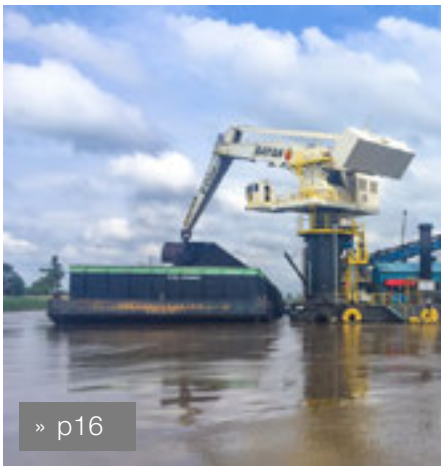
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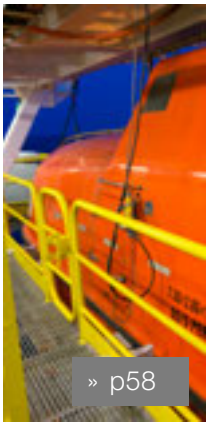
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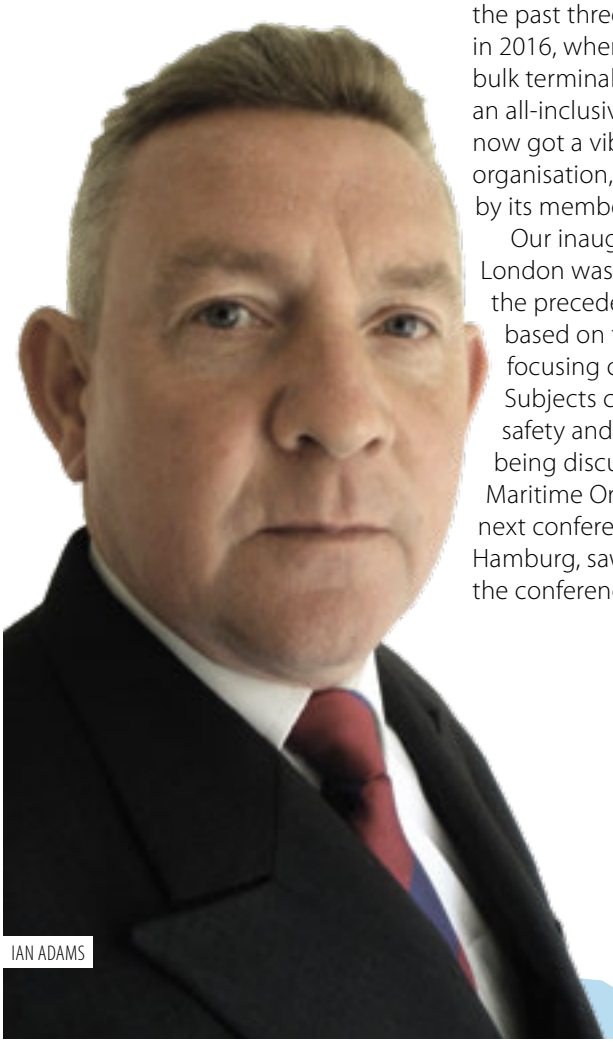
BON VOYAGE

IAN ADAMS, CHIEF EXECUTIVE, ABTO

Welcome to the latest edition of Bulk Terminals International – which alas dear reader will be my final one as I will be stepping down as Chief Executive of the Association of Bulk Terminal Operators (ABTO) within the next two months



IAN ADAMS

I have been ABTO's Chief Executive for the past three years, from its founding in 2016, when we identified a need for bulk terminals to be represented by an all-inclusive association. We have now got a vibrant, forward-thinking organisation, which is well supported by its membership.

Our inaugural conference in London was held in 2017 and set the precedent for a conference based on the high level of content, focusing on the issues of the day. Subjects covered included biomass, safety and an update of the issues being discussed at the International Maritime Organization (IMO). Our next conference, *Bulk Terminals 2018* in Hamburg, saw us continue to ensure the conference was content-driven. *Bulk Terminals 2018* built on the subjects of biomass, safety and IMO with an input from the International Cargo Handling Coordination Association (ICHCA International). ABTO now has a good working relationship with ICHCA International and attends IMO on its delegation.

Bulk Terminals International, our quarterly membership magazine, provides a balanced, interesting and informative content and has also been well received by the industry, which supports the publication with advertising. I anticipate that the magazine will continue to be valued by both members and non-members alike.

At the time of writing, I am attending IMO's Marine Environment Protection Committee (MEPC). As mentioned

before, we attend on the ICHCA International delegation. We arrived today to be greeted by climate change protesters. I have been attending IMO for 14 years and it is the first time that I have experienced anything quite like it!

Although it was a peaceful protest, it was still intimidating having to walk through a crowd waving signs saying: "Tell the truth" – and inviting us to have a biscuit. The group, Extinction Rebellion, has been responsible for several protests resulting in traffic disruption in London. Shipping is now firmly on its radar.

ICHCA International and ABTO are on a watching brief to see what actions IMO takes with regard to Greenhouse Gases (GHG). We are firmly of the belief that IMO has no jurisdiction over ports and terminals on this topic. Under the Paris agreement ports and terminals are already covered under the responsibility of member states. What we are keen to avoid is IMO putting additional requirements on ports and terminals.

When it comes to GHG, a reduction makes commercial sense. To reduce GHG emissions you need to consume less energy; if you consume less energy your costs go down. Many terminals have been actively seeking ways to reduce costs by installing more energy-efficient equipment, so we believe that as an industry we are making good progress.

The shipping industry finds itself in a very interesting situation. It is actually possible for shipping to meet the IMO targets for reduction of GHG by simply slow steaming. Even with the additional ships that will be required to fulfil the transportation needs of world trade, this would achieve the self-imposed targets of IMO by 2030. However, this is not helpful in convincing the outside world that shipping is taking its responsibilities seriously.

Shipping as an industry needs to start to look for alternative ways of powering ships. As an industry, shipping tends to wait until the last minute before acting. Unfortunately, on this subject we need to plan – a long way ahead. IMO has set targets for 2030 and 2050 and efforts need to be made now to move towards those targets.

Some of the more enlightened companies are looking at how we can move to zero emission ships. This is something that we will need to achieve by 2030, so the clock is ticking.

I am sure that many of these points will come under discussion at this year's *Bulk Terminals 2019* conference, which is going to be in Amsterdam, the Netherlands, on 8-9 October 2019. As in previous years, the agenda is currently being developed. If you want to see particular topics covered, please let us know by sending an email to **events@bulkterminals.org**, or if you have any enquiries about attendance and exhibiting. We still have space for one further exhibitor so if you are thinking of taking a stand at the conference, please do not hesitate. The venue is the Mövenpick Hotel Amsterdam City Centre, which is a great location with fantastic views over the river IJ or the city skyline. It is very central, giving great access to the city.

Meanwhile, I think that ABTO is well established and will benefit from a new leader taking the reins, so I have decided to step down as CEO over the next couple of months.

I have thoroughly enjoyed my time at ABTO, but I am not going to disappear completely as I will remain available on a non-executive basis to my successor.

Talking of my successor, it is someone that you are already familiar with. Simon Gutteridge has been running our events for the past three years and is now going to be taking over as the new chief executive of ABTO. During his time researching and putting together the events, he has developed an excellent knowledge of the issues facing bulk terminal operators.

I believe that ABTO will be in good hands with Simon and hope that all our members will continue to support him and ABTO to our mutual benefit.

I therefore send both Simon and ABTO my best wishes for the future.

WORLD NEWS ROUND-UP

Turbulent commodity trades and questions over what to do in the run-up to Sulphur 2020 have hit the headlines recently

The debate over whether to go down the low sulphur route or fit scrubbing technology to meet the deadline has been continuing, added to which slow steaming as a means of reducing shipping's environmental footprint has been rejected by many.

Proposals to limit the speed of ships as a way of reducing carbon emissions will have the opposite effect, the UK Chamber of Shipping has warned.

The proposals by the French and Greeks would mean enforcing a speed limit on international shipping, despite there being no evidence that such limits will result in lower carbon emissions, according to the Chamber.

Anna Ziou, Policy Director at the UK Chamber of Shipping says: "The shipping industry is committed to reducing its carbon emissions by at least 50%. To achieve this we need continued investment in green technologies that will allow ships to conduct their business through a range of low carbon fuels such as battery power, hydrogen fuel cells or even wind power.

"Shipowners have already limited their speed by a considerable amount in the past decade and while these proposals have good intentions, promoting further slow-steaming as a

low carbon alternative for international shipping is just not good enough. They will give a false impression that the industry is taking action, when in reality they will deliver no meaningful reduction in emissions," she concludes.

SCRUBBER ALTERNATIVE

The Clean Shipping Alliance 2020 (CSA 2020) has received written approvals and no-objection letters from several port authorities around the world indicating they have no intention of banning the use of open-loop scrubbers in their waters.

Following successful meetings between port officials and CSA 2020 Executive Committee members, the ports approached indicated that they do not intend to submit any papers to the International Maritime Organization (IMO) pertaining to EGCS operation unless new, compelling research comes to light.

Members of the CSA 2020 Executive Committee presented to the ports scientific evidence concluding that the wastewater generated by the exhaust gas cleaning process was environmentally acceptable and well within regulatory limits. Japan has already said it will not ban open loop scrubbers from its waters.

The CSA 2020 Executive Committee has received no-objection letters from more than 20 ports covering Europe, the Americas, Asia and Australasia.

While the number of global ports with declared restrictions remains low, those that have decided to ban scrubbers are beginning to have second thoughts.

"It appears that some ports are revoking their earlier decisions to restrict open-loop scrubber use now that more academic studies have been made publicly available," says CSA 2020 executive committee member Christopher Fee, general manager, environment and sustainability, Oldendorff Carriers.

CSA 2020 Committee member William Nugent, head of ship operations at International Seaways, adds: "With a significant number of world ports having now assessed the evidence and decided not to ban the use of open-loop scrubbers, we encourage other port authorities to consider the independent research and analyses before making any decisions."

FUEL TEST DEMAND

Parker Kittiwake, a leading global manufacturer of condition monitoring technologies, says it is witnessing an increase in demand for onboard fuel compatibility testing. The trend reflects the urgency in the market as shipowners and operators take a more deliberate and proactive approach to mitigating the risks of potential marine fuel oil incompatibility and stability issues associated with the impending 2020 global sulphur cap regulation.

With the majority of shipowners expected to opt for very low sulphur fuels of 0.5% or less to achieve compliance, the shipping industry is seeing a rise in new blended fuels appearing on the market. However there are significant concerns around how these new fuels will affect marine engines, which is why testing for compatibility and cat fines, for example, is increasing, the company says.

Amid widespread concerns and uncertainty and in preparation for 2020, shipowners and operators are looking to condition monitoring tools and technologies as the first line of defence for the early identification of issues, helping them to minimise disruption, downtime, and unexpected costs and delays.

Scott Herring, key marine accounts manager, Parker Kittiwake, comments: "It is crucial that these new fuels are managed effectively at all key stages of supply to allow shipowners to mitigate the risks associated with contamination, instability and incompatibility. If left unchecked, instability can cause severe problems including sludging of the fuel tanks, filter blockages and excessive sludging of the purifier. In the worst cases, this can lead to catastrophic failure and loss of propulsion and power."

He continues: "The stability of the fuel and its compatibility for blending is critical to protecting the operational efficiency of the engine. Vessels bunkering in different geographical locations will use varying fuel suppliers and thus blending of fuels is inevitable. With preparation in the lead-up to 2020 critical and with so little time remaining, Parker Kittiwake is seeing an increasing number of shipowners and operators taking the crucial steps to tackling fuel incompatibility and stability issues head-on, through quick, reliable and effective onboard testing, before they become significant and costly challenges."

BIMCO REPORTS A BOOM

Brazilian soya bean exporters set new records and have been giving some relief to dry bulk operators, according to information released by BIMCO.

Brazilian soya bean exports were up 85.2% in the first two months of 2019, compared to the same period in 2018. This comes on the back of record high exports in 2018 of 83.6m tonnes, a 22.7% increase from 2017.

2019 has seen the highest ever export of soya bean during the month of February. Exports totalled 6.1m tonnes, a 112.6% increase from the 2.9m tonnes exported in February 2018. Strong demand, in particular from China, the world's largest soya bean importer, and an early harvest are behind this large increase.

"As predicted by BIMCO earlier in the year, Brazilian soya bean exports started earlier this season, with much higher exports in particularly in February. Brazil has managed to ramp up its exports to China in response to its increased demand for non-US soya beans following the start of the trade war," says Peter Sand, BIMCO's chief shipping analyst.

"The recent upturn in Panamax and Supramax earnings is likely to be linked to the start of the Brazilian soya bean exporting season. The large volumes being exported, in particular to China have driven up the demand for the mid-sized dry bulk vessels," says Sand.

Chinese imports of iron ore keep falling, while its crude steel production keeps growing. China's increased use of scrap metal for its production of crude steel is fundamentally critical to the dry bulk shipping industry. Mostly Capesize ships are impacted by this, way beyond the temporary iron ore export disruptions in Brazil and Australia.

Chinese steel production grew by a massive 12.6m tonnes (+9.2%) in the first two months on 2019 as estimated by China Iron and Steel Association (CISA). During the same period, Chinese imports of the paramount steel production ingredient, iron ore, fell by 5.6%, or 10.3m tonnes. All numbers compared to the same period of 2018.

"For two decades the dry bulk shipping industry have relied on growth in Chinese steel production to continuously spur seaborne imports of high-quality iron ore from Australia and Brazil.

"That trend has now vanished and the Capesize ships operating on the spot market feel the pain. Growth in volumes are gone and iron ore is increasingly being shipped on long term contracts," says Sand.

"The 10.3m tonnes fall in Chinese iron ore imports is equal to 57 Capesize loads (180,000 tonnes) fewer for the first two months of 2019 only. If that's the pace we will see for the full year, we are in for a tough time."

"This year, BIMCO is putting special focus on this decoupling between steel production and iron ore imports, as the mega driver for Capesize transportation demand may not only disappoint, but worsen its fate."

Reports from Brazilian producer Vale on changed iron ore sales guidance for 2019 have not been clear cut, BIMCO says. BIMCO expects that iron ore exports in 2019 from Brazil will fall short of those seen in 2018, as exports from stockpiles may not fully compensate for the lost production. Brazilian iron ore exports

dropped to a multi-year low in March 2019 as 22.2m tonnes were exported, down from 30m tonnes in March 2018.

Australian exports, meanwhile, have been disrupted by the tropical cyclone Veronica this year. Ports on the Pilbara coast in Western Australia were shut down from 22 March 2019 for a duration of 92-132 hours. This was the longest closure at Port Hedland, the key export hub, for many years.

Port Hedland handled 198 ships with iron ore cargoes in March 2019, down from 228 ships in March 2018. Shipments to all destinations fell by 13.5% or 5.7m tonnes from March 2018, and iron ore exports also fell from February 2019 by 7%, or 2.95m tonnes.

"Looking forward, iron ore will no longer drive the Capesize market up as it has been doing for two decades," says Sand. "Freight rates will become more negatively impacted by fleet growth than before, as demand is now falling, for the all-important Capesize commodity.

"This year alone, 13 Capesize ships have been demolished, while 12 have been delivered including five Valemax. Over the past 12 months, the Capesize fleet has grown by 2.8%.

"If iron ore demand from China stalls or outright falls going forward, then the fleet size must stall or fall, simply to keep the market balance from getting worse", says Sand.

Demolition of dry bulk ships in the first four months of 2019 was 120% higher than in the same period of 2018. Much of this increase comes from demolitions of Capesize ships, up from 1.1m DWT between January and April 2018 to reach 3.4m DWT in the first four months of 2019.

Even if new regulation leads to more demolition, the market for large dry bulk ships is likely to face continued pressure as there is little potential for substantial growth on the demand side," he concludes.

Prospects for dry bulk ships smaller than Capesize are less concerning, as the market conditions are more stable. Despite some disruption to trade lanes due to the trade war, the markets for these smaller ships face fewer disruptions on both the demand and supply side.

UK REGISTER CHANGES

New changes have been announced for the UK Register to allow owners from a broader group of countries to register their vessels in the UK.

UKSR announced recently that it is to expand its ownership eligibility, allowing more shipping companies from around the world to flag to the UK.

The criteria has been widened beyond the current areas of the UK and Europe to include Commonwealth countries and bring the UK in line with the Red Ensign Group.

Bob Sanguinetti, CEO of the UK Chamber of Shipping says: "The UK should be proud of its maritime offer, both to homegrown companies and those from around the world.

"Benefits that UK flag customers receive include 24/7 dedicated account managers, the Enhanced Authorisation Scheme that allows all survey/audits to be delegated to one of our approved Recognised Organisations and flexible package fee options for registration, inspection and certification, designed to suit customer needs and the demands of worldwide shipping.

"The UKSR has also introduced a system for bareboat charter-out, so that ships can temporarily reflag for the period of a charter-party before returning to the UK flag when that agreement ends."

TIME TO SHARE

Data sharing is a prerequisite to enabling the successful implementation of "Just-In-Time" (JIT) operations – which can cut the time ships spend idling outside ports and help cut emissions as well as save on fuel costs.

Participants at a roundtable meeting of IMO's Global Industry Alliance to Support Low Carbon Shipping (GIA) at IMO Headquarters, recently agreed that increased transparency of information through data sharing was imperative, while this should be achieved through standardised functional and data definitions.

More frequent exchange of information would lead to better predictability of when a berth is available. The roundtable identified the need for a global, neutral, not-for profit data sharing platform, to allow frequent updates from terminals and vessel service providers on completion times.

The roundtable also identified the potential benefits of regulating data sharing, while incentivising data quality.

Operational measures can help to substantially cut greenhouse gas emissions from ships. In 2018, IMO adopted an initial IMO strategy on reduction of GHG emissions from ships, setting out a vision which confirms IMO's commitment to reducing GHG emissions from international shipping and to phasing them out as soon as possible.

INFORMATION EXCHANGE

A mandatory requirement for national governments to introduce electronic information exchange between ships and ports came into effect on 8 April this year.

The aim is to make cross-border trade simpler and the logistics chain more efficient, for the more than 10bn tons of goods that are traded by sea annually across the globe.

The requirement, mandatory under IMO's Convention on Facilitation of International Maritime Traffic (FAL Convention), is part of a package of amendments under the revised Annex to the FAL Convention, adopted in 2016.

"The new FAL Convention requirement for all Public Authorities to establish systems for the electronic exchange of information related to maritime transport marks a significant move in the maritime industry and ports towards a digital maritime world, reducing the administrative burden and increasing the efficiency of maritime trade and transport," says IMO secretary-general Kitack Lim.

The Facilitation Convention encourages use of a "single window" for data, to enable all the information required by public authorities in connection with the arrival, stay and departure of ships, persons and cargo, to be submitted via a single portal, without duplication.

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EFFECTIVE AFTER-CARE

COMPANY NEWS

Port-Trade is an international trade and service company, based near Denmark's largest port, Fredericia – and has the entire Nordic region as its home market. Port-Trade supplies mobile equipment for cargo handling in ports and terminals, for example break bulk, heavy lifts, containers and bulk materials (feedstuffs, fertiliser, coal, bio-fuels, salt, sand and so on).

Established in 2003, Port-Trade provides a comprehensive range of cranes, grabs, container spreaders and bulk loading and stacking equipment from renowned manufacturers. Port-Trade also trades used equipment on a commission basis and has delivered pre-owned equipment to all Scandinavian markets, as well as customers outside Europe.

Full consultation with potential customers is an important part of the job, in order to reach the optimum solution. Selecting and servicing specialised equipment requires close co-operation between the user and the supplier. Therefore, we always cultivate mutually beneficial, long-term partnerships with our customers.

Meanwhile, our effective after sales service ensures that equipment keeps running smoothly for decades.

Port-Trade's experienced technicians provide round-the-clock service as an integral part of an international service team. Service is provided to customers in all Nordic countries and occasionally outside the home market area, when our particular knowledge is needed.

Effective after-sales service requires up-to-date knowledge and competence. Therefore, we keep abreast of technical developments through constant training of our employees.

The equipment we offer is complex, of high quality and supplied at competitive prices. We are often able to offer a choice of alternatives.

We are responsible for more than 40 cranes, from Iceland to South Sweden and Denmark. Many cranes are covered by long-term formal service contracts, assuring proper and timely inspections, service and assistance.

Our co-operation with Konecranes Gottwald, Düsseldorf, goes back more than 30 years. Gottwald manufactures high-quality mobile harbour cranes and is the only manufacturer of energy-efficient diesel electric mobile harbour cranes. Reliable and durable, they carry the lowest operating and capital cost.

Good examples in place are at Eimskip in Reykjavik and Faroe Ship in Torshavn, which handle containers and heavy cargo. Cranes regularly work more than 2,000 hours per year without backup,

handling 30-35 loaded containers per hour, on average.

Another partner is E-Crane in Belgium, which manufactures Equilibrium cranes and is the undisputed world leader in that field. Fast and with low energy consumption, these cranes are dedicated to cycle duty.

Bulk materials can be handled with cranes, but in loading or stacking applications, also with belt-loading equipment. We provide such equipment from our partner Samson Material Handling in England, part of the German AUMUND Group.

Ancillary equipment is supplied by various renowned manufacturers such as MRS Greifer, VDL, Stevenel and others.

Our continued success requires that we remain loyal, reliable and always act swiftly, to the benefit of our partners.

The office of Port-Trade is conveniently located, close to the E20 motorway exit 59 in Fredericia, with International Billund Airport less than one hour's drive away.

For more information, visit:
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PORT-TRADE
cargo handling systems

GETTING UP TO SPEED

Increasing the speed and therefore efficiency in port operations is vital not only in tight market conditions, but also in cases where port operators need to demonstrate that they are reducing their carbon footprint

Crane designs have developed rapidly to reduce time on the job, bringing the environmental impact of equipment to the fore.

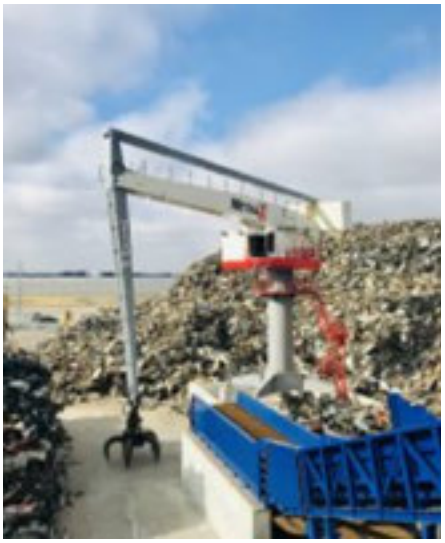
Manufacturers of hydraulic units have been singing the praises of their systems, suggesting that such designs are far more environmentally friendly than more traditional rope-based systems and offer benefits such as increased versatility, in particularly as far as more complex bulk cargoes are concerned.

One manufacturer that reckons it has a different approach to suppliers of hydraulic material handlers is E-Crane. The company says that many manufacturers provide products that have hybrid systems that store energy released during the boom down function in accumulators, and then use the energy when the boom is lifted again.

"At E-Crane, we have not gone down the same track, as our basic design already results in the most energy efficient hydraulic crane available on the market. Utilising the principle of equilibrium, where the stick is mechanically connected to the rotating counterweight by means of a connecting rod, the load can be moved from point A to B at a fraction of the energy usually required. The energy savings achieved using hybrid systems on a material handler all of a sudden become insignificant. The E-Crane philosophy is simple: start from an energy efficient design rather than to adapt a fundamentally inefficient one."

The company also stresses the environmental friendliness of the cranes, which use electric power for the main power source, with the opportunity

METALX, HEADQUARTERED IN WATERLOO, INDIANA,



either to plug in to a shore-based power source, or alternatively operate independently using a genset.

E-Crane also underlines the equipment's approach to potential noise pollution — another major concern these days as many port facilities are close to town centres.

"Thanks to the electro-hydraulic powertrain working at relatively low hydraulic pressures, the E-Crane is already one of the most quiet cranes on the market. However, as an option, E-Crane can install an additional sound dampening package to meet even the strictest demands."

Although compatible with any type of hydraulic grab, E-Crane's clamshell buckets are designed with a powerful closing force affording maximum fill and eliminating spills and carry-back.

MetalX, headquartered in Indiana, US, has begun operation of a new 5,000hp mega-shredder at the company's recently established greenfield site in Delta, Ohio. In December, 2018, MetalX also installed a new E-Crane 1000C Series Model EC7317 PD-E stationary equilibrium crane, equipped with a 3.5m^3 scrap grapple. Since installation, the E-Crane has been used to move and stockpile material in preparation for the shredder start-up. Now that the shredder is operational, the E-Crane will be used primarily to feed the shredder at a rate of up to 300 tons per hour.

The E-Crane 1000C Series Model EC7317 PD-E now in use at MetalX also has a maximum outreach of up to 104 feet and a maximum duty cycle capacity of about 10 tons. The machine uses a 200kW (250hp) main motor, can stockpile scrap up to 27m high and provides over 60,000m^3 of scrap storage capacity around its base.

"The large outreach and high stockpiling ability of the E-Crane means that enough scrap can be stored within reach of the E-Crane to feed the shredder for over 65 hours," explains Kelly Carl, E-Crane project engineer. "The material no longer needs to be handled multiple times before it goes to the shredder, making for an extremely efficient setup."

VLADIVOSTOK EXPANSION

Vladivostok in Russia is another port that has been boosting its equipment availability. The commercial port is set to receive five new port cranes in 2020, as part of a drive to increase its cargo handling.

Four Vityaz cranes and one Liebherr Portal Slewing 420 crane are to be obtained. The equipment is designed to handle cargo of various types, thereby increasing productivity, reducing loading and discharge time and increasing processing speed by 15-20% compared with current capacity, the port hopes.

Vityaz cranes are to be installed at berths 6 and 13 of the Universal Terminal. The capacity of each crane is up to 63 tons, with the maximum reach of the boom is up to 40m. The cranes are manufactured in St. Petersburg.

The Liebherr LPS 420 crane is designed for handling bulk and piece cargo and will be installed at berth 9. Its carrying capacity is up to 124 tons, the maximum reach of the boom is up to 48m. This crane will have the largest carrying capacity at the commercial port equipment park.

BOOM TIME FOR LIEBHERR

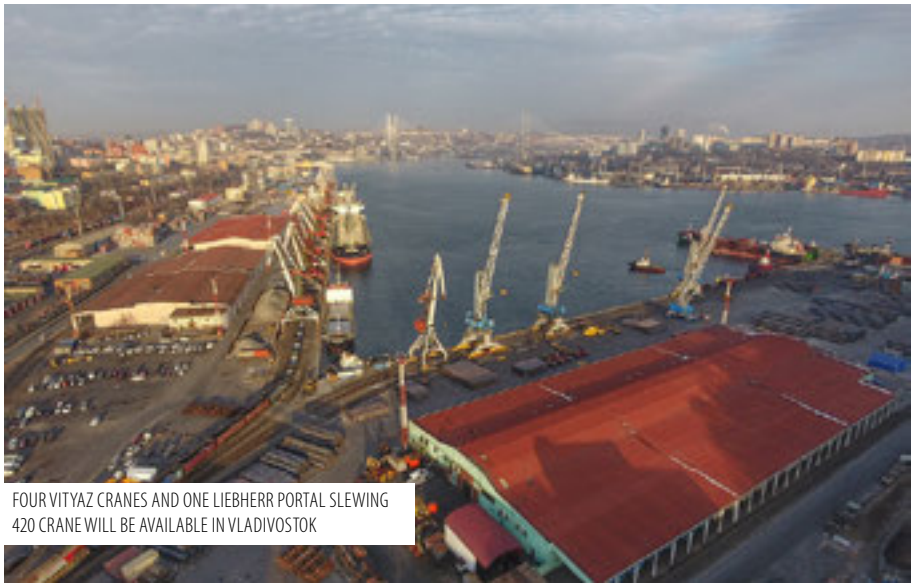
Liebherr Maritime Cranes' product line of mobile harbour cranes (MHC) has had a very successful year. With 83 sales in 40 countries, Liebherr gained an estimated market share of up to two-thirds in the mobile harbour crane segment, the company says. It claims an approximate market share of up to 65% in the MHC sector and says that demand for the world's largest MHC, the LHM 800, is rising steadily with six sales in 2018.

THE ARRIVAL OF AN LHM 420 IN GREENORE, IRELAND

"Demand for our state-of-the-art handling solution was very stable at a high level during the course of the year," says Andreas Müller, sales director for Liebherr mobile harbour cranes.

"In addition, we have succeeded in reviving countries and even entire regions that have shown almost no turnover development in recent years. A record year in the UK and an impressive result in Africa are two positive examples.

"We have also continued our success story with the LHM 800, strengthened our existing customer relationships and gained some new important accounts."



FOUR VITYAZ CRANES AND ONE LIEBHERR PORTAL SLEWING 420 CRANE WILL BE AVAILABLE IN VLADIVOSTOK

In April last year, Liebherr Maritime Cranes launched the first purely electrical port crane, the LPS 420 E. All crane movements such as luffing, hoisting, slewing and travelling are done by electric motors and the crane is designed for ports and terminals with an electrical infrastructure.

Equipped with two winches, each with a powerful 190kw electric motor, the LPS 420 E provides a maximum load capacity of up to 124 tonnes.

YILPORT SALE

Yilport Holding, a subsidiary of Yildrim Group, recently acquired a multi-purpose terminal situated in Quetzal, Guatemala.

At the beginning of October last year, two Liebherr mobile harbour cranes type LHM 600 were delivered from Liebherr's maritime production facility in Rostock, Germany to Yilport's newly acquired terminal in Guatemala.

The machines are equipped with a tower extension of 12m, which ensures a maximum cabin height of more than 37m.

The two LHM 600s for Yilport Holding were shipped on one vesse,l together with one LHM 800 bound for Ocupa in Mexico.

BELFAST BUY

Belfast Harbour has invested £3m in the world's largest hydraulic crane to enhance its cargo handling capacity.

The 370 tonne crane can manage individual lifts of up to 50 tonnes. Manufactured in Finland, the Mantsinen 300M offers additional flexibility and capacity for Belfast Harbour which handles over 23m tonnes of cargo annually.

At almost 40m high, the crane will be the largest crane of its kind operating in any British or Irish port and can unload and load multiple types of cargo. It is designed to discharge up to 1,000 tonnes of bulk cargo such as grain or animal feed per hour.

Trevor Anderson, operations director, Belfast Harbour, says: "In the past 10 years, Belfast Harbour has invested £30m in new cranes to enhance the efficiency and productivity of our quayside operations.

"The harbour is the first business in the UK and Ireland to invest in what is the largest crane of its kind in the world. The extra capacity, longer reach and overall versatility will significantly enhance our cargo-handling portfolio. It will also improve vessel turnaround times for customers importing and exporting from the harbour."

The order for the new crane – which is due to be delivered soon – is being managed by Cooper Specialised Handling. The company's director, David Cooper, says: "Belfast Harbour should be commended for investing in the latest handling technology. In the past, rope-styled cranes were the only option for handling bulk cargoes and larger vessels, but that has changed thanks to the new generation of hydraulic cranes now available.

"The faster productivity, precise control plus the ability to handle cargo directly without the need for stevedores to operate in person in ships' holds brings huge operational advantages."

In addition, Kalmar, part of Cargotec, has won a tender to supply a complete AutoRTG system to Belfast Harbour. The system will comprise eight automated rubber-tyred gantry cranes controlled by the Kalmar Terminal Logistic System and new-generation remote control desks.

The order was booked in Cargotec's Q4 2018 order intake, with delivery of the system scheduled to commence at the end of 2019.

DREDGER DEVELOPMENT

The biggest ram luffing CBW crane has left Liebherr's premises in Rostock. The tailor-made Liebherr type CBW-F 3450 ship crane has been manufactured by Liebherr-MCCtec Rostock GmbH for the world's largest cutter suction dredger, *Spartacus*.

The Dutch shipyard IHC Holland B.V. ordered the crane in November 2017 for the construction of the *Spartacus*. It will be built for the Belgian DEME Group, which is already implementing the well-known Orion project with the biggest offshore crane ever built by Liebherr (Crane type HLC).

The specially manufactured ship crane type CBW-F 3450 is based on the existing CBW series and has a maximum lifting capacity of 60 tons at an outreach of 32.2m. It is installed on a mobile gantry that enables it to be used over the entire length of the ship.

The curved boom is designed for installation and maintenance work on open water, especially for replacing the heavy-duty cutter head of the *Spartacus*. Due to the bended boom, swinging movements will be minimised since the hook is held close to the cutter head.

The integrated Liebherr Litronic control system enables unmatched precision in handling of heavy parts by the crane driver during demanding operations on open water.

Further safety features, such as the explosion-protected boom tip and obstruction detection for the travelling gantry, makes the CBW-F 3450 the perfect ship crane model for this special operation.

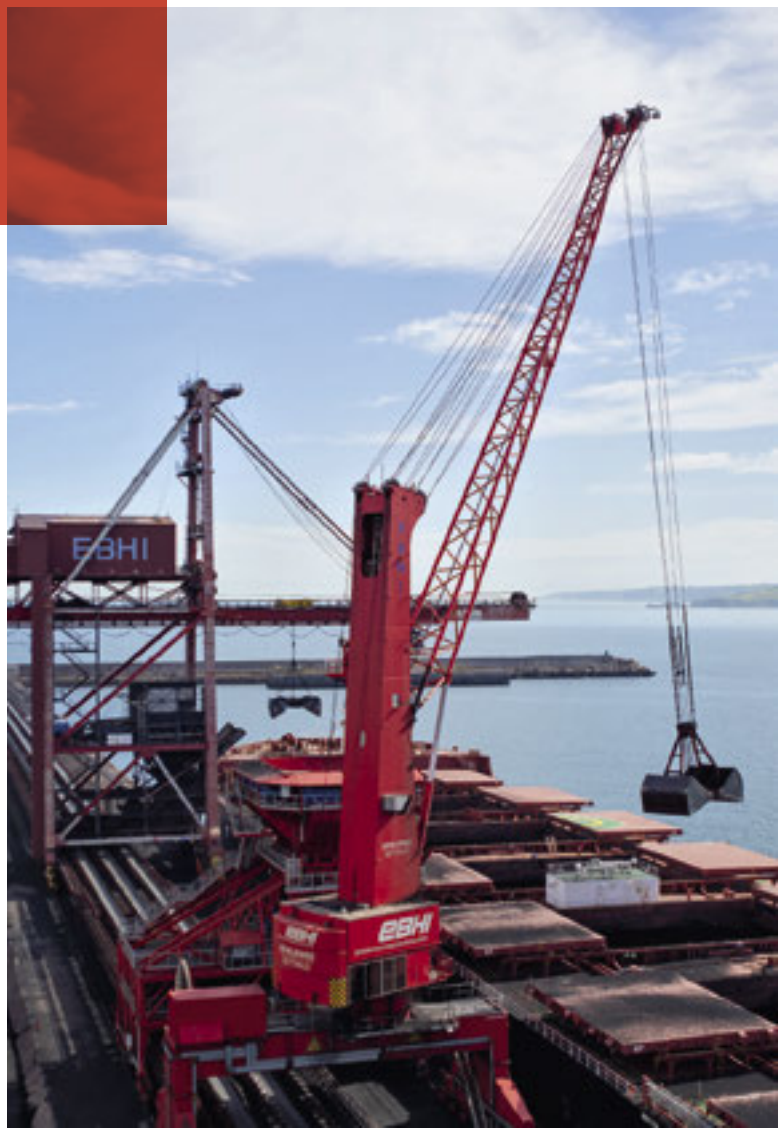
TAILOR-MADE LIEBHERR TYPE CBW-F 3450 SHIP CRANE

CASE STUDY

KONECRANES®
Lifting Businesses™

EUROPEAN BULK HANDLING INSTALLATION S.A., SPAIN

Rail-mounted portal harbor crane replaces gantry grab unloader



"When one of our three gantry grab unloaders had to be shut down, EBHI was aware that it needed suitable replacement machinery to pick up the slack as quickly as possible. This is when a Konecranes Gottwald Portal Harbor Crane came into play."

Jose Manuel del Arco
General Manager

KONECRANES® | GOTTWALD

European Bulk Handling Installation S.A. (EBHI), based in the Port of Gijon, is a leading terminal for dry bulk in Spain. Around 15 million metric tons of coal and iron ore per annum are unloaded for the iron and steel industries as well as power plants.

When one of its three gantry grab unloaders had to be shut down, EBHI was aware that it needed suitable replacement machinery to pick up the slack as quickly as possible.

Minimizing operational risks

In order to minimize operational risks, EBHI opted to invest in proven, standardized Konecranes Gottwald Mobile Harbor Crane technology based on a modular concept instead of a one-off gantry crane solution. EBHI's decision was also based on its need to secure quality service and long-term spare parts availability.

Short delivery lead-time

Impressed by the short delivery lead-time, high handling rates and the eco-efficient electric drive system from previous orders, EBHI opted for a rail-mounted Konecranes Gottwald Model 8 Portal Harbor Crane. The crane is interlinked with a new hopper that was separately installed on the quay rail system.

No interruption of terminal operations

The new Konecranes Gottwald crane was put into service in October 2017, less than one year after order placement. Although the crane was positioned between the two remaining gantries, installation and commissioning was performed successfully with virtually no interruption of the terminal operations.

The Konecranes Gottwald Portal Harbor Crane was installed between the two remaining gantries without interrupting terminal operations.

Field-proven technology

Konecranes Gottwald Portal Harbor Cranes bring together field-proven mobile harbor crane technology and tailored rail-mounted portal designs. These four-rope grab machines, designed for continuous-duty bulk handling, are particularly suitable for integration in a complex infrastructure of high-performance bulk terminals.

The Konecranes Gottwald Portal Harbor Crane has been installed between the two remaining gantries without stopping terminal operations

Like the Model 8 crane for EBHI, they are fitted with Konecranes Gottwald Smart Crane Features, including semi-automated modes of operation, that improve efficiency, safety, ergonomics and reduce environmental impact.

Customer

- European Bulk Handling Installation S.A. (EBHI), Gijon, Spain

Application

- Continuous-duty bulk handling of coal and iron ore

Project Scope

- Rail-mounted Konecranes Gottwald Model 8 Portal Harbor Crane

Crane Features

- G HSK 8420 B four-rope-grab variant
- Maximum lifting capacity of 100 t with powerful 63-t grab curve
- Working radius of up to 50 m
- Custom-built portal to fit the existing rail system

Customer Benefits

- Low specific investment costs and fast delivery
- Low operational risks thanks to standardized crane design with tailored portal
- Flexible and cost-effective operation with high crane availability
- Smart crane features with semi-automated modes of operation

European Bulk Handling Installation S.A., Gijón, Spain
Muelle Marcelino León s/n. 33212. El Musel.
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SMOOTH OPERATORS

COMPANY NEWS

Founded by Johannes Fuchs in 1888 as an agricultural machinery and stable equipment manufacturing business, Fuchs has evolved into a specialist material-handling company and has established a reputation for innovation and ingenuity.

Unique design features make our machines veritable all-rounders in materials handling. Whether in the scrap yard, at recycling sites, in the timber industry or in port handling, Fuchs® machines are the last word in outstanding productivity and cost-efficiency. At the Bad Schönborn site in the Karlsruhe district in Germany, 430 personnel are engaged in putting together a qualitatively superior and seamless product portfolio with equipment for any application.

For more information, please contact:

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Terex-fuchs.com

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

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GRABBING ATTENTION

Grabs have a multitude of uses in ports and recent new designs are in use both above and below the waterline, with specific equipment geared to a range of applications

New grab designs are taking on a range of tasks in ports across the world. One example is the hydraulic orange peel grabs that will be used in the new Moroccan port of Safi currently under construction. Grabs manufactured by Stemm are being used for dredging projects at the port and the company says the techniques used differ from traditional orange peel grabs — perhaps not surprisingly given the grab is being used for underwater work.

A coal terminal is being built at Safi with the aim of processing 3.5m tonnes per year and cracking in port foundations meant that additional work was needed. Turkish-Moroccan group SGTM/STFA purchased the most up-to-date hydraulic grabs to order to speed up the additional support work, which includes increasing the draught within the port and extracting rocks.

The grabs can used for dredging at more than 100m and are fitted with lighting for use in low-visibility conditions below the waterline. They also have sensitive position control systems in order to cause minimal disruption of the marine environment when on the seabed. Each grab has an automatic auto-correcting positioning system and the equipment can also be used for a variety of offshore projects, including pipe laying and extracting rocks.

Stemm has been involved in a number of major projects, such as the development at Maasvlakte 2 in Rotterdam, work on Teeside in the United Kingdom and at Jebel Ali port in Dubai, with the construction of docks and breakwaters.

Other applications of Stemm's equipment include work at the port terminal of Auhafen Muttenz Basel in Switzerland, which has recently started using a completely new system for biomass unloading and storage in large silos.

Stemm's 4CH-16000-1,1 type clamshell grabs, which have a capacity of 16m^3, are designed to handle all kinds of bulk commodities and biomass, up to a density of 1.1 T/m^3.

Installation and start-up was carried out in conjunction with Swiss company Stephan, which specialises in all types of lifting equipment, bridge cranes and special equipment for combustion of wood and biomass sectors, wood burners and boilers feed, and silos.

According to Stemm, the traffic of biomass in the Rhine and other big European rivers has increased

considerably in recent years and is also becoming an attractive alternative in other countries.

Loading of biomass using river transport and the operation and subsequent storage in silos require specialist technology and for the Swiss project Stemm installed an electrohydraulic clamshell grab powered by four hydraulic double-acting cylinders, which work directly on the grab's shells, applying a very powerful, uniform and constant penetration strength.

Loading to full capacity is important and the grabs are especially configured to seal with material that can be irregular in shape of size of grain. They can be deployed at any position in the ship, even at an almost horizontal angle.

For ships carrying highly compacted materials, due either to hold or weather conditions, Stemm grabs use a system called "scratching" when handling the product inside the hold.That way, the grabs obtain filling factors superior to any other type of clamshell grabs.

LEADING THE WAY

Nemag, meanwhile, says that dry bulk terminal operators are always looking for ways to increase terminal efficiency. Given the current difficulties in the iron ore segment, the company's claim that the nemaX is the most productive grab for iron ore is probably a good selling point.

The nemaX features a deadweight efficiency of only 25-28% and a grab ratio of 2.5 to 3. This means, on average, that the nemaX is about 15% lighter than any comparable clamshell grab on the market.

The company also claims the nemaX is also the fastest grab on the market; the optimised closing mechanism enables a 20% shorter closing time and maintains closing force on the lip plates at high levels. The result is an increase in productivity of at least 10%, starting immediately from the very first grab cycle and continuing all the way down in the hatch.

In addition to this improvement, there is an additional productivity gain from extended free digging and improved cleaning up.

MAGNETIC PULL

Another specialist product on the grab market is one produced by US-based firm Mack Manufacturing, a leading supplier of premium grade industrial grapples and buckets, with a new mag-grab the latest addition to its product line for the scrap-handling industry.

The combination four-tine grapple and lifting magnets are offered in 1-yard, 1.5-yard and 2-yard models. The 2-yard grab is fitted with a 44in lifting magnet, while the smaller models feature 40in magnets.

Mag-grabs typically are used to improve load retention when lifting fine material or to let operators "sweep" the work area clear of ferrous debris during loading operations.

To develop the new product, Mack worked closely with a magnet manufacturer to optimise the attachment. Like all Mack products, the mag-grabs are 100% American engineered and manufactured.

Like other mag-grabs on the market, the new Mack models also allow continuous rotation of the orange-peel tines, providing extra flexibility and control for operators. The rotator on most grapples is located next to their attachment point.

The Mack mag-grabs include a brushless spindle below the attachment knuckle, so the tines can rotate independent of the attachment point. The tines can elevate above the magnet position, allowing the magnet to sweep right to ground level.

Mack also highlights the reinforcement ribs forged into each of the orange-peel's tines, adding extra strength and rigidity to stand up against heavy loads. The grapple itself is all T1 structural steel with AR400 plate at high wear areas in the tines.

Oversized bushings are used at hinge points for longer life and all shafting is heat-treated and stress-relieved 4140 material. Tines are fitted with premium replaceable points. All hydraulic cylinders in the mag-grab are manufactured in Mack's own machine shop.

BUCKETS THAT CANNOT BE BEATEN

COMPANY NEWS

Innovative and state-of-the-art, Negrini's electro-hydraulic buckets are the ideal solution for single-wire, electric-powered machines.

The main features of the equipment are as follows:

- Independent, removable electro-hydraulic unit with "visible" components.
- Independent control unit that works even when disconnected from the bucket.
- Oil filtration up to 3 microns; standard filtrations are approximately 60 microns.
- The bucket can be used either transversally or lengthwise.
- It is possible to change valves to different shapes and sizes.

Available in a range of different models, each bucket has varying characteristics, such as standard, low, with arms and sub-water. Buckets can also be supplied with valves of different shapes: standard valves, or with opening windows to reduce load capacity and dust-proof or containment valves to reduce material loss. Metal or rubber covers can also be applied to reduce dust, which helps to protect the environment.

The valves are composed in such a way that the material can pass through without obstacles and it allows constant evacuation into the drain, without releasing the material too violently. Covers and blades can also be installed to reduce dust dispersion.

By replacing the valves, the characteristics of the bucket can be changed. For example, it is possible to fit large valves for handling lighter materials, or smaller (but heavier and stronger) valves for hard materials. With materials that are more diificult to shift, special long or commercial "rippers" can be fitted.

INNOVATIVE HYDRAULIC DEVICE

The valves are synchronised, if required, via an innovative hydraulic device, which excludes the teeth or connecting rods thereby eliminating wear and tear. This exclusive synchronisation system from Negroni also avoids maintenance and mechanical breakdowns.

Synchronisation is achieved through the equal division of the oil to the jacks. With the innovative hydraulic system, the jacks receive the same quantity of oil both in opening and closing, obtaining the correct movement of the valves without using mechanical parts. All jacks have a slowing device to prevent the impact of limit switches in the valve opening.

Pistons and hydraulic hoses are also protected from impact, with a full cover that protects against accidents.

SIMPLE LUBRICATION SYSTEM

The most sensitive and difficult zone to inspect is the valve connection bushing. Negroni has therefore added a large bushing that can be easily replaced. The bushing is

protected by two commercial "o-ring" type gaskets. These are blocked in place and do not allow any dirt to enter. The pressure on the outside allows the grease to be released, thereby lubricating the walls and removing dirt.

By using an electropump and specific distribution system, all the pins are greased automatically — grease is sent to each pivot independently of the resistance created by dirt, distance, and so on to ensure every pivot is lubricated as programmed. The user is simply required to check the grease level in the tank.

Although the pins are lubricated by the automatic lubrication system, whenever possible they will also maintain the traditional external lubricator in order to allow manual emergency greasing.

EASY-TO-MAINTAIN TANK

The "tower" tank, meanwhile, allows a strong inclination of the bucket without compromising its function and ensures no air can reach the lowest part of the tank.

The complete tank control unit can be easily tested or maintained on the ground. It is not necessary to disconnect electrical or mechanical parts before extraction, but only the hydraulic equipment connected to the bucket.

The operation to remove the control unit from the bucket will take only about one hour.

Negrini has inserted the heart of the hydraulic power station in a single metal block. Simply by removing four screws, it is possible to replace the entire valve unit. This operation can also easily be performed by less experienced personnel.

The buckets can be equipped with standard hydraulic power stations (with solenoid valves) or with a reversing motor, in which the solenoid valves will not control the opening and closing of the bucket, but the reversal rotation of the motor. The bucket will open in one direction and close in the opposite.

In both systems, oil filtration will take place up to 3 microns (standard filtrations are about 60 microns).

Its versatility allows the bucket to accommodate hydraulic power stations with different powers from the standard and, in many cases, the units will be replaceable.

For more information, visit: Negrini.org

TAILOR-MADE SOLUTIONS

COMPANY NEWS

Gans Cargo Operations has a long history in the supply chain logistics of dry bulk products, such as petroleum coke, coal, agri, fertiliser and biomass.

With a highly skilled and motivated team, we can offer tailor-made solutions for the transport of your product on a door-to-door basis. Our aim is to optimise your logistics in such way that you can just sit back and relax.

We offer the full scope of dry bulk product handling and transportation, including intermediate storage of weather-sensitive products in well-covered warehouses, as well as open-pit storage for products that are less sensitive to weather conditions.

For a number of years, we have noticed an increasing demand for covered storage on a worldwide scale. To meet the demand, we have been growing our international network by founding joint ventures with reliable and well-reputed local partners at a number of strategic locations. Together with our partners, we continuously try to develop value-adding services for our customers on a worldwide basis.

Our first joint venture outside Europe was in Egypt in early 2015, based on market intelligence that the Egyptian cement industry intended to shift from traditional fuels such as oil and gas towards solid fuels such as petroleum coke and coal. We bought four 4x13cbm bulk grabs, which we rent out at competitive rates to discharge dry bulk cargoes in all Egyptian seaports. Nowadays, we address approximately 20 agency calls per month, with our grabs rented out repeatedly.

We have also established joint ventures in the United Arab Emirates (covering the Middle East and North Africa and India), Turkey, Poland and the UK, all offering the full range of supply chain logistics, including covered and non-covered storage.

Our most recently acquired asset is a 120,000m^3 new-build warehouse in the port of Rotterdam for the covered storage of dry bulk directly under grab reach. The warehouse consists of 10 3,500m^3 compartments, 14 5,000m^3 compartments with sliding rooftops, combined with a connected 140x60m warehouse with moveable interior walls. The warehouse is located directly at the quay, with an available draft of 10,65m NAP. Both terminal and warehouse operate 24/7 from Monday 07.30am to Saturday 15.30pm.

Gans is a member of the Hudig & Veder Group, a traditional family-owned company founded in 1795. The group's growth is down to its entrepreneurial vision and it is always willing to make quick decisions on interesting market opportunities.

GANS CARGO OPERATIONS

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LOADING UP

Specialist ship loading technology is vital to ensure the safe handling of difficult cargos and there have been a number of recent contracts to supply equipment on a global basis

THE LRS LH

There are many new products on offer to improve the process of loading in shipyards and ports, including autonomous technology, which aims to improve safety for those operating essential machinery.

Shipowner Louis Dreyfus Armateurs recently deployed a TTS Colibri crane alongside a "walk to work" gangway, the TTS Horizon, for their newbuilding at Cemre shipyard.

The equipment package includes a significant innovation, notably the removal of the operator's cabin. Instead, the crane and gangway will be controlled from Phoenix, a remote operator environment that does not rely on a direct line of sight for the operator.

"Phoenix is the first step in our roadmap towards autonomous operations for offshore vessels", says Mette Harv, executive vice president BU energy at TTS Group. She adds: "Traditionally, the operator has been bound to sitting in a cabin mounted on or near the equipment. With Phoenix, the operator can control the equipment in a far more accurate, efficient and safe manner.

"Phoenix can be located anywhere on the vessel and from the same chair; the operator can control the crane,

gangway, cargo logistics system or any other complex deck machinery on-board. There are systems on the market than can control both crane and gangway from the vessel's bridge, but Phoenix represents a paradigm shift in this market segment."

TIMBER TREATMENT

Trade fair Bauma 2019 gave Liebherr the opportunity to showcase its new log handling equipment.

As the company explains, the main field of application of a log handler is the fast, manoeuvrable and, in particular, mobile transport of logs within industrial plant premises and timber handling terminals including use for transshipment in ports and inland ports.

The LRS LH has a grapple capacity of 8.2m^2 and an unprecedented load curve. The working area of the machine is characterised by a stacking height and an outreach of over 8m each.

The log handler — like all Liebherr reachstackers — is equipped with a stepless, hydrostatic drive and is fuel efficient.

The Liebherr Pactronic hybrid drive system is fitted as standard in the log handler and enables a temporary increase in performance without additional fuel consumption and exhaust emissions, if required. The sustainable hybrid drive therefore reduces the emission of CO2 . The fuel saving is achieved through complete utilisation of the regenerative energy and surplus power in the system.

Other new features for the log handler include a log pusher especially designed for timber handling and a massive protective structure for the driver's cab.

PICK AND MIX

Sennebogen, meanwhile, has produced a new electric drive version of the diesel hydraulic Pick & Carry material handler Sennebogen 735, which is used in the timber trades. The prototype will be ready to go into production by the end of this year. The 7 series machines have been designed to run continuously. Electric solutions, such as those typically used in stationary timber manipulation, have not been possible due to the long travelling distances involved.

The company has now developed a machine with a completely new drive concept. All the work processes still operate hydraulically, driven by an efficient stage 5 diesel engine, while the undercarriage travel drive is electric.

Bosch Rexroth and Sennebogen collaborated to develop this electric travel drive. The system solution, based on Bosch Rexroth components, is being jointly developed and will be launched by Sennebogen under the name "Green Efficiency Drive". The Pick & Carry material handler 735 E will be the first machine to contain the series production technology for electric travel.

The Pick & Carry machine can already switch continuously between acceleration, braking and driving under load and this provided options for improving the use of the available energy. The new drive concept consists of two electric drive engines in the undercarriage.

Initial applications saw efficiency increases of up to 30% compared to the previously used diesel-hydraulic drive.

DOUBLE DOWN

Eliminating double handling is a key consideration when trying to improve port efficiency and cut costs. The new generation Samson STORMAJOR provides a fully integrated system to receive directly from trucks or front end loaders and discharge to vessels, rail or stockpile without the need for any supplementary equipment.

This integrated system eliminates double handling, which protects the quality of the material being conveyed while limiting the generation and spread of dusty particles.

The STORMAJOR give operators a variety of dust and pollution control measures. Full enclosures are available at truck reception and around the outloading boom in conjunction with on-board dust extraction equipment for operation in sensitive locations.

These machines are fully mobile and mounted on either tracks or wheels depending on application and site requirements.

On a daily basis, quick and easy repositioning of equipment is vital in maximising opportunities on multi-purpose sites and the new range of track mounted STORMAJOR units can also travel with a residual material load in the reception area if required.

The equipment's radial boom generates a high stockpile with minimum machine movements, while its compact design allows for utilisation of irregular storage and stockpile areas.

The ability to produce stockpiles with minimum movement means this equipment can be used for stockpiling in warehouses as well as outside.

The mobile nature of the equipment gives more flexibility to operators, the company says. The STORMAJOR is adaptable and can load barges moored off the river bank, small ships up to 10,000dwt as well as provide a feeding system for high-level SAMSON Shiploaders when loading larger ships.

This flexibility facilitates a quick response to trade variations in import and export of dry bulk materials.

Three STORMAJOR Series are available; the 380 Series for materials with a bulk density of ≤ 1 t/m^3 such as cereals, fertiliser or alternative fuels; the 450 Series for materials with a bulk density from 0.9 to 1.6 t/m^3 such as additives, light minerals, aggregates or fertiliser and the 800 Series for materials with bulk densities from 1.5 to 2.1 t/m^3 such as heavier minerals, aggregates or ores.

Each series can be tailored to the requirements of the particular operation with specific power and mobility options, reception options, dust containment and reduction and discharge options.

BELT BOOST

Eastern Mining Company's Shakhtersk coal port has increased the length of its conveyor lines to 3.1km. The expanded system of conveyor belts directly connects six storage areas in the port territory with berthing ship loaders. This solution ensures the continuity of coal supply and avoids downtime in loading ships.

The warehouse complex discharge capabilities have also been expanded to up to 4, 400 tons of coal per hour.

The new belt is 1800mm in width, as compared to belts of 1000mm and 1400mm previously. It is fitted with a dustproof system and magnetic catchers of metal garbage. During coal handling, water spraying equipment prevents generation of coal dust in the areas of operation, and the magnetic plants improve the quality of fuel, cleaning it of unnecessary impurities while in transit from the stockpile to loading facilities.

Port director Yuriy Gvozdikov says the new equipment means the port can ship up to 14m tons of coal per year.

IMMINGHAM IMPROVEMENTS

ABP has commissioned crane manufacturers Kocks Ardelt Kranbau to supply three new high-capacity grabbing cranes for the Immingham Bulk Terminal (IBT) on the Humber Estuary.

IBT handles raw material imports for British Steel. The operations were taken over by ABP from British Steel in November 2018. The crane purchase is part of the previously announced £65m investment, committed by ABP to the terminal and site facilities.

The investment will help to support the long-term future of steel manufacturing in the Humber region.

Martin Downey, head of Immingham Bulk Terminal, says: "Within six months of taking over the operations at IBT, we've made significant improvements to the site. We're keen to improve our handling rate and these cranes will enable us to do just that."

The new Ardelt cranes, Tukan K, model 3000–50, will provide a grabbing capacity of 50 tonnes at a 50m radius. The cranes have been ordered to replace the existing ship unloaders and are expected to provide a step-change in capability. The Tukan Ks will handle in excess of six million tonnes of iron ore and coal each year.

The Ardelt Tukan K was selected as it provides a cost-effective solution in addition to high performance, design classification and energy efficiency, along with the benefit of local support provided through the UK office of Kocks Ardelt Kranbau.

In addition, the Tukan K has its hopper built into its structure allowing a linear load path, the most efficient of any jib crane, ensuring the shortest possible cycle time and energy curve.

The bespoke cranes are anticipated to be complete and online by the end of 2020.

CRANES AT IMMINGHAM'S BULK TERMINAL WILL BE REPLACED WITH THE LATEST HIGH-CAPACITY EQUIPMENT

THE FLEXIBLE CEMENT SOLUTION

COMPANY NEWS

Spanish cement engineering company Cemengal has more than 30 years of experience in the cement industry, specialising in the design, supply and construction of cement grinding plants.

Seven years ago, Cemengal patented Plug&Grind®, a modular and portable grinding station. A year later, the first two units were sold to Kenya and Saudi Arabia.

Fast forward to today and four different models with ball mill and vertical roller mill technologies are on the market, and close to 40 units have been sold so far worldwide.

The Plug&Grind® modular grinding configuration, with a flexible ball mill or vrm equipment, is suitable for new greenfield projects, or for the expansion of existing brownfield plants that are unable to cope with either a strong cement demand, or where existing equipment is unable to reach very high Blaine cements with blended compositions.

Plug&Grind® flexible plants offer different possibilities for new plants, or the extension and production of new products with a wide range of capacities. Therefore, new investors or current producers can benefit from implement projects in a short space of time, with limited expenditure.

PLUG&GRIND PROJECT FOR CEMENTO REGIONAL GUATEMALA

Since its official launch into the worldwide market in 2013, Cemengal has supplied several Plug&Grind® modular units in different regions, from South to Central and North America, from North to East and West Africa, to North Europe and to South East Asia with excellent results in performance, reliability, safety and environmental protection.

The Plug&Grind® has rapidly changed the way cement producers think, allowing them to react to market conditions in less than a year — before Plug&Grind® appeared, the time required was at least two years. But time is not the only purchase factor — the capital outlay, the size of the land required and the easy-to-run design have help to make the Plug&Grind® a best seller around the world.

From the very first model, the Plug&Grind® Classic with just 100.000tpy to the latest developments reaching 400.000tpy with the Plug&Grind® X-treme and over 500.000 tpy with the VP&G®, Cemengal has covered all needs for small- and medium-sized cement grinding stations.

When setting up a cement grinding station, companies can stay ahead of the rest by installing Plug&Grind®. First of all, bags and big bags of cement are imported, with low risk for the importer.

The second step is usually to install silos at the port to import bulk cement products.


PLUG&GRIND PROJECT FOR CEMINDO INDONESIA

PLUG&GRIND PROJECT FOR LAFARGE HOLCIM IN ZAMBIA

Finally, installing Plug&Grind® could see production go from 12tph to more than 70tph, depending on the market size.

This ensures that the facility is really competitive on price, doesn't have to make major investments on regular and permanent grinding projects and is the best, quickest and cheapest way to introduce a company into new markets .

This is an excellent tool to test the new markets before facing major investments on regular grinding mills or integrated lines. Its competitive advantages — low capital expenditure/production ratio, short time to market, risk mitigation and portability — make the Plug&Grind® unique.

AN ATTRACTIVE SOLUTION

The main benefits of Plug&Grind® are as follows:

1. A quick payback on a moderate investment.
2. It is a portable solution perfect for new market penetration.
3. The yearly cement production of the Plug&Grind® Classic will be around 100,000 tpy of cement; for the Plug&Grind® XL around 230,000 tpy of cement; for the Plug&Grind® X-treme 400,000tpy of cement; for the VP&G® 500,000 tpy of cement.
4. The time schedule for delivery is between six to nine months FCA basis depending on the model.
5. First cement production will commence nine to 11 months after the contract´s signature, depending on the selected model.
6. The footprint to allocate the whole equipment infrastructure is the smallest in the cement industry.
7. This grinding plant is a Cemengal-patented unit.
8. The plant is mobile, very compact and easy to assembly and transferable to other locations.
9. The equipment comes pre-assembled inside regular containers and modules, straight from our facility.
10. The plant is fully equipped and ready to produce cement after final assembly.
11. This plant is very simple and easy to operate and maintain.
12. It cuts down on logistics by grinding raw materials at destinations close to the concrete batching plants so avoiding the handling of cement directly (dusty, leakages and more expensive). If the business requires, the containers can be packed up again cement production transferred elsewhere.

POINTS TO CONSIDER

Regarding the peripheral infrastructure, please note that our ball mill models do not consume any water on performance — it is a dry process grinding. As for the power, please note that this must be supplied at low voltage 380-400V at the site entrance.

In case clients need to transform the voltage from the existing network, then a portable electrical sub-station can also be supplied. If the power grid is not available locally, a power generator can be also supplied as an option. This generator is also fitted on 40ft containers.

CONCLUSION

The mobile Plug&Grind® is the best way to approach a simple cement production facility with a low capital expenditure, minor risk and at a strategic location such as a port terminal/concrete plant.

The first cement will be available after nine months from its contract´s signature, which will permit a quick and a comfortable return of investment.

ABOUT THE AUTHOR

Moisés R. Nunez is the Sales and Marketing Manager of Cemengal. He has 27 years of experience in the cement field, working for Lafarge Holcim Spain for 11 years and since 2008 for Cemengal.

His wide international experience has helped Cemengal to achieve major market penetration around the world.

For more information, visit: cemengal.com

ALL WHEEL TRAVEL TECHNOLOGY TRANSFORMS PORT OPERATIONS IN RUSSIA

COMPANY NEWS

Ust-Luga Port is the largest and deepest port of the Baltic Sea and is seamlessly integrated into the northwest transport network and European transport infrastructure. Constructed at a cost of $2.1bn, this important coal and fertiliser terminal is an attractive source of supply of Russian export products due to its proximity to the European Union and Central Russia.

The "Multipurpose Reloading Complex" LLC (MRC) is a cargo terminal at the port, specialising in receiving, storing and shipping general and bulk cargoes (cargo turnover in 2017 was 5.5m tons of mainly power-generating coal). With the terminal handling all types of vessels with capacities ranging from 3,000 tons to 75,000 tons, MRC looked to future proof its business while maximising on its Capex investment. After much research by the purchasing company, the ultimate solution was found in the introduction of the TB58 All Wheel Travel Radial Telescopic Shiploader.

The company already had experience of Telestack equipment, having previously introduced three mobile conveyors into its fleet. In 2009, the company installed a wheel mobile TS1542 radial telescopic stacker that currently has over 60,000 hours on the clock. A TRACK MOBILE CONVEYOR TCL431 was added in 2014 (currently at 16,000 hours) and in 2017, it purchased a TRACK MOBILE CONVEYOR TCL1031 (7,000 hours). Its experience with Telestack's equipment meant that it had confidence in the brand to spec the customised equipment specific to its commodities, quayside conditions and the changing needs of its operation.

The Ust Luga operation meant coal was transported via the rail network and unloaded. After it was crushed and screened, the coal was moved to the front of the jetty to be stockpiled.

Mining Technologies approached Ust Luga Port and presented the benefits that mobile stacking and direct shiploading would bring to its operation – in terms of both speed and efficiency.

Ust Luga Port selected Telestack to provide a TB58 All Wheel Travel (AWT) Radial Telescopic Shiploader to stockpile coal at the front of the jetty as well as load coal on to a Panamax vessel. The main benefit of the TB58 All Wheel Travel Radial Telescopic is that it can be used for both stockpiling and shiploading.

Through using a Telestack conveyor, Ust Luga Port is capable of creating a larger stockpile, eliminating the need for as many wheel loaders. Instead of loaders being required to continuously move material away from the stockpile, they are only needed to move material once it is ready to be placed into trucks to be taken away for distribution. The elimination of wheel loaders reduces labour, fuel costs, carbon footprint and maintenance costs and with less site traffic movements, the potential for human error is reduced.

The All-Wheel Travel feature offered MRC mobility and flexibility incomparable to any piece of equipment in its operation. With the ability to literally turn 360º with ease, speed and accuracy, the All-Wheel Travel function has enhanced the Ust Luga operation considerably. With the added benefit of no civil or planning requirements, the All-Wheel Travel system is a quick and easy solution suitable for stockpiling applications and any single or multiple cargo berths.

The unit has a reach of 58m and is able to stockpile in radial mode, increasing the stockpile capacity on site within a smaller area. Incorporating a telescopic boom on an all-wheel travel double bogie system, the 58m telescopic boom is rated at 1,200 tph (coal) and can cater for vessels which have a freeboard height of up to 16m and a beam of 43m.

Additionally, at this maximum freeboard, the unit has a reach of 25m into the hold of the vessel. Couple this with the range of steering modes available (including in-line, carousel, radial, parallel and crab mode), the radial and telescopic ability also gives the operator full control, allowing them to easily and quickly trim the hatch and adapt the load in accordance with the differing vessel sizes, application or quayside conditions. With the ability to change hatches in as little as two minutes, the operator can maximise production rates and minimise labour on site.

The advanced and easy to operate hydraulic system enables variable speed when travelling in parallel mode during hatch change, radial mode when stockpiling or trimming the vessel and steering mode when in transport position. The process is further enhanced with the user-friendly radio remote control that permits full and accurate control, particularly whileworking in restrictive quayside conditions. The 1.2m-diameter wheels also give a high ground clearance and have been designed to cater for adverse ground conditions.

Russia experiences extreme temperatures ranging from –30° to +30° and for this reason the Telestack engineering department incorporated many features that enabled the unit to function in either extreme. An operator control cabin was mounted on the conveyor for full control and operation, which included hydraulic levelling, air conditioning and seating. Some further custom features on the unit included anti-condensation heating to drive the motors, LED emergency light within the panel, control panel heaters and several motor and gearbox upgrades.

Russia, like much of the industry sector, is facing pressures to implement environmentally friendly systems to their everyday processes. Another key factor for the Telestack purchase was its ability to offer many dust containment and extraction solutions. Fitted with fully galvanised dust covers on the full length of the outer conveyor, side wind plates on the inner conveyor, a retractable canvas telescopic dust cover on the inner conveyor, a fully enclosed hood at transfer point, dust extraction system on the feed-in and transfer points and an integrated compressor for dust extraction in the under-carriage, the entire rail-to-ship process is virtually dust free and simple to operate using the radio remote control.

Having over three decades of experience in the Ports industry, Telestack boasts one of the most impressive installment portfolios in the industry across a wide range of commodities. Its range of equipment encompasses track conveyors, hopper feeders, link conveyors, radial conveyors and the range is further enhanced with the ability to incorporate the All Wheel Travel feature on most models, thus allowing many operators to truly benefit from the #MovingToMobile concept.

For more information, please visit: telestack.com.

#WeHaveTonnesToTellYouAbout

THE GO-TO GRAIN HANDLERS

COMPANY NEWS

Grain handling has been the cornerstone of Buttimer Engineering since its inception in 1978, when it began providing equipment exclusively for the handling of bulk dairy and grain products.

The company can now boast four decades of experience in the design and supply of mechanical handling systems for grain and agri-industry applications. From the fabrication of bespoke pieces of equipment to the design and installation of complete turnkey materials handling systems, Buttimer's in-house design team and on-site engineers have a wealth of knowledge and practical experience of providing tailored solutions to agri-industry sectors, including malting, brewing, food processing, animal feed milling and energy crops.

The diversity and depth of Buttimer's expertise makes the company an ideal partner in the development and installation of grain handling systems.

GRAIN PROCESSING & STORAGE

Buttimer designs equipment and mechanical handling systems for a diverse range of grain products, including wheat, barley, maize (corn), rice, rapeseed and rapeseed meal, soya beans and soybean meal, coffee, food powders, wood fibres, pellets and other biomass. Each system is designed to complement the characteristics of the handled dry bulk product as well as the throughput and processing requirements of the client.

Some processing applications installed include: drying, de-stoning, cleaning, milling, blending, pelleting (cubing) and treating, as well as the required belt or chain conveying, bucket elevators, hoppers and loading and unloading equipment to rail, road, ship or other logistics systems.

Systems can be designed with full dust control, aspiration systems, ATEX and fire safety protocols to the specification of the grain's characteristics and client's process. Storage options include steel silos, concrete silos and flat-stores.

Each dry bulk product and the client's processing requirements will require a unique handling system. Buttimer works with clients to deliver the grain processing, storage and out-loading system that meets those unique requirements.

EQUIPMENT SUPPLY

The range of equipment supplied by Buttimer Engineering is quite comprehensive and covers all aspects of the grain-handling process. This includes a vast range of equipment for:

Mechanical conveying

Buttimer supplies a range of belt, chain, bucket and screw conveyors for the handling of dry bulk product. With motors, gears, belts and components customised to the clients process, Buttimer endeavours to provide the right unit based on requirements, prioritising efficiency and ease of maintenance.

Pneumatic conveying

Another form of conveying, Buttimer offers a selection of rotary valves, pneumatic conveying plant, two-way diverters and automatic filtering systems for handling powders and dry bulk products. Buttimer can provide the complete range of components, including slide-gates, ducting and air blowers.

Installed dust control

Buttimer provides a range of industrial dust control systems including extraction filters, ducting and air pressure systems. Our range of filtration solutions include bag and cartridge type dust capture. Fully customisable extraction units can be designed for aspiration in grain, biomass, recycling, metals and other similar sectors.

CASE STUDY

Buttimer Engineering has completed and provided equipment for many large projects in the grain handling sector for a number of high profile clients.;

Masnedo Bulk Terminal, Scandinavia

Recently, Buttimer Engineering carried out a range of design, fabrication, delivery, installation and maintenance work at Masnedo Bulk Terminal, Denmark. This industrial part of the port handles grain cargo and Buttimer has completed and provided equipment for the handling of bulk products.

The project included: silos with a total capacity of 88,000 cubic meters, a dryer with wheat capacity of 100 TPH, 500 tonnes of galvanised supporting structure and almost 60 different types of conveyors, with capacities vary from 300 to 1000 tonnes of wheat per hour.

To ensure sufficient land for the investment, the island had to be expanded by burying part of the Storstrømmen narrow waters. In the end, only half of the grain handling facility was actually installed on a natural island.

The concept for this bulk handling terminal was extremely ambitious, as it included a 100m long storage facility and truck loading with weighing system, remote control system and also two intake hoppers with aspiration systems, two pre-cleaning lines in front of the dryer and a shiploading line and expanded silo gallery.

The first stage of works was a flat-storage facility equipped with a belt conveyor. Assembled under the roof with a discharge car, ensures a high reliability and product control.

The storage facility is equipped with a weighing scale that controls the whole process of collecting materials from the store, while the truck loading station is responsible for collecting material from the storage in the buffer silo for loading the pre-weighted grain.

A great advantage of this system is the remote controlled loading chute. The operator, with help of the remote control mounted on the belt is able to supervise the filling process of a tank truck. The chute itself also reduces dust in the loading area due to the aspiration system.

The next stage of works involved two intake hoppers for grain. The hoppers are designed in such way that no grain remains and it enables quick truck unloading. The intake area has been equipped with an aspiration system across the entire width of the hopper, along with fully automated cleaning of filter bags.

Erection of a dryer was the next step. Drying facilities reach up to 125 TPH. Before the drying process, there are two hoppers for grain storage with total capacity of 3200m^2 There are also two drum scalpers and weighing scales for incoming quantity verification.

Finally, there is a shiploading line with a capacity of 1000 TPH, along with weighing scales.

The pivotal factor of the grain handling facility was the installation of eight silos equipped with silo discharge systems. The silos are also equipped with a ventilation system to prevent any condensation, guaranteeing the good quality of the stored grain.

The new and modern grain handling facility and its functionality gives not only great storage capabilities, but also operational capabilities that shall be resulting in a competitive advantage.

For more information, visit: buttimer.com

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GOING AGAINST THE GRAIN

Innovations in grain handling, monitoring and managing are resulting in seismic changes across the industry

The company responsible for building South Australia's first farmer and private equity partnership port at Lucky Bay says that the necessary approvals for a new port at Wallaroo are making progress.

T-Ports says it feels that successes so far vindicate its novel approach to handling grain, which involves co-operation direct with the grower. According to T-Ports CEO Kieran Carvill: "The T-Ports concept is a paradigm changer. It has the economic strength of changing the paradigm of how products are exported. It is about bringing the ports to the product."

"Feedback from growers has been overwhelmingly positive and we've had strong support. We are continuing to engage with stakeholders across all levels, from growers and carriers, to local councils and state government, and the feedback continues to be positive towards T-Ports leading this change in South Australia."

BUNKERS ALMOST COMPLETE AT T-PORTS LUCKY BAY BUNKER SITE © BARB WOOLFORD

"The port model can be quickly adapted and established in other locations — it is flexible and portable. The simplicity of it is we have the ability to put it in ports where there is already land-based infrastructure, for example rail infrastructure."

Planning for the second port in its network had been underway for several years and included significant scoping studies of the coastal environment, shoreline, inland freight networks and economic feasibility to ensure the port's long-term sustainability.

The initial design is finalised and planning negotiations are underway with section 49 (Crown Development) approval required for the project now at an advanced stage, with support from the Copper Coast Council and Department of Planning, Transport and Infrastructure.

The new port development means suppliers on in the Yorke Peninsula and Mid North regions will have access to an alternative supply chain, the company says. "The port at Wallaroo is the logical next step in the T-Ports journey and we are at a stage now where we are seeking the next stage of approvals with the relevant state government agencies and the Copper Coast Council," Carvill says.

"The feedback we've received to date has been very positive, with growers looking forward to competition in the market. Growers appreciate the need to increase competition in the state's supply chains which will ultimately benefit them.

"There are efficiencies and cost savings in building this port on the opposite side of the Spencer Gulf to Lucky Bay as we will utilise the same transshipment vessel, *Lucky Eyre*. She is currently having material handling systems installed in China ahead of arrival in Australian waters later this year.

"When the approval process is finalised, we will be speaking with growers and offering them the opportunity to become involved as shareholders, as we have done with Eyre Peninsula growers."

The development will include the port and loading facilities and bunker storage to be constructed in two phases. The port will have silo facilities with approximately 32,000 tonnes of storage, while the second phase will see construction of bunkers with storage capacity up to 250,000 tonnes of grain.

Carvill says construction on the port, which is expected to have an annual grain throughput of up to 500,000 tonnes, is likely to begin next year, with the site to be operational in 2021.

"The construction process will take between 12 and 18 months and during that phase we will look to utilise South Australian expertise and contractors as we have done at Lucky Bay," he says.

T-Ports' Lock bunker site has begun the first stage of its commissioning ahead of opening for the 2019 harvest, with the receipt of the first loads of grain into the site recently.

The grain was purchased by ADM during the 2018-19 season and stored on-farm in anticipation of delivery into T-Ports. Lock farmer and T-Ports director Andrew Polkinghorne delivered the first load and said it was exciting to see years of planning culminate in this important milestone.

"To finally have an alternative supply chain option on the Eyre Peninsula is great news for growers, who will benefit from the competition in the supply chain and will have some choice in how they manage their grain logistics," he said.

Carvill recently stressed the company's commitment to delivering a port close to the product — a key facet of the company's innovative business model solution for the export of Australian commodities.

The $130m Lucky Bay project will be open for growers product for the 2019 harvest. It features two up-country bunker storage sites at Lock and Lucky Bay, with approximately 500,000 tonnes of capacity, steel silos at port with approximately 24,000 tonnes of storage, port receival and loading facilities, a bespoke transhipment vessel with a capacity of 3,500 tonnes and a fertiliser import and storage facility.

"Following the beginning of construction on the port site over the past few weeks, we are well on track for opening for grower receivals later this year," Carvill says.

The plan is to deliver increased competition in the EP supply chain and growers could save up to $17 per tonne by transporting their grain directly to port, depending on their proximity to Lucky Bay, the company estimates.

"T-Ports is committed to the Eyre Peninsula and we know this development will provide grain growers in the region the competition in the supply chain they have been waiting a long time for," he says.

"We have also been proud to support South Australian businesses and regional communities along the process.

"We look forward to a long and productive relationship with growers on the Eyre Peninsula."

LIVERPOOL GOES LARGE

Meanwhile, global animal feed trader and supply chain leader ADM Agriculture has completed its £7.4m expansion at the Port of Liverpool, providing the equivalent of two football pitches of extra capacity for trade in bulk agricultural goods. This makes the Liverpool animal feed store the largest in the UK.

In 2018, the company signed a long-term contract with Peel Ports Group to invest in Liverpool and Glasgow with the aim of achieving imports across the North of England and Scotland of 1m tonnes each year.

As well as the new warehouse at Liverpool, which has been expanded by 140,000sq ft, ADM Agriculture has filled 470,000sq ft of capacity at Clydeport. The company has also started using Great Yarmouth Port for the first time to import animal feed, to service local markets near the port in the farming and fertiliser community.

Graham Atkinson, joint managing director at ADM Agriculture, says: "The combination of Peel Ports' locations and service with our product range is great for our end customers in agriculture. The reach and efficiencies we're now achieving means we can offer even better value, helping UK food producers to succeed."

Mark Whitworth, CEO of the Peel Ports Group, adds: "We're building a long-term partnership with ADM, one that now extends to three of our ports. Our network means we're uniquely well placed to provide access to the most important markets in the UK, with the quality of service to ensure they deliver for their customers."

The project involved construction of warehousing and installation of specialist conveyor equipment which pulled on the skills of civil, mechanical and electrical trades.

Construction took place simultaneously to the continuing live operation of the animal feed facility. 21,000 accident-free working hours went into the project, which was completed ahead of schedule in just nine months.

QUALITY CONTROL

GSI, a core brand of AGCO, and 151 Research have set up a technology partnership to improve grain quality by changing the way grain is monitored and managed.

The aim is to provide growers and commercial operators advanced insight into the moisture content of each individual bushel of grain in a steel storage bin.

Current technology largely relies on cable systems to monitor the temperature of grain in close proximity to the cable, leaving the majority of grain unchecked, the company explains.

GSI GrainViz creates a three dimensional moisture map using technology similar to that of an MRI or CT scan. Operators can see the moisture content of each individual bushel of grain and its location within the grain mass. The system can also detect human, insect, or rodent activity.

Instead of reporting problem spots after they are an issue, GSI GrainViz users can proactively manage the quality and quantity of their stored grain. The system's customer portal makes it easy to remotely monitor and manage grain conditions, control fans and receive detailed inventory reporting via any web-enabled device.

GSI GrainViz also optimises fan operation based on the condition of the grain and local weather, saving energy and preventing the hidden cost of over-drying. "We are excited about GSI's partnership with 151 Research to deliver best-in-class solutions for agriculture," says Tom Welke, AGCO senior vice president.

"This partnership is part of our ongoing strategy to rethink the way grain is stored, conditioned and moved, and will help our customers protect what they've worked so hard
to produce."

Paul Card, 151 Research CEO, says: "Our next generation GrainViz imaging technology combined with GSI's global grain system leadership will maximise grain condition and storage efficiency throughout the world.

"This partnership will allow us to expand our research and development pipeline, with plans to work together and grow the platform to improve grain quality and provide meaningful business intelligence from harvest to market."

RELIABLE RESULTS

COMPANY NEWS

Since its establishment some 50 years ago, Vigan Engineering has sold more than 1,350 machines in around 100 countries across the globe, including 270 high-capacity pieces of equipment. Its recognised international experience, reliability and specialised knowledge has made it a leader in the agribulk handling industry.

Designing and manufacturing ship loaders and unloaders for dry agribulk cargo, Vigan has the solution for all your bulk handling needs.

Our equipment is customised to meet any specific requirement and is suitable for a range of applications, depending on the cargo, size of vessel, points of discharge and destination of cargo, working conditions and so on.

Portable grain pumps

Available in suck only, suck and blow or blow only mode, their capacity range is 100-250 tons/hour. A wide range of accessories allow many different applications: vessel to truck, silo to train, vessel to vessel and so on.

Pneumatic continuous barge and ship unloaders (NIV)

Designed for a capacity range of 160-800 tons/hour for all sizes of vessels, these are fixed, on tyres or rails, with an electrical or diesel engine, adapted boom length and many other options. They are able to handle many kinds of free-flowing products (cereals, grains, meals, wood pellets), as well as more fragile ones (malt, cocoa beans).

Mechanical continuous ship unloaders — "simporter"

These can discharge up to 1,500 tons/hour from larger vessels (Panamax, Cape) thanks to their twin-belt technology.

Ship loaders

These are designed according to the loading capacity required, up to 2,000 tons/hour (adapted to conveyor speed and length, type of cargo, and so on). Like unloaders, many parameters are optional, such as fixed/on tyres/on rails, height and width, boom length, loading spout type, dust control system, control cabin, static/rotating thrower and so on.

Thanks to our strong relationships with business partners specialising in complementary equipment, Vigan is able to manage complete turnkey projects, such as grain terminals providing pneumatic and/or mechanical ship unloaders, cranes, conveyors, weighing and bagging stations, storage silos and portable machines, as well as supervising engineering and civil work. For instance, we have carried out installations in Pakistan (handling capacity of 1,600 tons/hour, storage of 75,000 tons) and in Djibouti (handling capacity of 1,200 tons/hour, storage of 60,000 tons).

Our high-level sales team and international network of sales agents and representatives enable the engineering and adaptation of any project to the customer's exact requirements. We are focused on efficiency, in order to reduce energy consumption and operational costs. We also provide our customers with long-term reliability and a strong after-sales service, working with them from start to finish, from the first drawings to the manufacturing and erection of its machines. Once in place, our NIV pneumatic unloaders are reliable for more than 50 years and customers can be assured of a continuous after-sales service. There is no better reward than receiving a new order from an existing customer, to increase capacity or equip another site.

Located at the heart of European Union, just 30km south of Brussels and one hour's drive from the international port of Antwerp, all our activities take place on the same 12,000 m^2 site. This enables easy communication between all departments, including sales, engineering, manufacturing, quality control and after-sales technical assistance, all contributing to provide the very best for our customers.

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OVERCOMING OBSTACLES

COMPANY NEWS

In the mining industry, modern cropping technologies require systems capable of transporting bulk materials efficiently from the quarry to their destination, across rough terrain and through populated areas. BEUMER Group supplies customised systems such as open troughed belt conveyors and closed pipe conveyors to carry out such tasks efficiently and effectively.

©: BEUMER GROUP. VIEW OF THE ENCLOSED CONVEYOR FLIGHT IN THE AREA OF THE BRIDGE

The systems operate quietly and only minimal amounts of dust or exhaust gases are emitted. Compared to trucks, they are often more energy-efficient and can be adjusted to the structure of the premises. They are also able to safely handle steep sloping routes, rivers or road crossings. The system provider determines the optimum conveying route, then takes over project planning and installation. BEUMER Group also ensures that the owner remains sustainably competitive, with cost efficiency and comprehensive customer support.

"With our belt conveying systems, we design comprehensive system solutions for the mining and cement industries worldwide", says Dr. Andreas Echelmeyer, head of the Conveying & Loading Systems sector at BEUMER Group, in Beckum, Germany.

One such example is Sichuan Yadong Cement Co's cement plant, located in the Chinese province of Sichuan, near Pengzhou, some 8,000km from BEUMER's headquarters. Since 2009, the company has been using a 12.7km-long BEUMER Group overland conveyor to transport limestone from the quarry to the intermediate bin. The troughed belt conveyor runs through hilly terrain and over rivers and unstable ground. In 2016, BEUMER Group installed two more overland conveyors, this time with an overall length of 13.7km to transport limestone to the cement plant.

"Unlike the first order, our task now was to build the conveyor through a populated area", explains Echelmeyer. "No material was to be lost during the process and no dust allowed to escape. In addition, the prescribed level for noise emissions was not to be exceeded."

Although it was for the same customer, the requirements could not have been more different. However, BEUMER Group can optimally adapt the closed pipe conveyors and the open troughed belt conveyors to each situation. "In order to reduce the noise emissions, as required at Sichuan Yadong Cement, we have installed special idlers and low-noise bearings, and can adapt the conveying speed to the application," says Echelmeyer.

BEUMER Group is an international leader in the manufacture of intralogistics systems for conveying, loading, palletising, packaging, sorting and distribution. With 4,500 employees worldwide, BEUMER Group has an annual turn over of about 900 Mio.EUR.

BEUMER Group and its subsidiaries and sales agencies provide their customers with high-quality system solutions and an extensive customer support network around the globe and across a wide range of industries, including bulk materials and piece goods, food/non-food, construction, mail order, mail and airport baggage handling.

For further information, please visit: beumer.com.

IRON GIANTS

Making up almost a third of the total worldwide dry bulk seaborne trade, iron ore is a critical trade – which is currently in the crosshairs as the US and China square up to a possible trade war, as marine advisor Basil M Karatzas explains.

The iron ore trade is one of the most critical trades for the seaborne dry bulk industry, as it consists of almost as much as one-third of the total worldwide dry bulk seaborne trade.

Iron ore is one of the heaviest density cargoes for dry bulk vessels, which might partially explain the statistic, but again, iron ore consists of 1.48bn tons of cargo annually in 2018 out of the 5.15bn tons of dry bulk cargo worldwide. As a matter of comparison, worldwide seaborne trade for the second most critical commodity, coal, stood at approximately 1.25bn tons in 2018.

The percentage of iron ore as compared to the world's dry bulk seaborne's trade has been fluctuating over time. However, as per Graph 1, iron ore has increased from approximately 17% of the world's dry bulk trade at the beginning of the millennium to almost 28% in 2018, a tremendous increase which is indicative of world, and also, People's Republic of China (PRC) economic growth.

Australia and Brazil are by far the largest exporters of iron ore, with 835m tons and 385m tons respectively and more than 80% of the world market share of iron ore exports. Industrial nations (Japan, South Korea, Taiwan, and so on) are the world's main iron ore importers. However, the gorilla that dominates iron ore worldwide imports is the PRC, which in 2018 imported 1.08bn tons of iron ore, or approximately 75% market share of all world seaborne iron ore imports.

In other words, Australia and Brazil have approximately 80% of the world's iron ore export market and PRC has almost a tantamount percentage of the import market; thus, grossly speaking, these three countries are often the proxy for the whole industry.

Iron ore cargoes are primarily transported on Capesize vessels of approximately 180,000 deadweight (dwt), on relatively long distances from Australia and Brazil to PRC; there are approximately 1,700 such vessels worldwide for such trade, with approximately 250 of these vessels dedicated to iron ore trade (as Very Large Ore Carriers (VLOCs)).

In the past decade, famously – or notoriously, depending on one's perspective – approximately 60 vessels of 400,000dwt were built in order to maximise efficiencies and economies of scale. The vessels were originally code-named "Valemax" as they were built primarily on Vale's initiative in an effort to gain a shipping advantage in the Chinese market against its Australian competition. While this is worthy of a business school's case study, Vale had soon to give up on its grandiose ambitions and these vessels were acquired by interests of COSCO (at the expense of multi-billion dollar write-offs for Vale and a ignominious dismissal of the company's CEO).

Coincidentally, for those paying attention to semantics, the prominent code-name for these very same vessels is now "Chinamax". But again, what's in a name, one may ask?

The trade of iron ore is considered a proxy for the steel industry (as iron ore is the prime material for steel production), which may also be considered a proxy for industrial production (where steel is required), and by extrapolation, of world trade, as steel and steel products are used worldwide in industry. Quite often, iron ore shipments are depended upon to make inferences on the state of the Chinese economy where state statistics are notoriously opaque.

More recently, with threats of tariffs and trade wars between the US and PRC, iron ore can, implicitly, be at the crosshairs of an extended trade confrontation. PRC's steel production has increased from 36% of the world's production in 2007 to approximately 49% of the world's production in 2007, according to data from the World Steel Council.

In the same time interval, Chinese consumption of steel increased from 34% to 46% as worldwide market share. And, Chinese steel products exports stand at approximately 75m tons in 2017, twice as much as of the second largest export, Japan, with 37m tons of steel exports. It is estimated that in 2017, approximately 9% of the Chinese steel production was allocated to exports, while in the previous years it was as high as 14% of domestic production.

It has been alleged (but no claims have been filed with the World Trade Organization) that PRC has been dumping (selling below their cost) steel products in the European and world

markets, thus rendering claims for price discrimination. At the current phase of the trade negotiations with PRC, the Trump administration has imposed 25% tariffs on Chinese imports. However, only 750,000 tons of steel are imported from PRC in the US (2.15% of the US steel imports). As a reminder, PRC exports 75m tons of steel internationally and US's imports from neighbouring Canada exceed 5m per annum.

In other words, and unless there is a concentrated effort by steel importing countries in Europe, Asia and the Americas to prove PRC's steel dumping practices, tariffs can be the only measure of curtailing Chinese steel exports worldwide (and, by induction, imports of iron ore). Thus far – and it is a very fluid situation – only the US has been keen to impose tariffs on Chinese steel imports. Therefore, unless a major course change takes place, talk of tariffs and trade wars are likely to have (by induction) minimal impact on iron ore trade.

It has been stipulated that PRC, facing tariffs and anti-globalisation efforts mainly from the US, will increase steel production and stimulate domestic investment in infrastructure as a way to compensate for declining exports. PRC has been a champion of monumental works and even bridges-to-nowhere, but it is stipulated that the "command economy" (as compared to a "market economy") will focus still on many required infrastructure projects that would both keep the Chinese economy growing at respectable rates and also improve the quality of lives of its citizens.

Production of steel has been increasing recently, and anecdotal evidence suggest that the increases are more substantial since the falling-out from the recent trade negotiations with the US. Iron ore stockpiles at major Chinese ports seem to be the lowest in more than two years now with fewer than 30 days of forward supply. Needless to say, from a shipowner's point of view, these two graphs bode well for increased iron ore imports, and hopefully higher freight rates for Capesize vessels, at least in the foreseeable future.

On the supply side of iron ore, this year's news is dominated by the collapse of the tailings dam at Vale's Corrego do Feijao iron ore mine in Minas Gerais, which burst on 25 January, killing 228 people, with 49 still missing. This is not the first time Vale's operational practices have come under government scrutiny and as recently as in May this year, Vale has warned that two more dams face an increased likelihood of bursting.

Since the dam accident, Vale's iron ore production has been curtailed by 93m tons, almost a 25% decline over comparable volumes from last year. As a result of Vale's lost production, the price of iron ore has jumped by 35% since the Vale accident and presently trading above $100/ton, a five-year high.

At such strong iron ore prices, mining companies have been reporting strong earnings of recent, to the delight of their shareholders. However, there are concerns that mining capacity can soon again exceed demand, which is likely to lead to commodity price softening. Vale has been under intense scrutiny by shareholders and the Brazilian government alike to improve its safety practices and bring production back to pre-dam collapse volumes in January 2019, as well as restore the approximately 95m ton production that has come offline.

In addition, Rio Tinto, playing on its strength on lower shipping costs to PRC from West Australia, announced in the autumn of 2018 a $3.5bn investment in a highly automated new iron mining facility in Koodaideri, in the Pilbara region, with an estimated additional 43m ton new production. There has been speculation that Rio would get more aggressive with new projects while Vale keeps preoccupied with correcting its safety record.

And, earlier in 2018, BHP had announced plans to invest about $2bn in its South Flank iron ore mine, while Fortescue Metals Group also gave the green light for its $1.9bn Eliwana iron ore mine in the Pilbara region. While in the short term, it seems that the iron ore price rally can be sustainable, in the long term there are concerns – especially, if PRC does not prove to keep buying commodities.

Probably the prospects for the iron ore trade are strong for the long term, at least much stronger than coal (especially steaming coal), which seems to be on the "wrong side of history". Iron ore is needed for steel production both in developed and developing countries, irrespective the outcome of trade negotiations.

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

FROM ROAD TO RAIL

Connecting ports to the hinterland by rail and barge transport has become increasingly important in reducing the carbon footprint resulting from heavy road transport use, at a time when reducing emissions is at the top of the political agenda

APM Terminals has been active in developing rail links to improve efficiency in connecting with the ports where it operates and has been working on a number of rail projects worldwide.

APM Terminals Pipavav, one of India's leading multi-purpose ports, launched a rail connection to its Kanpur Inland facility last year, giving customers the opportunity to connect more efficiently to the gateway port. The new connection was named the "Polymer Express" as the first train on the route was carrying polymer for Gail, the natural gas transmission company.

Pipavav handles liquid and dry bulk cargoes as well as containers, serving customers in the state of Gujarat with road and rail networks to India's hinterland and northwest.

"This new connection will help exporters and importers to move their cargo faster and more safely using an environmentally friendly mode of transport," explains Keld Pedersen, managing director at APM Terminals Pipavav.

This follows another recent connection in Italy, where new routes to the north from the port of Vado Ligure, have been resumed.

Vado Ligure is a large Mediterranean port that specialises in handling fresh fruit and vegetables, so rapid transit is essential. The new trains from the

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terminal travel to Rivalta Scrivia where the Rail Hub Europe is based. This is a strategic hub for Northern Italy's logistics system.

APM's facility in Gothenburg, Sweden, meanwhile, saw the return of three rail destinations in 2018 – Insjön, Gävle and Karlhamn – increasing the number of routes to Scandinavia's biggest rail hub to 13.

APM is looking to improve volumes and service levels for rail freight. "Sweden is a large and long country, with large export volumes," says Henrik Kristensen, managing director of APM Terminals Gothenburg. "To be competitive in both time and cost, rail transfers directly to ocean-going vessels are needed to avoid expensive and time-consuming transhipments."

Meanwhile, in the Americas, a new block-train service from APM Terminals Lazaro Cardenas, Mexico, is helping avoid congestion and delays commonly associated with other west-coast ports, to reach hinterland destinations in the US and Mexico. Not only is the service faster, but it's also proven to be much more secure than transport by truck.

GOING FOR GROWTH

The desire to boost rail freight capacity has led to a hook-up between Maritime Transport and DB Cargo in the UK to boost competition in the intermodal market.

After reaching agreement in principle with DB Cargo UK, Maritime Transport has announced the launch of a new division – Maritime Intermodal – which will initially contract four dedicated services out of Felixstowe and Southampton.

The long-term agreement will enable each organisation to operate to its strengths, driving up service and efficiency which will result in increased intermodal capacity and growth in rail freight.

Under the terms of the proposed agreement, DB Cargo UK will be contracted to run Maritime Intermodal's rail operations out of Felixstowe and Southampton. Maritime Intermodal, meanwhile, will take on responsibility for DB Cargo UK's terminals in Trafford Park, Manchester and Wakefield in West Yorkshire, thus strengthening the road haulier's network of strategic hubs.

Maritime Intermodal is also committed to significant investment in both equipment and groundworks at the two sites, improving terminal turnaround times whilst also increasing container storage capacities. The terminals will remain open-access to both intermodal and non-intermodal services. Maritime Intermodal will retain existing services and seek additional services from all UK ports with all freight operating companies with the intention of increasing its intermodal offering.

Maritime Intermodal will also take responsibility for DB Cargo UK's existing intermodal customers on its Felixstowe and Southampton services. DB Cargo UK will retain and grow its remaining intermodal business including key flows to and from Scotland.

Hans-Georg Werner, CEO of DB Cargo UK, says: "This is an exciting new agreement that brings together two of the largest and most successful freight companies in the UK to offer an industry-leading service to customers.

"It will enable DB Cargo UK to focus on what it does best — the efficient and reliable running of rail freight services, while giving Maritime the platform to offer its customers further capacity to move its container traffic."

He adds: "Intermodal is the fastest growing freight market, yet our terminals were under-utilised. Maritime is a very successful logistics business and has the volumes and desire to turn these assets into sustainable and profitable distribution centres. It's a real win-win and we look forward to working with Maritime going forward."

John Williams, Executive Chairman of Maritime Group, says: "The launch of Maritime Intermodal sees a new division of our business created with the intention of offering increased resource to our customers in an increasingly difficult market place."

He adds: "In addition, over the four services alone, more than 32m miles will be taken off the UK road network each year, reducing both congestion and carbon dioxide emissions. This further enhances our creativity in developing intermodal solutions for our customers."

Rail transport is also been used to satisfy Asian demand for Australian coal with a shipment of 96 coal wagons arriving at the Port of Newcastle recently to support Asia's strong demand for the Hunter Valley's high quality thermal coal

Ed McKeiver, group executive of Aurizon's coal business, says the company's customers were helping power fast-growing economies in Asia and on the Indian sub-continent with high-energy, low ash coal from Australia.

"Although Japan continues to be the nation's largest trading partner of thermal coal, importing 80m tonnes of Australian thermal coal in the 2018 financial year (with around 80% sourced from the Hunter Valley), almost 10m tonnes was exported from Newcastle coal terminals to newer trading partners such as India, Malaysia, Philippines and Thailand during the same period.

"To support export volumes, our new wagons can carry up to 98 tonnes of coal, and with more than 80 wagons on every train, which means more than 8,000 tonnes of coal can be hauled to port on each load," he says. "We continue to see strong growth in our Hunter Valley business with our coal haulage growing by 10% in the past financial year, from 47.7m tonnes in the 2017 financial year to 52.3m tonnes in 2018.

McKeiver says the wagons in the consignment are part of a bigger order that will see the company's coal fleet expand to almost 9,000 wagons – more than a third larger than Aurizon's closest competitor.

"Our confidence in the outlook for Australia's coal export markets is driving a national growth plan across our coal business. While the current wagons will be used to cover Hunter Valley demand, there are also plans to obtain additional rolling stock to expand the fleet," he says.

WAGON TIPPLER TRAIN UNLOADING SYSTEMS

EARLY PLANNING ASSURES A TURN FOR THE BETTER

COMPANY NEWS

As longstanding designers and engineers of train unloading systems, Ashton Bulk Ltd always advocate that the selection of train unloading system equipment for ports, power plants, metals processing facilities or other automated handling operations is always an important choice for what is a critical part of any plant. Any disruption or downtime to unloading processes can be costly and availability and reliability are essential. The life of the equipment also needs to be taken into consideration because the replacement of these machines is costly and can interrupt production for several weeks. Foresight and planning of the train unloading system is therefore as important as any other piece of plant in a port bulk system.

This has led to Ashton Bulk being a first point of contact when planning new systems, optimising current operations and maximising throughput in a consistent and reliable manner.

Each and every aspect of the facility and client's requirements need to be addressed during, as close to, the feasibility stage of a project and, wherever possible, with direct interaction between designers and the key stake holders, including the plant operational staff.

CASE STUDIES

Compagnie des Bauxites de Guinèe (CBG), Kamsar Expansion Project, Guinea, West Africa

CBG has operated two Strachan & Henshaw Ltd Tipplers since the 1970's, aided by Ashton Bulk in recent years. When a significant upgrade was required to its operations, Ashton Bulk and Tenova-Takraf were selected as the preferred designers and supplier. Throughput of up to 25m tonnes per annum were required utilising a Twin Tippler Unit Train Unloading System. A system with a life requirement of over 4m operating cycles has been supplied, with backup offered by the Twin Tippler arrangement and spare capacity provided within the Positioner drive system.

Particular challenges arose from the port operator requiring the system to handle new rotary coupled rolling stock as well as the existing wagon fleet that was not originally designed for a unit train rotary coupled installation.

Ashton Bulk, CBG, Tenova-Takraf, the Fluor Corporation and Systra-Canarail engaged together to address the developments and the changes to the system design and operational requirements were implemented by Ashton Bulk.

These alterations were possible because of the modular nature of Ashton Bulk design Train Unloading Systems, together with several decades of our experience in adapting to our clients evolving requirements.

Ultimately, the system operated at and above the original throughput requirements. The plant will now be able to function flexibly, handling both old and new rolling stock within the same train.

Transnet Group Capital, Saldanha Bay Phase 3, South Africa

A long-term operator of unit train unloading systems, a significant upgrade to facilities was required in 2016. Ashton Bulk and Tenova-Takraf were selected as the preferred designer and supplier. First and foremost in the engineering challenges was to design the equipment in accordance with the latest international design code of practice, EN 13001 – General Principles of Crane Design. In addition, the brief included supplying equipment to achieve in excess of 4m design life cycles.

Following experiences of shortfalls in the existing plant meeting these conditions, Transnet engaged Logan Engineering Consulting (LEC) Pty of Brisbane Australia to audit the design of all Ashton Bulk engineered equipment. This integrated process led to the development of an industry-leading design of a tandem tippler cage structure incorporating a linked method of construction.

Although "pin-jointed" machines have been developed in the past by Strachan & Henshaw (UK) with the intention of reducing points of stress concentration and structural fatigue cracking in large tippler cage structures, the design only partially achieved these objectives with structural repair required prior to the operational design life being achieved. The engineers engaged in the design and audit of the Ashton Bulk Tandem Linked Cage Tippler® confirmed a minimum design life for the new Saldanha Phase 3 Tippler at 4.8m

design life cycles, which has since been improved for future projects to a minimum of 5m cycles. This type of machine will be the basis of all tandem rotary type tipplers offered by Ashton Bulk and Tenova-Takraf for port and other types of installation in the future because rigid cage and the historic type of pin-jointed cages for large, high duty Tipplers have proven not to achieve their operating cycle and design life predictions

The train positioner also incorporates features that assist in preventing events such as overload of the machine due to unplanned train brake applications. If incidents do occur, the arrangement of the machines is such that major structural and mechanical parts remain intact with only replacement of secondary equipment being required, thus reducing potential downtime and minimising aftermarket costs.

Electricity Supply Commission (ESKOM), Majuba Power Station, Mpumalanga, South Africa

The unit train unloading system at ESKOM's power plant at Majuba has underperformed since its installation in the 1980s, related primarily to the design of the train positioner. The wagons utilised at the plant rely on the train positioner pushing the train using the pushing pads located at each corner of the wagons. The existing Positioner relied on a bridge structure to straddle the train and engage on either side of the wagons. The flexible nature of the bridge placed too much load on one side of the train and the associated parts of the positioner, resulting in localised overloads, part failures and a significant shortfall in equipment availability. These factors resulted in coal needing to be delivered to the plant by 700 road trucks per day to make up the shortfall.

Ashton Bulk, having worked with the consulting engineers DemcoTech at the feasibility stage of the project, was engaged with Tenova- Takraf to design and supply new train positioners and train holding equipment and undertake an engineering audit of the existing wagon tipplers. With the advent and development of AC-variable speed drives, Ashton Bulk, together with our partner company

TWIN SINGLE CAGE TIPPLER ARRANGEMENT AT CBG KAMSAR, GUINEA

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IAC (UK), developed a drive system that permitted two train positioners to be used, one on each side of the main line track, for hauling the trains instead of the previous bridge system. The positioners are fully synchronised to ensure equal load sharing to avoid any of the overloading experienced previously. This type of system is now a ready replacement for previously installed bridge type train positioners and for use with wagons with corner pusher pads.

At mid-point in the design process, Eskom requested different wagons from those originally specified. Based on this request, Ashton Bulk revised the control system handling methodology and the manner in which the positioners and train holding equipment physically engaged with the trains. These revisions were undertaken in accordance with strict time limits.

POINTS TO CONSIDER

The following rules and steps are recommended for early consideration whenever a train unloading system is to be included in a port facility:

- Standardised and "off the shelf " train unloading systems are not a realistic approach on which to embark on the design and engineering process given the high number of variables and the bespoke nature of train handling and unloading.
- A modular approach to a train unloading system design and a range of adaptable designs and proven engineering principles provides the customer with the most reliable, flexible and long-term cost- effective solution.
- The key to a tailored solution for a port operator's particular requirements is early involvement of fully experienced train unloading system engineers and maintaining access to that expertise throughout the project.
- The design life of the equipment, particularly fatigue life, should be specified at a level that pertains to the operator's true required throughput. Where 20 to 25 years design life before replacement is required, the number of stress cycles should be specified at no lower than 4m and targeted at 5m or more.
- Ensure that designers and suppliers provide the train unloading system in accordance with the required design life and have adhered to recognised design codes of practice. Independent audit of designs should be a key requirement of any requests for quotation, either to be undertaken during the project design phase or by having the supplier offer a pre-audited or part audited design with their bid documents to substantiate the technical viability of the proposal.

Essentially, in the era of "cut and paste", the provenance and suitability of any train unloading system specification should always be established before implementation.

Ashton Bulk operates as an independent engineering and design company specialising in the supply of train unloading system designs to clients, including Tenova-Takraf GmbH on a worldwide basis and Larsen & Toubro in India.

To take a look at our full range of train unloading systems suitable for port and other operations, or for any other information, visit: **ashtonbulk.com**

A SMARTER APPROACH

New bulk carrier design and smart technology's appliance to newbuilding are key technology trends – and classification societies are clearly an important part of the process.

Classification societies have banded together with technology organisations such as the Shanghai Merchant Ship Design & Research Institute (SDARI) to develop new designs that also have to take into consideration the impact of new regulation such as the forthcoming sulphur 2020 rules.

The American Bureau of Shipping (ABS) recently co-hosted a seminar with SDARI that focused on the latest bulk carrier ship designs, regulatory compliance options and smart technologies that can improve performance and drive efficiencies across the industry.

Discussions involved the smart ship concept, new bulk carrier designs and EEDI Phase 3 considerations.

As ABS global marine vice president Christina Wang pointed out at the seminar, smart functions are becoming increasingly common on board marine vessels, providing crew with key information to aid decision-making. She explained how the ABS goal-based framework for the implementation of smart functions can be customised to client needs and coupled with risk–based technical requirements to provide a clear validation and verification path.

ABS recently published the *Guide for Smart Functions for Marine Vessels*

and Offshore Units to help marine and offshore owners and operators capitalise on their operational data.

The guide introduces an approach leading to the marine and offshore industries' first set of notations to help owners and operators qualify and utilise smart functions. Through the analytics that they provide, smart functions can proactively manage asset health and performance, providing a mechanism for sustainability and improved uptime. Smart functions can also lead to increasingly condition-based approaches to maintenance strategies and class surveys.

The approach laid out in the guide applies a risk-informed set of easy-to-apply prescriptive requirements for engineering review and survey of the smart technology applications.

"Smart technology will be a key factor for industry sustainability in the coming years. Future adoption of smart technology and its ability to enable better decision making and continuous improvement will coincide with quickly changing environmental requirements," says ABS chief executive Christopher Wiernicki. "Smart technologies and how a vessel's data is utilised to optimise performance can drive improved efficiency today and will be critical to meeting the reduced emissions requirements being developed by the International Maritime Organization."

The use of operational data and analytics, such as machine learning, enable better decisions related to vessel performance and can also provide early indicators that help avoid failures and downtime. The implementation of smart functions helps crew and shore-based personnel make decisions to speed corrective actions.

The guide covers functions related to performance, health and crew support. It also introduces three new notations that support the recognition of a vessel's data infrastructure as well as health monitoring functions, which can be utilised to directly support survey activity. It also lays out a product design assessment scheme coupled with a service provider approval process to support equipment manufacturers, shipyards, owners as well as third-party software providers, as they develop products and services for smart functionality for use onboard ABS-classed vessels.

TALKING COMPLIANCE

As the industry prepares for the entry into force of Sulphur 2020, the International Association of Classification Societies (IACS) has been stressing some of the issues that the industry will need to address.

As IACS points out, while the use of non-compliant fuels is covered in MARPOL Annex VI, implementation is in the hands of port state control in individual states. There needs to be more clarity in this respect and the issue as well as that of fuel oil non-availability reports is due to be discussed at IMO this month. Other issues highlighted by IACS include those of verifying the quality of so-called compliant fuels in ports and its compatibility with machinery on board. The issue of incompatibility of fuels on board and what will happen if they are mixed is also being addressed, with advice being to segregate fuel tanks where necessary.

NOISE REDUCTION

Meanwhile, LR has also been expanding the notation process with a new airborne noise emission notation and ShipRight procedure to meet increasing demand for a standard and methodology to control airborne noise emissions (ABN) from ships.

The new notation defines a set of limit levels for ABN. This enables ports to better monitor overall noise levels from ship calls. It will assist ports in determining which and how many ships can access the most noise sensitive areas of the port. It will also allow ports to specify ships require a certain ABN notation to stay in a noise sensitive area of the port, for example those locations close to residential areas.

The new ABN notation also enables ship owners to demonstrate that their vessels have controlled ABN to gain access to noise sensitive areas, such as ports in city centres or natural sanctuaries.

According to principal consultant Per Trøjgård Andersen: "The notation will assist ports and shipowners in controlling and verifying airborne noise emissions, a field in which LR is at the forefront of technical development."

Airborne noise levels present similar challenges for inland waterways. Directive (EU) 2016/1629 specifies the maximum noise level from a ship in the EU when sailing and at berth. However, achieving the ABN notation will ensure that the ship complies with these requirements.

The notation defines five limit levels for the airborne noise emission and also describes how the compliance can be ensured at the design stage by giving examples of how to calculate the expected noise levels.

FORWARD THINKING

The shipping industry not only has to deliver on the Sulphur 2020 guidelines, but also on a more forward-looking approach on carbon emissions to 2050.

Lloyd's Register and University Maritime Advisory Services (UMAS) released a study earlier this year – Zero-Emission Vessels Transition Pathways – that aims to show what is needed to enable the transition, both at the ship and supply infrastructure level, to deliver zero-emission vessels (ZEVs) that are crucial to achieve the IMO's Greenhouse Gas Strategy 2050 ambition.

The study seeks to address key questions about ZEVs including what needs to happen between now and in the next three decades for ship deployment and what needs to happen within this period to develop the supply infrastructure.

Key milestones, barriers and enablers over the specified timeframe are considered, as well as cost implications, operating profile and how policy measures such as carbon pricing could influence the outcomes.

The approaches suggested by the study would achieve the IMO's goal of a greenhouse gas emission reduction of at least 50% by 2050 and possibly go beyond this goal to achieve a zero-carbon target.

"Early action in the next decade is needed to achieve the goal," the study says. "There is still uncertainty when choosing one fuel, one technology and one route and therefore this decade will need to see full-scale pilots and prototypes, the development of policy, standards and rules, and will be characterised by first adopters driven by consumer pressure."

Batteries on vessels and the use of on-shore power are considered as two important means of reducing dependency on fossil fuels. The use of biofuel and methanol are considered attractive options.

"The evolution of shipping's fuel mix is closely linked to the evolution of the wider energy system, so a clear signal needs to be given to the potential fuel producers," the study says. "We expect to see a consolidation of what the dominant technologies for use on board will be and the interactions between end-fuel price, machinery costs and revenue loss will be better understood. We will start to see ships being designed to store less energy on board and changes to their operating profile to bunker more frequently."

LR's global sustainability manager, Katharine Palmer says: "2020-2030 is the most significant decade and the study stresses the urgency for early action. Scaling up of zero-carbon fuels relies on clarity of the direction taken in the wider energy system. Uncertainty risks delaying important investments within the world's fleet and infrastructure."

UMAS' principal consultant, Carlo Raucci adds: "It doesn't happen very often, to live such moments of a global transition towards a new paradigm. This study has given us the opportunity to reflect on the actions needed to achieve a desirable future with zero-emission vessels dominating the shipping industry.

"There are different paths to reach this goal and every turn of a path has its seduction and promises attached. A path may hold so many possibilities for shipping stakeholders but what is clear though is that the era of emitting fossil fuels must be left behind."

REMOTE OUTLOOK

Another innovation coming through is from class society DNV GL, whereby all its ships in class are now able to use remote surveys for some inspections through the Veracity data platform. This means that for a range of surveys, a DNV GL surveyor will not be required to travel to the vessel. Instead, by using an online connection or video streaming link, a dedicated team of remote surveyors can provide support to vessels anywhere in the world with documentation, images, video (streaming or recordings), and input provided by the customer and crew.

"This is another big step forward in using the power of digitalisation and increased connectivity to deliver smarter and more efficient services, "says Knut Ørbeck-Nilssen, CEO of DNV GL – Maritime. "Remote surveys allow us to free up time for our customers, while delivering our services with unparalleled response time.

"In addition, cutting down on unnecessary travel can result in lower costs, less waiting and more operational up-time. We've had a great response from our customers and support from major flag states and we are deeply appreciative of the feedback provided to us to make this project a great success."

When a customer makes a survey request through DNV GL's fleet portal on the Veracity platform, they may, for some survey types, be given the option by the system to choose to carry out the survey remotely. All such survey requests are then evaluated by a remote surveyor to make sure that the survey can be offered remotely. The remote survey regime has been constructed to ensure that the level of assurance is equivalent to an onboard survey.

"We are running the remote surveys through our popular DATE hubs," Ørbeck-Nilssen says. "This gives us consistency in how the surveys are handled and the ability to offer around the clock service anywhere in the world at exceptional quality levels.

"In addition, the introduction of electronic certificates for all vessels, which allows us to publish and transmit the survey results immediately, has been pivotal to our successful launch of remote surveys."

The types of surveys able to be offered as remote surveys include occasional surveys that fall between periodical surveys, documentation-based surveys, testing and witnessing systems during normal operation, and surveys not ordered together with annual surveys.

Periodical surveys, such as the annual survey of a vessel, are not part of the remote survey programme as they require a surveyor onboard.

HANDLING IT RIGHT

Correct handling of bagged material is essential if potentially costly claims are to be avoided, warn insurers

North P&I club says that while charterers may request for ventilation channels to be built while loading bagged cargoes, whether or not these are effective is a debatable point.

This issue was the subject of a dispute last year over the correct way to build ventilation channels. Concerns particularly apply to grain cargoes and rice, which are obviously bagged up before shipment. Natural ventilation during a voyage is less effective than mechanical ventilation, the advice suggests.

Advice taken by the club from CWA International suggested that it was unclear whether cargoes stowed with in-built ventilation channels were in better condition than those without at the end of the voyage. Another issue was whether the ventilation channels were correctly built.

However, most bulk vessels carrying bagged agricultural cargoes can only facilitate natural ventilation during a voyage and this is less effective than mechanical ventilation.

The club said other experts suggested that the real issue was not whether rice or grain in bags needed a supply of air, but one of the commodity's "sweating" when moist air in the cargo hold came into contact with the steelwork of the ship's hull. This process would be exacerbated when product was loaded in warm and humid climate conditions. Condensation on the vessel's steelwork could lead to moisture dripping into the bags, resulting in the grain becoming mouldy.

North stresses that question marks over the effectiveness of ventilation channels should not lead the crew to refuse their use, merely to be aware that effectiveness might be limited.

North has also highlighted the chances of claims arising from damage to breakbulk and bagged cargoes that have been loaded in the same holds on top of flexible intermediate bulk containers (FIBCs) or bulk bags, resulting in the stow collapsing.

"Bulk bags cannot be considered to be a solid, strong or secure base on which to load other items of cargo, no matter how well the bulk bags have been loaded, stowed and secured. Loading break bulk cargo on top of bulk bags can also create significant problems with regards to locating suitable lashing points, as the vessel may not be fitted with suitable securing points at higher locations on the bulkheads," the club says.

It recommends preparing a detailed loading plan in cases where breakbulk or project cargo is due to be loaded with bulk bags. The loading plans should take in the requirements contained in the Code of Safe Practice for Cargo Stowage

and Securing and should include lashing and stability calculations. Information on cargo being loaded should be available before the cargo is loaded. Any additional cargo that it is intended to load at a late stage should take into account the nature of the cargo already on the vessel, in case the additional cargo might jeopardise the stability of the ship.

PROPER PACKING

Finding the right packaging solution for the right product is clearly vital and the approach will vary according to the industry in question.

For example, for the efficient filling of paper bags with bulk material, particularly cement and construction materials the Beumer fillpac R is one product on the market. Depending on the requirements and on the material characteristics such as bulk density, grain size, material density or flow behaviour, Beumer can offer both air and impeller filling machines from fillpac R series.

The air filling machines are suitable for bagging pourable and coarse-grained products with particle sizes up to 10mm, whereas the impeller technology is suited for free flowing and fine-grained products like cement or gypsum. Adding the Beumer bag placer and a ream magazine to the system makes the filling even more efficient.

The filled bags — made from different materials such as paper, PE or PP and have different sizes, weights and designs — have to be stacked on pallets in a stable and precise way, Beumer explains. The paletpac can be quickly assembled thanks to its modular design, is easily accessible for maintenance and can be operated intuitively and flexibly adapted to different packing patterns. Depending on the product requirements, the paletpac can be equipped with a clamp-type or twin-belt turning device that positions the bags smoothly, quickly and exactly.

For palletising cartons, boxes, canisters or trays, there is the robotpac. This space-saving, fully automatic articulated robot solves complex palletising and de-palletising challenges reliably and efficiently. The user receives gripping systems suitable for all types of packaged goods, which can be easily exchanged.

Another solution for protecting the bags against environmental factors is the Beumer bag-in-bag. This system packages one or several filled paper bags quickly and reliably with a weather-resistant plastic film. This ensures that the contents are perfectly protected against moisture, dust or insect infestation when they are transported or stored.

PORT PARTNERSHIP

Associated British Ports (ABP), in partnership with national grain, seed and fertiliser company COFCO International, has recently officially unveiled a new fertiliser blending and bagging plant at the Port of Ipswich.

Representing an investment of £700,000, the new plant will be based in the port's Coldock Bulk Bagging Terminal and will allow COFCO to increase the range of fertilisers offered to UK farmers, develop new products and improve distribution efficiency.

The delivery of the new plant marks the completion of the latest phase of a £2m investment project that has seen ABP create new jobs and purchase two high-speed bagging lines, which will primarily be used for fertiliser handling.

Andrew Harston, ABP Short Sea Ports director, says: "This latest investment in value-adding port facilities will help grow the business of our customer, COFCO International UK.

"Together with ABP's other two East Anglian ports of Lowestoft and King's Lynn, Ipswich plays a vital role in supporting the region al economy and local jobs and we look forward to continuing to do so in future."

Mark Dordery, COFCO International UK managing director, says: "The new facilities at Ipswich are key in helping us develop our range of fertiliser products and services to our growing customer-base across East Anglia and into the whole of the UK.

"Growers face increasing challenges to produce crops as cost-effectively as possible to meet consumer demands while being increasingly aware of environmental requirements.

"The modern and highly efficient facilities at the new plant will help us refine our current fertiliser products while allowing us to develop and introduce exciting new options, including Limus Nitrogen Management, BASF's latest urea inhibitor technology, to help UK growers achieve greater production efficiency in the future."

BREAKBULK CENTRE

Rotterdam's Waalhaven is to be the centre of a new breakbulk "carrousel", giving a boost to the segment with new users at a 12 hectare site with 1,155m of quay and planned renovation by Rotterdam port authority.

"This operation, which was carefully prepared over a long period of time with the companies involved, enables us to demonstrate that we are giving the Rotterdam breakbulk sector ample space to develop," says Emile Hoogsteden, director containers, breakbulk and logistics at the Port of Rotterdam Authority. "This particularly concerns heavy lift, project cargo, steel and non-ferrous metals. Rotterdam is already well-positioned for this, due to its unique location, container logistics connections and increasing number of scheduled breakbulk and heavy cargo services. The investments now being made by these companies and the Port Authority will form a further incentive to make Rotterdam the breakbulk hub of Europe."

Four breakbulk companies are moving into the space vacated by MRS's relocation to Eemhaven. They are Metaal Transport (non-ferrous metals and steel), Broekman Project Services (heavy lift, project cargo and offshore), JC Meijers (multi-purpose terminal) and RHB/ Rotterdams Havenbedrijf (specialist heavy lift and project cargo).

"We currently have a site on the Heijplaatweg and on Waalhaven Noordzijde," says Willem-Jan de Geus, director of Metaal Transport. "We have also been leasing various warehouses throughout the port area to enable us to meet demand. With the new 90,000sq m area of land on Droogdokweg, we can concentrate our activities and operate much more efficiently."

Metaal Transport will retain the Heijplaatweg location, including the offices, and will construct a 25,000sq m warehouse on the new site.

ANALYSING THE ISSUES

Recent reports focus on enclosed space fatalities and liquefaction, as well as the long-awaited Marshall Islands analysis of the loss of the *Stellar Daisy* and 22 crew members

Intercargo's most recent *Bulk Carrier Casualty Report 2018*, which analysed reported bulk carrier losses from 2009 to 2018, found 188 lives were lost and 48 bulk carriers over 10,000dwt were identified as total losses.

Although there has been no reported loss of a bulk carrier in 2018 and the 10-year trends in annual average numbers of lives and dry cargo ships lost show positive signs of safety improvement, there is no room for complacency, Intercargo warned.

Cargo failure and liquefaction continue to be a major concern for dry bulk shipping. Nine casualties with loss of 101 seafarers' lives between 2009 and 2018 were believed to be from cargo related failures — six bulk carriers carrying nickel ore from Indonesia, two with laterite (clay) iron ore from India and one with bauxite from Malaysia.

Lessons learned from past incidents play an important role in determining the scope of additional safety improvements. Some 23 investigation reports on these 48 losses were still not submitted to the International Maritime Organization (IMO) by their flag States, as per information on IMO GISIS database at end January 2019.

The highest loss of life has been attributed to cargo failure (liquefaction), totalling 101 lives lost from the nine casualties. Two investigation reports of those nine cases have not been submitted to the IMO.

The most common reported cause of ship losses has been grounding, totalling 19 losses among the 48 cases. Six investigation reports of those 19 cases have not been submitted to IMO.

Six ships lost with unknown causes claimed 61 lives and five investigation reports of those cases have not been submitted to IMO. Reported flooding led to losses of six ships. No investigation report of those six cases has been submitted to IMO.

STELLAR DAISY

The recent publication of the *Stellar Daisy* casualty report on 19 April was much awaited by the industry and there had been many calls for its publication, which eventually took place more than two years after the tragic sinking on 31 March 2017 with the loss of 22 lives.

In its comments, Intercargo reiterated the importance of flag states' timely submission of casualty investigation reports to the IMO, as a means for identifying the cause of incidents and enabling preventive actions to be taken.

The marine safety investigation determined that the likely direct cause of *Stellar Daisy* foundering was a rapid list to port following a catastrophic structural failure of the ship's hull that resulted in a loss of buoyancy and uncontrolled flooding. The structural failure and flooding are thought to have begun in the No. 2 port water ballast tank (WBT) and then progressed rapidly to include structural failure and flooding in multiple WBTs, voids and cargo holds, the report states.

According to its findings, the structural damage was likely to be due to a combination of factors, including the strength of the ship's structure being compromised over time due to material fatigue, corrosion, unidentified structural defects, multi-port loading and the forces imposed on the hull as a result of the weather conditions the ship encountered between immediately prior to the accident.

The Administrator's marine safety investigation also concluded that the likely causal factors included:

1. The large port and starboard wing tanks increased the potential for a major structural failure and loss of buoyancy in the event that one or more of these tanks flooded while the ship was in a laden condition.
2. A gap in the additional safety measures for bulk carriers contained in the International Convention for the Safety of Life at Sea (SOLAS), 1974, Chapter XII, regulation 5.
3. Ineffective assessments of structural damage identified when the ship was in dry dock in 2011, 2012, and 2015, which failed to determine the cause of the structural damage, identify any potential defects with the conversion design, or require the development of appropriate repair plans.

In the years following the accident, attention has centred, among other issues, on the role played by the ship's classification society the Korean Register (KR), not to mention the viability of converting a VLCC for use as an ore carrier.

Commenting on the conclusions of the Marshall Island's report, KR said in a statement that it agreed with the majority of the content contained within the report, including the most likely explanation for the loss of the vessel was due to a catastrophic structural failure of the ship's hull, which probably began in No 2 Port WBT. It also suggested it agrees with the report that the fatigue cracking was probably undetectable by visual inspection prior to the sinking.

KR said in the statement, however, that it believed areas of the report that are directed specifically at KR required further explanation, notably comments relating to material fatigue, failure analysis and reporting to the flag state administration.

The report says that while KR did conduct a failure analysis of the damage to the transverse bulkhead at frame No. 65, it did not conduct a failure analysis after an extensive number of cracks were identified and repaired when the ship was in drydock in 2011, within two years after the conversion was completed. As a result, potential weaknesses with design details were not identified. This is an indication that KR's monitoring and assessment of the ship's structural integrity was not as effective as it might have been.

In response, KR said a failure analysis is carried out at the discretion of the attending surveyor when, in their assessment, a defect or damage is "out of the ordinary" and further scrutiny is required. The Marshall Islands report correctly stated that a failure analysis of the damage to the transverse bulkhead at frame No. 65 was conducted as it was determined by the attending surveyor to be "out of the ordinary" and similar damage was not found in other parts of the ship.

However, the cracks and defects identified and repaired at the time of dry docking in 2011 were determined to be those typically found on board ships of a similar age. Based on this observation, the attending surveyor determined that the cracks/defects were not "out of the ordinary" and as long as proper repairs were performed, a failure analysis was not needed, KR said.

KR added a failure analysis was carried out to assess the structural integrity of damage to the transverse bulkhead at frame No. 65, the result of which showed that there was no area of concern and proper repairs were undertaken to renew the damaged part to its original condition.

It also examined the surrounding bulkheads of Stellar Daisy, as well as bulkheads on 29 other converted VLOCs (approximately 230 bulkheads in total), to determine if there were any similar defects. The investigation determined there were no areas of concern. As a thorough inspection and comprehensive repairs were undertaken, KR determined that there was no "dangerous" structural issue that warranted reporting to the flag administration.

ENCLOSED SPACES

InterManager, meanwhile, has once again warned that seafarers and dock workers continue to die while working in enclosed spaces onboard vessels because there is not enough understanding throughout the shipping industry of the risks faced by today's seafarers.

"Dangerous timeframes are imposed for hazardous tasks and safety improvements do not happen because shipping industry investigations encourage a 'blame culture'," says InterManager.

A large range of vessel operators, managers and crew took part in the three-month, industry-wide survey, with crew from almost 250 ships providing feedback — representing more than 5,000 seafarers.

Key concerns included a perceived lack of improvement in the design of vessels with not enough consideration being given to access areas and the people working in them. As well as being hard to reach, enclosed spaces are frequently impossible to properly ventilate or to measure the atmosphere in, the respondents said.

Unrealistically tight timeframes for cargo hold and tank preparation were likened to "bullying on an industrial scale", with seafarers calling on ship managers to shield them from unrealistic commercial time pressures.

Seafarers asked for more training, prioritisation of management-led safety cultures, and suggested using the "fear factor" to raise awareness of the dangers of working in enclosed spaces. In fact, respondents recommended changing the phrase to "dangerous space" or even "fatal space" to hit the message home.

In addition, the survey revealed a wide-spread belief that a blame culture is deeply rooted within the shipping industry. Respondents felt that the majority of accident investigations stop at finding the "guilty party" and rarely go further to discover why the accident occurred or what were the reasons for the actions of those killed or injured.

The survey revealed a feeling that accident investigation results are inconsistent, indicating that the absence of a standard investigation format prevents a proper and thorough analysis of accidents and the ready identification of potential improvements.

In addition to outlining the problems, the survey asked recipients to identify potential solutions to avoid further deaths. Seafarers responding called for clearer identification of hazardous spaces, suggesting access should be restricted by senior management onboard or ashore.

A need was identified for additional training to address lack of awareness and instill safe practices, while some seafarers said they would prefer to only access enclosed spaces while using safety equipment such as Emergency Escape Breathing Devices or Self Contained Breathing Apparatus. Some respondents believed that technology should be used to help with limiting the requirement for human access in enclosed spaces.

Focusing on vessel design, recipients advised that future newbuildings should avoid areas of enclosed space or restrict them to a minimum. In addition, any enclosed spaces should include provisions for adequate ventilation (whole space), adequate fixed gas detection systems and accessibility for humans in order to perform search and rescue operations.

Announcing the results of the survey, which was conducted at the end of 2018, InterManager secretary general Captain Kuba Szymanski said: "It is clear that much still needs to be done to address the issues of working in enclosed spaces and to eradicate the risk to life. No-one should die while carrying out their daily work.

"Seafarers seem to believe that this unsafe environment is created by designers and enforced by manuals and procedures, and therefore cannot be disputed and has to be followed — even if it results in death," he said.

Many seafarers responding to the InterManager survey expressed dismay at the situation. Szymanski commented: "It is rather sad to see so many seafarers losing hope that their situation will ever improve. As a result, the suggestions from those individuals do not stretch beyond improving training and procedures."

Encouraging ship managers to take a lead on safety, he added: "When I examined the results of the survey, I noticed that the most positive responses came from companies where senior managers took a leading role on safety matters, where they engaged themselves and led from the front. I would especially like to thank those individuals because it is them who are creating the company safety culture."

Pledging further action, he concluded: "InterManager thanks all those who responded to our survey and promises to do all we can to raise awareness of these issues at the highest level."

Meanwhile, the United States Coast Guard (USCG) recently issued Marine Safety Alert 04-19, "Confined Spaces: Silent & Invisible Killers". The risks associated with enclosed space entries are illustrated by a recent casualty where three persons were asphyxiated while working onboard a laid-up Mobile Offshore Drilling Unit. Once again, two additional persons were killed when trying to rescue a fellow crewmember because they entered the space without wearing personal protective equipment and self-contained breathing apparatuses.

Although it may be mandatory to carry out enclosed space entry drills on board, it is also important to ensure that the drills are realistic, according to the USCG. Those involved in a drill must understand that its purpose is to prevent accidents and not simply to tick the box to comply with regulatory requirements. According to the USCG, several studies have shown that humans often miss the obvious signs of a dangerous situation while under stress and because their focus is upon another effort or action that needs to be accomplished. In fact, more than 50% of the fatalities in enclosed spaces may have occurred during attempts to rescue co-workers.

ADDING FUEL TO THE FIRE

Development of coal handling has become a contentious issue in many ports and US West Coast ones are no exception, with the matter becoming a topic for much political debate in recent months

In April, President Donald Trump signed an Executive Order dealing with policies relating to the export of coal resulting from action taken in California, Washington and Oregon to stop inter-state or exports of coal through West Coast ports. The order is seeking to address permit and policy obstacles preventing the export of coal and other energy resources.

State or local government action has led to delays in new port developments or upgrades and Trump's executive order is one of the latest attempts to deal with the issue.

The order requests a report on the economic impact moves to block coal movements and exports through the ports, most particularly as they relate to Section 401 certification process under the US Clean Water Act.

Senators from several western states are co-sponsoring legislation to address certification under the Clean Water Act (CWA). For its part, Utah, a land-locked state with an active coal mining industry, is supporting public-private partnerships to open new coal ports and transportation infrastructure.

One port facility affected is the Millennium Bulk Terminal in Longview, Washington. Governor Jay Inslee has declined to certify the terminal project, which is a prerequisite for the issue of a 404 permit by the US Army Corps of Engineers. Under the CWA, the state in which the discharge originates must certify that the discharge complies with state water quality standards. In the case of the Millennium Bulk Terminal, denial of certification appears to be due to the Governor's anti-coal stance.

The certification process has allowed Washington to deny (or delay) interstate shipment of coal by rail for transfer to ocean bound ships.

Actions challenging Governor Inslee's denial of key permits for the coal terminal have been filed in both state and federal court by Lighthouse Resources. The National Mining Association and eight land-locked western states, including Utah, have joined the federal action in support of the terminal.

The Executive Order calls on the energy and transport secretaries to report on economic impacts resulting from decisions of Washington and other West Coast states to block coal terminal projects.

Grants from the Throughput Infrastructure Fund are given priority for "bulk commodities ocean terminal projects". Such projects include a proposed terminal in Oakland, California supported by coal-producing counties in Utah. The terminal is facing opposition by the City of Oakland and the City's attempt to cancel the contract for terminal facilities is currently in the courts.

Utah and other western coal-producing states and the coal industry say they welcome reform of the Section 401 water quality certification process That said, the State of Utah is not waiting on either of these reforms and is already proceeding to support public-private partnerships to develop and expand coal port facilities on the West Coast.

LANDSIDE FUNDS NEEDED

Meanwhile, the American Association of Port Authorities (AAPA) is calling on Congress to invest in critical landside and waterside connections to seaports, and implement a long-term funding solution for port maintenance.

"Landside and waterside investments are critical to building America's 21st-century seaport infrastructure. AAPA has highlighted $66bn in federal need over the next decade for port-related infrastructure. About half of that need, $33.8bn, is for waterside investments," says Kurt Nagle, AAPA's chief executive.

There are existing funding opportunities to address needs at seaports through the Harbor Maintenance Tax (HMT), which is paid by shippers to ensure ports are well maintained. According to Port of Los Angeles executive director Eugene Seroka, the HMT is a "unique and important revenue source that can keep our nation's ports and harbours operating at their maximum potential".

Ports requiring traditional dredging as well as donor ports (where a large proportion of the HMT revenues are collected) require the use of HMT funds. Approving a long-term funding solution for port maintenance that makes full use of the HMT more permanent and includes language to address tax fairness and cargo diversion problems is critical.

PORTS' BOOST TO ECONOMY

A recent report suggests that US ports' contribution to the economy has risen dramatically since the last edition was produced in 2014.

The report by consultants Martin Associates' suggests that between 2014 and 2018, the total number of jobs supported by cargo moving through the America's deep-draught ports increased by more than one-third from 23.1 million jobs to 30.8 million.

Also, the total economic value that US coastal ports provide in terms of revenue to businesses, personal income and economic output by exporters and importers rose 17% from $4.6tn to $5.4tn.

This accounted for nearly 26% of the nation's $20.5tn economy in 2018, which is the same 26% ratio as five years ago when the total GDP was $17.4tn. This is an indicator that the value of cargo activities at US ports remains a key factor in America's economic vitality.

AAPA's Kurt Nagle noted that, particularly with the economic contributions of America's seaports growing rapidly, there's a significant and urgent need for more federal investment in enhancing the connections with those ports.

"On both the land-side and water-side, AAPA's US member ports have identified a combined $66bn in needed investments over the next decade. These necessary federal channel, terminal, road, rail, bridge and tunnel improvements are crucial to enable our seaports to efficiently handle their expected cargo volumes, continue providing dramatic economic and jobs impacts, and enhance America's international competitiveness," he says.

GRAYS GROWTH

Grays Harbor Port is set to grow its rail-served industrial waterfront with acquisition of former WSDOT Pontoon Casting Basin after being the successful low bidder on Washington State Department of Transportation's surplus property auction recently.

"We are excited to add this strategic piece of property to the port's portfolio," says port commission president Jack Thompson. "There is no other piece of property on the harbour with rail access and industrial waterfront adjacent to the port's existing marine terminal operations.

"The port has long considered the pontoon site as a strategic piece of property to increase the community's international trade position.

By applying the port's business model of working with private investors to develop sites, we are confident the property will be back to generating economic activity for the community soon," he says.

The Port of Grays Harbor is acquiring WSDOT's former Pontoon Construction Site adjacent to its marine terminal complex to the west of the 55-acre rail-served, industrial waterfront property.

RECORD TONNAGE

The Port of Vancouver USA logged record-breaking cargo tonnage for the fifth year in a row last year, with a 8.1m tons total. This marks an 8.3% increase over last year's record of 7.5m tons.

"By continuing to invest in critical infrastructure and diversifying our portfolio of cargoes and customers, we were able to deliver another record year during a time of significant uncertainty in global trade," says port CEO Julianna Marler.

Total imports increased by 6.2%, up from 1.24m tons in 2017 to a record-breaking 1.32m tons in 2018. Steel commodities continue to be the largest imports at the Port of Vancouver by volume, and in 2018 the port moved 830,912 metric tons – an increase of 16.6%.

Overall exports increased by 8.7% in 2018, with strong gains in several commodities. Corn exports climbed an impressive 61.3% and copper concentrate increased by 40.7%, thanks to continued strong demand in Asia.

Fluctuations in currency and the global economy had an impact in 2018, but the port's continued tonnage growth contributed to an increase in operating revenue from $36m to $38m in 2018.

The port expects to see continued growth in steel, minerals, wind energy components and grain in 2019.

Meanwhile, Oregon exports remained stable in 2018 in part because of the strong relationships the state and its partners have built with countries over the years.

"In a trade-dependent state like ours, we rely on strong trading partnerships to help Oregon farmers feed the world and local businesses continue to grow," says Curtis Robinhold, executive director of the Port of Portland.

"With small- or medium-sized businesses making up nearly 90% of all exporters in Oregon, it is promising to see trade activity expand contributing to a more equitable and prosperous region for all."

Two-way traffic through the port has held up well in recent years – from exports of commercial trucks to Australia, to imports of wind turbine parts that help power the state.

The port ships goods via its four marine terminals and through an air international cargo partnership with Cathay Pacific.

KING COAL

While coal is being phased out for handling by many ports, it has had a dominant role to play this year in the increase in cargo volumes for major Indian players

If cargo volumes were down in the financial year ending in March 2019, the 2.9% growth rate was in part due to volumes of coking coal passing through the top Indian ports.

India's 12 major ports achieved a 2.9% increase in cargo volumes, with 699m tonnes going through port facilities. This compared to 679m tonnes in the 2017 financial year when the growth rate was 4.77%.

The increase in Indian major port throughput was mainly a reflection of higher volumes of coal, fertilisers and containers. Coking coal volumes handled by the 12 top ports increased by 14.25 %, to 57.50m tonnes during 2018-19, while thermal coal volumes were up by around 9%.

Kandla port had the highest traffic volume, at 115.40m tonnes during 2018-19, followed by Paradip (109.27m tonnes), JNPT (70.7m tonnes), Visakhapatnam (65.3m tonnes), Kolkata with Haldia (63.71m tonnes) and Mumbai (60.58m tonnes).

Last year, India's major ports handled about 60% of the country's total cargo traffic. The share of major ports in total Indian seaborne traffic was 55% in 2014-15 and 58% in 2017-18.

Coal throughput has been creating new opportunities and Norden recently signed a 10-year Panamax Contract of Affreightment with Indian utility firm Sembcorp Energy India, covering transport of steam coal in Panamax shipments totalling 12m tonnes between 1 April, 2019 and 31 March 2029.

As Norden has emphasised, demand for energy in India is on the rise in line with the country's economic expansion. Sembcorp Energy India is a leading independent power producer in India, which owns and operates two key coal-fired power plants near the port of Krishnapatnam on the Indian east coast.

As Norden CEO Jan Rindbo comments: "This contract not only allows us to show our commitment to growing our presence in India, but also enables us to position vessels across the load and discharge port regions, where they can be deployed to fulfil other contracts."

The contract covers transport from various load ports in Indonesia and South Africa to the discharge port of Krishnapatnam. The voyages will be carried out on both Norden owned and chartered vessels.

PRIVATE INITIATIVES

One of the major themes for Indian ports in recent times has been how privately owned facilities are performing vis a vis publicly-owned ones. There has also been considerable interest in increasing the role of technology to improve performance as well as trying to cut back on India's dependence on foreign institutions for investment.

Ongoing projects, of course, include the massive Sagarmala programme to improve inland infrastructure including waterways in order to take the pressure off the road system linking to port facilities.

One private player who has been particularly upbeat about prospects for port development is Adani. Adani Ports and Special Economic Zone is India's largest private port operator and runs nine different ports along

India's east and west coast. Cargo throughput of more than 200m tonnes was reported in March 2019, a milestone for the company.

"Our projections were to reach this milestone by 2020, but we could achieve it ahead of schedule courtesy of the tech-driven operational efficiency and enhanced asset utilisationy," says Karan Adani, chief executive at APSEZ. "Robust capacity addition at our leading ports such as Dhamra and Mundra as well as deepening presence closer the hinterland with new facilities such as Ennore and Kattupalli played a critical role in this journey."

He says that focus on adding value as an integrated logistics player and coastal shipping of coal further bolstered the process.

The company also attributes its success to the proximity and rail/road connectivity to the vast and rich north-western hinterland as well as state-of-the-art modern port infrastructure and equipment.

Adani is now aiming to double growth up to 400m tonnes by 2025, but according to its chief executive, "The focus for the immediate future is to reduce the turnaround time, drive up volumes without adding resources and increase in-transit visibility utilisation by eliminating unproductive trips among other benefits," says Adani.

BERTH EXPANSION

Deendayal Port in Kandla has also been looking to increase capacity, with the completion of two new multi-purpose berths to enable handling of larger cargo volumes.

At the official opening ceremony, shipping minister Shri Nitin Gadkari said the two shipping berths at Kandla will increase the port's capacity by over 115 lakh tonnes.

The two multi-purpose berths will be able to take vessels up to 75,000dwt. Each berth has a draught of 13m. It is hoped that handling bigger ships and larger volumes of cargo will result in direct and indirect employment opportunities and economic prosperity in the region.

TRAINING PROGRAMMES

Other projects currently underway in India include the Centre for Inland and Coastal Maritime Technology (CICMT) being setup at IIT Kharagpur, as part of the Sagarmala programme. The centre will be a hub for the latest technology tools for the maritime sector and reduce India's dependence on foreign institutions.

It is hoped it will also reduce the cost of research and result in cost and time savings for work in the port and maritime sector.

CICMT is being fully funded under the Sagarmala project to address the long-felt need for applied research and development for the inland waterways sector. At the moment, there is no testing and experimentation facility available in the country for inland and coastal vessels for which the shipbuilders have to approach various European countries.

The centre will tackle issues such as ship design for coastal and inland waterways, shipbuilding technology and structural design, transport systems and logistics, cryogenic cargo handling, green and renewable energy harvesting from coastal and inland waters and automation and artificial intelligence for maritime operations.

The cost of the project is Rs69.20 cr. The funding for CICMT is for five years only and once the facility is functional, the plan is for revenues generated from end users to make it sustainable.

Multi Skill Development Centres (MSDC) in maritime logistics are also being set up at JNPT port in Mumbai, to provide skill development in maritime logistics and placements for more than 1,050 students per year in the port and maritime sector.

The key training areas at the centre are warehouse management, consignment and tracking, inventory management, EXIM trade documentation and other related courses in the maritime logistics domain.

The physical infrastructure has been provided by JNPT and government planning authority CIDCO and the centre will be managed and operated by AllCargo Logistics.

The training programme is likely to be taken up at ports such as Chennai, Cochin and Vishakhapatnam in the next phase.

GOVERNMENT GUIDELINES

Meanwhile, market players have been accessing the possible impact of locally built ships being given priority when it comes to chartering, under new guidelines released by the Shipping Ministry.

In a big step to promote the Made in India initiative and incentivise ship-building activity in the country, the Ministry of Shipping has revised its guidelines for ship chartering by providing right of first refusal to ships built in India. In future, whenever a tendering process is undertaken to charter a vessel, a bidder offering a ship built in India will be given the opportunity to match the quote. The ministry hopes that giving priority to locally built vessels will raise demand, while providing them with additional market access and business support.

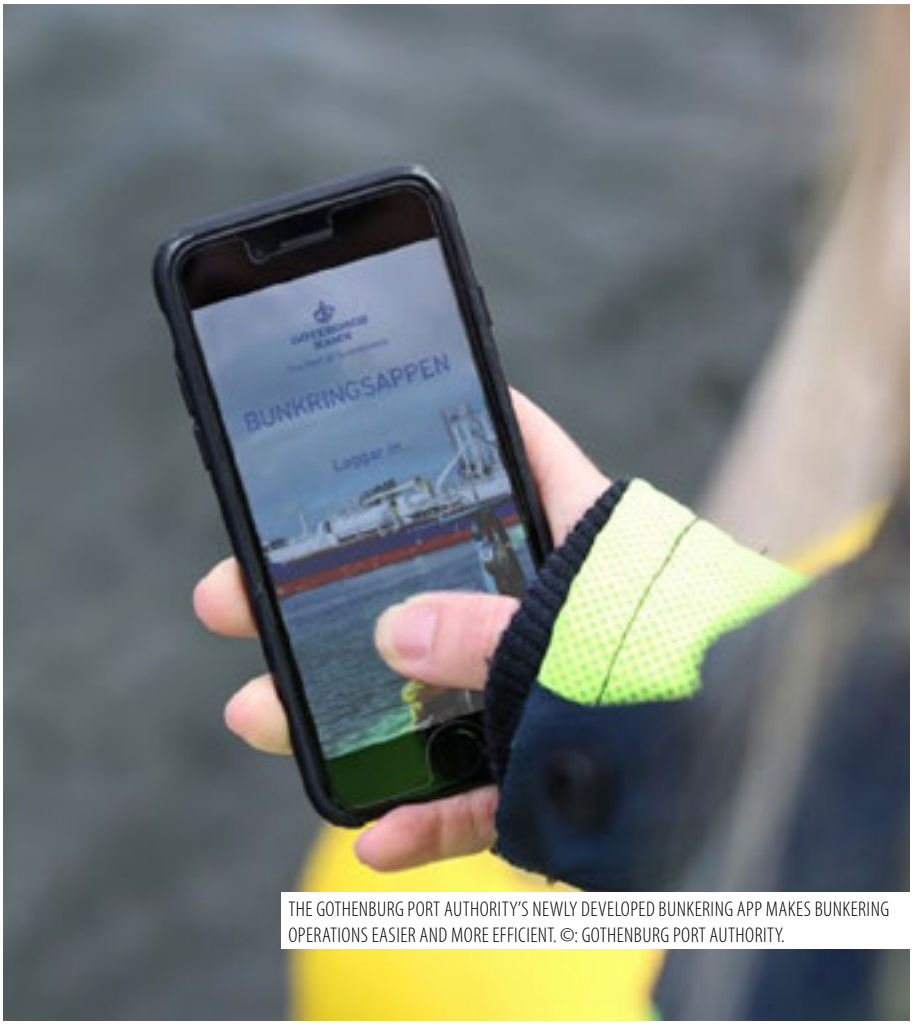
The review is also in line with the need to give a long-term strategic boost to the domestic shipbuilding industry, encourage the local shipping industry with the aim of obtaining a strong working relationship between the two segments going forward. The right of first refusal for Indian tonnage will be based on strict eligibility conditions and rules and would be exercised only in case the vessel being offered for charter by the lowest bidder has been built outside India. For any bidder to exercise the right of first refusal the bid should be within the margin of purchase preference, which will be 20% of the lowest bidder offer.

The Indian government has also recently announced plans to develop two Smart industrial port cities – one on the east coast at Paradip and another on the west coast at Deen Dayal Port, Kandla. The aim is to promote port-led industrial development by providing necessary infrastructure and allied services at one place for export-import trade

Development activities will include establishing a multimodal logistics park, as well as developing road networks.

GOING GREENER

Scandinavian countries have always been at the forefront when it comes to innovative solutions to environmental challenges and health and safety issues – with many of the latest innovations on display at NorShipping in June



THE GOTHENBURG PORT AUTHORITY'S NEWLY DEVELOPED BUNKERING APP MAKES BUNKERING OPERATIONS EASIER AND MORE EFFICIENT. ©: GOTHENBURG PORT AUTHORITY.

Gothenburg Port Authority has launched a digital solution designed to make bunkering at the Energy Port easier and more efficient. The new bunkering app is one of the first in the world to offer this range of functionality.

The Energy Port is the largest open access energy port in the Nordic region, handling over 2,500 calls and more than 23 million tonnes of energy products each year.

The app is available to all bunkering operators at the energy port. Instead of reporting manually via email and phone, they submit advance bunkering notification using the app. The app also shows available collection points for loading marine fuel on to bunker vessels.

The app also compiles bunkering statistics, facilitating the work of the Swedish Maritime Administration Vessel Traffic Service (VTS) and other organisations at the port. The idea behind the app is to make it simpler for bunker operators to plan and carry out their work effectively.

The app is also of benefit to the port's security co-ordinators, who save valuable time by no longer needing to act as intermediaries between the different parties. As the bunker

operators administer quay bookings independently, all that is required is process verification.

"We are confident that using the app will help boost efficiency and maximise the use of our bunker quays," says Dan-Erik Andersson, port head of operations. "But we would like to point out that it is not our intention to use the app to replace daily contact with our customers, which will continue to be an important part of our relationship."

BUNKER BOOST

Inter Terminals is also taking a proactive approach to meeting demand for low-sulphur fuel bunkering ahead of the new global limit in January.

The company's terminal at the Swedish port of Göteborg is to provide IMO 2020 compliant low-sulphur marine fuel blending and bunkering to new and existing customers. Inter Terminals believes that the port's strategic location on an active transit channel for large fuel oil flows and with a range of tank capacities and technical expertise means its terminal has a significant market advantage.

As well as having the capacity and technical skills for handling IMO 2020 compliant marine fuel at key storage locations, Inter Terminals has advanced fuel blending facilities at its Gothenburg Terminal.

In October last year, Inter Terminals announced the acquisition of NuStar Energy's European bulk liquid storage business. The addition of NuStar Europe increases the company's overall storage capacity and establishes Inter Terminals as the largest independent storage operator in the UK.

TESTING TIMES

Meanwhile, Hitachi High-Tech Analytical Science and Wilhelmsen Ships Service have hooked up to supply Hitachi High-Tech's industry-leading handheld XRF analysers to the maritime market, enabling vessel crews to accurately and efficiently test the sulphur content of their fuel, on the spot.

With the sulphur cap set to come into force next year and discussions on enforcement strategies and potential penalties for non-compliance gathering pace, the ability to perform lab-quality testing in seconds will soon become an operational necessity for crews.

Jonas Östlund, product marketing manager at Wilhelmsen Ships Service, says: "Partnering with Hitachi High-Tech Analytical Science, one of the leading fuel testing specialists, enables us to provide our customers with what we believe will become an absolutely essential tool ahead of IMO 2020. Crews will be able to eliminate the risk of accidental non-compliance. As vessels approach Emission Control Areas, with a lower 0.1%, permissible sulphur content limit, the engine room can immediately and accurately test the sulphur content of the fuel flowing to the engines after changeover and ensure it is compliant".

In addition to mitigating the risks of non-compliance during changeovers, fast, reliable on-board testing equipment lessens the reliance on the traditional Bunker Delivery Note, empowering crews to check the sulphur content of fuel during bunkering, rather than potentially having to deal with potential fuel specification issues after the fact.

Östlund adds: "No hassle testing, onboard and on demand, Hitachi High-Tech's XRF analysers, along with their expertise and technical support, will make navigating the new fuel sulphur regulations, while not quite plain sailing, far less of a burden".

Vito Angona, Global Sales Director, Hitachi High-Tech Analytical Science says: "Our partnership with Wilhelmsen offers customers the best of both worlds — our 45 years of expertise in fuels analysis and Wilhelmsen's experience in the shipping services market. We offer a turnkey solution to the market, everything you need for sulphur analysis in one place by one supplier."

Wilhelmsen will be offering the X-MET8000 handheld XRF analyser from Hitachi High-Tech, which complies with ASTM D4294, ISO8754 and IP336 sulphur test methods. Robust enough to be used in a scrapyard, it comes with an embedded GPS to pinpoint exactly where analysis is performed.

With no clear guidance for member states from the IMO as yet, recommended test methods for fuel compliance, various options are under consideration by PSCs, including drone technology to assess smoke plumes and sniffer units in port to detect sulphur emissions.

However, with cost and weather issues affecting such solutions, it is likely that mobile equipment, such as the X-MET8000, which PSC officers can use to quickly pass or fail vessels' fuel, will become the favoured means of testing compliance to the new regulations.

DRIVER FRIENDLY

Finland-based Rocla has received the prestigious red dot design award with the new electric counterbalance truck, Cat® EP14-20A(C)N(T) 48V.

The forklift adapts to operator's movements in a natural way – take off, driving and load handling and the counterbalanced truck has revolutionary 360° steering, which makes turning extremely agile.

It allows the truck to be turned in the opposite direction (180°) without stopping, which speeds up work considerably and keeps the load stable in a swift turn without swinging sideways.

The new 48V Cat counterbalance forklift range features four-wheel steering with dual-drive, which makes the truck really agile.

SPACE SAVER

ScanReach, meanwhile, will be visiting NorShipping to give visitors a taste of its new technology to reduce the dangers of entering enclosed spaces.

In:Range is a game-changing low-power, IoT microsensor system that transmits sensor-based data through steel, providing a robust on-board emergency response system, tracking the condition and whereabouts of all persons on board in real time.

In addition to individuals, the ScanReach technology — based on a combination of frequency control, sophisticated algorithms and protocols — can monitor compartments and hard-to-access void spaces on a ship or offshore asset.

And, as a key enabler for smart shipping, it can also monitor and wirelessly transmit real-time ship operating data (including data from IoT-enabled equipment) to a central control unit on the bridge or special control room.

In terms of practical applications for safety, crew members would have individual, wearable personnel tags monitored by a fully redundant meshed network of microsensors. In the event of an emergency on board a ship or offshore asset, their location and condition would become immediately evident, with any absences at muster stations rapidly noted and addressed. Seafarers, contractors, offshore workers, vessel passengers and all other "tagged" individuals would be visible in any situation, in any conditions at any time, regardless of the incident.

After almost five years and well over 30,000 hours of research and testing Eide Nor-Shipping has been chosen for the official launch pad for the platform.

FOSSIL FREE

Copenhagen Malmö Port (CMP) handled its first timber load in Swede Harbour in more than 12 years earlier this year.

"The unloading process was efficient and considerably quicker than what we had initially planned for, "says Gustav Brising, manager of the dry bulk terminal at CMP in Malmö. "This was, of course, positive both for the customer and us. We hope to handle wood fuel/timber more regularly from here on."

After unloading, the timber was sent to E.ON's heating plant, neighbour to the bulk harbour, where it is used as fuel in district heating production. Unlike natural gas, timber/woodchip is a renewable fuel source and thereby a better alternative for the environment.

CMP is increasingly investing in fossil-free solutions for both the liquid and dry bulk operations. "Our goal is to offer customers completely fossil-free handling, from us loading the freight to the ship leaving the port. We are noting when we make purchases or investments that it is often possible to find less environmentally detrimental alternatives – so why not choose them?" says Emil Nordström, head of liquid and dry bulk at CMP.

The most recent example is biogas cars that have been purchased for the liquid and dry bulk terminals in Malmö and the liquid bulk terminal in Copenhagen. In addition, the cranes recently installed in the dry bulk terminal in Malmö use electric hybrid technology, which reduces the environmental impact.

The plan is also to replace the fuel in machinery with HVO100 – a renewable, fossil-free diesel fuel that substantially reduces emissions of carbon dioxide compared with fossil diesel.

COPENHAGEN MALMÖ PORT

PORT PROGRESS

African ports have been attracting considerable investment in recent years, as companies seek to build their presence on the continent and the ports seek to promote themselves as transport hubs for particular types of cargo

NORDEN HAS OPENED ITS FIRST OFFICE IN AFRICA

As African ports enjoy something of a boost to their fortunes, one company that is bullish about prospects is Norden, which has recently opened its first office on the continent, in Abdijan, West Africa. "The opening of an office in West Africa undoubtedly makes sound business sense for Norden and is in line with our growth plans," says CEO Jan Rindbo. "Operating with a long-term approach also allows us to help further develop the region, which is in line with our corporate social responsibility focus of building a resilient infrastructure."

While the investment is a long-term move, in the short term, it means Norden is able to increase proximity to customers in the region. The company's focus of becoming increasingly asset-light to better tackle the fluctuating global shipping markets means it aims to move even closer to existing customers and grow new relations, the company says.

"Having a global reach paired with a local presence is key to how Norden operates," says Christian Vinther Christensen, head of dry operations. "We have, for some time, sought to expand our presence in Africa, a region in which we see significant infrastructure potential, increasing proximity to new and current

customers, and enabling us to offer increasingly customised freight solutions to African clients. This is undoubtedly a sound business investment."

Abidjan is a natural location for the company's new office. "Norden has a sound business platform from which to further build on in West Africa," says Adam Nielsen, head of industrial bulk.

"With the increased stability in the region generating stable growth and the significant population growth predictions for the region, we believe this is an area of particular interest. Having a local presence will support growth on both inbound and outbound activities and bring us closer to developing potential industrial bulk projects in line with our strategy."

"A local presence will directly engage the relevant players to optimise Norden's share of the market," says port captain Samuel Quansah.

Another of the company's West African port captains, Kingsley Wosu, agrees. "The opening of an office in the West African region is a welcome development, supporting the growth in countries such as Ghana, Ivory Coast, Togo, Benin Republic, Cameroon and Nigeria. Norden continues to play a major role in the import and export of commodities including clinker, gypsum, slag, wheat, fertilisers, bauxite, manganese, steel, coal and petroleum products, and has significant potential in the local market going forward."

CARGO CONQUEST

If containerised cargo tends to dominate at the port of Durban in South Africa, there was good news for other cargo segments despite tough trading conditions in the past year.

Total cargo throughput for Durban was 83.1m tons, up from 78.1m tons of 2017 , a rise of 6.47%.

Nationally, the number of ship calls in South African ports declined to 9,202 last year, down from 9,821 in 2017, but part of the fall was accounted for by the larger size vessels servicing the ports in the past year.

At Richards Bay, port volumes increased to 103.55m tons, up from 99.984m tons the previous year – despite the volume of coal being exported through Richards Bay Coal Terminal last year having been three million tons lower than in 2017, at 73.47m tons. The port handled just over 30m tons of cargo over and above coal exported through RBCT.

Three million tons was breakbulk cargo destined for export. The balance was in bulk cargo of various commodities including liquid bulk, which made up just on nine million tons. The number of trains delivering the coal averaged 26 a day, down by one a day in 2017, with each train consisting of 200 wagons loaded to a total of 20,800 tons and hauled along a 580km route from Mpumalanga province to the port along a double-track electrified line.

NGQURA DEVELOPMENT

Oiltanking Grindrod Calulo (OTGC) and Transnet National Ports Authority (TNPA) broke ground at the site of the Port of Ngqura's future liquid bulk tank farm in February. This comes ahead of the planned decommissioning and rehabilitation of the existing liquid bulk facilities at Port Elizabeth, which will pave the way for Ngqura's establishment as a new petroleum trading hub for Southern Africa.

The new tank farm is expected to provide storage and marine infrastructure to support the overall petroleum demand projections for South Africa.

Speaking at the inauguration, Mkhuseli Faku, chairman of OTGC, said: "Having been awarded the concession to develop a liquid bulk storage and handling facility in the Port of Ngqura, OTGC is now embarking on the first phase of construction. The terminal will be built to the highest international safety standards and provide exceptional service to its customers. OTGC looks forward to becoming a contributing member of the Nelson Mandela Bay community and expects to continue on its growth path in the years ahead."

Port manager of Ngqura, Tandi Lebakeng added: "As the port landlord, TNPA is providing port infrastructure for the liquid bulk terminal to commence operations at the end of 2020. The new tank farm will develop the Port of Ngqura's liquid bulk capacity for commodities such as petroleum, diesel, jet fuel, illuminated paraffin and liquid petroleum gas.

Once operational, the terminal will facilitate substantially increased throughputs over present volumes handled at Port Elizabeth due to Ngqura's deeper draught which allows it to handle much larger vessels. The allocated 20 hectare site also provides ample space for future expansion of the terminal," she said.

Liquid bulk products will be transported to the Port of Ngqura via ship and piped to the tank farm prior to local supply or re-export. The new modern facility will service

the oil majors, new entrants into the South African oil industry as well as international traders - all supporting the local shipping industry.

TNPA has already completed Phase 1 of the infrastructure required to service the site, including the detailed design of the new port entrance plaza and the new main access road, as well as the pipeline that will link the new tank farm and the port.

Phase 2 commenced in November last year and includes the landside development forming the link between the tank farm and the berth. The port authority will provide infrastructure for the new OTGC tank farm by equipping Berth B100 to function as a liquid bulk berth. It will also construct a new access road from the tank farm to the berth. TNPA will provide all the associated services and construct a new port entrance on the eastern side of the Couga River.

TNPA reached agreement in late 2016 with OTGC to plan, fund, construct, own, maintain and operate the new facility after a tender process. OTGC's design caters for 200,000cbm of bulk storage and final total capacity of 790,000cbm. The planned commissioning of Phase 1 is at the end of 2020. Phase 1 will cater for dedicated jetty pipelines, bulk storage for up to 200,000 cbm, road loading with a Vapour Recovery Unit, state-of-the-art fire-fighting facilities and site drainage facilities. Provision has been made for the receipt, storage and distribution of LPG. The facility will be able to accommodate vessel sizes of up to 100,000dwt , and road loading and inter-tank transfer/re-circulation facilities, offices and an independent laboratory are all included in the plan.

NEW LIFE FOR KISUMU

Plans are underway for the construction of a new port in Kisumu to allow bigger vessels to dock at the once vibrant Kenyan facility.

African Union High Representative for Infrastructure Development Raila Amolo Odinga announced the port plan recently at the Kisumu Pier while launching the dredging and removal of water hyacinth from Lake Victoria.

The former prime minister said plans are underway for Kenya Railways Corporation and the Kenya Ports Authority (KPA) to rehabilitate the old railways from Nakuru to Kisumu and refurbish the old port.

"The Standard Gauge Railway (SGR) has now reached Naivasha. It will bring cargo up to the port of Kisumu and from there it will be loaded on the ship and transported to Uganda. However, that is just a temporary measure. SGR is coming to Kisumu, too, with work due to commence soon," he said.

Kenya Pipeline had already constructed a jetty on the other side of the Kisumu Pier, which means oil can be shipped from Kisumu to Uganda – a more cost-effective method than by road.

Rehabilitation of the Port of Kisumu remains one of the key priority projects that would make the Trans-African Highway a practical route. Currently, Africa-to-Africa trade is less than 15%, compared with Europe-to-Europe and Asia-to-Asia trade standing at 70% and 56% respectively.

KPA managing director Daniel Manduku stressed the commitment to the rehabilitation of Mombasa Port as well as Kisumu Port. "We are here to launch the first phase of the rehabilitation project, which is specifically the removal of water hyacinth. After that, we shall start the actual construction work of the pier, extension of the quay side to 900m, a new office block, workshops and a slip way.

"This project is a priority for us," Manduku said.

TERMINAL TALES

FEMALE FORCE

Women in shipping was once again on the agenda at recruitment specialist Spinnaker's annual conference in London recently, with UK shipping minister Nusrat Ghani banging the drum about how the maritime industry must get its act together and employ more women, not to mention encourage them into the industry and sign up to the Women in Maritime initiative launched last year.

This has been a popular theme for the minister in recent times as it was on the agenda for her speech to the International Salvage Union in March, where there was an impressive array of women from the salvage side of the equation. Having said that, most seemed to be of the opinion that being a woman or not was irrelevant, it was more a question of knowing how to do the job.

Also on her agenda was the shortfall of cadets going into the industry and the importance of STEM (science, technology, engineering and mathematics) subjects for those wishing to enter the industry as it becomes increasing technically driven.

As it stands, it is hoped that going forward, those cadets encouraged into the industry will have jobs to go to at the end of their cadetship — as has often not proved to be the case in the past.

OVER THE SIDE

Jumping ship doesn't seem like a practice one associates with today's shipping environment, but West of England P&I Club has produced an interesting survey of absconding seafarers.

The club recently carried out an analysis of claims involving seafarers who had deserted their ship during the past decade — although it does stress that doesn't happen that often. While desertions were not restricted to any particular rank, it was more unusual for senior officers to leave a vessel, West of England's analysis found.

That said, catering staff, including cooks, and stewards, seemed to be more prone to absconding than other sections of the crew. If you can't stand the heat and all that...

In terms of nationality, Turkish, Cubans and Chinese seem to be more prone to going absent without leave and popular destinations for jumping ship include Canada, Australia and South Korea. The US is also popular, apparently, which seems to indicate that port restrictions may have loosened up since the days when foreign seafarers were hardly allowed off the ship in US ports.

ALWAYS READ THE SMALL PRINT

It may seem a no brainer to know the terms of your charterparty agreement, but if International Transport Intermediaries Club is reminding people to do so, companies are clearly getting it wrong.

It cites one case where a manager of a tanker thought the charterparty provided armed guards, with the charterer picking up the tab. The manager appointed the guards, but the charterer wouldn't pay the $170,000 for the voyage. Although the charterparty did include mention of armed guards, their deployment was not mandatory and charterer's liability was limited to $20,000 of the costs.

ITIC resolved the situation, but the message is not to forget to read the fine print — it may not be the way you remember it.

WHAT'S ON

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

4-6 JUNE/2019
PNEUMATIC CONVEYING OF BULK MATERIALS
CHATHAM
www2.gre.ac.uk/about/faculty/engsci/research/groups/wolfsoncentre/coupro/sc

12-13 JUNE 2019
ACI, EUROPEAN ENVIRONMENTAL PORTS CONFERENCE
ANTWERP
www.wplgroup.com/aci/event/environmental-ports-conference/

18-20 JUNE 2019
TOC EUROPE 2019
ROTTERDAM
www.tocevents-europe.com/en/Home.html

2-3 JULY 2019
POWDER HANDLING AND FLOW FOR ADDITIVE MANUFACTURING
WIDNES
www2.gre.ac.uk/about/faculty/engsci/research/groups/wolfsoncentre/coupro/sc

SEPTEMBER 2019
GLOBAL GRAIN SOUTH AMERICA
SAO PAULO
www.globalgrainevents.com/south-america/details.html

24-26 SEPTEMBER 2019
STORAGE AND DISCHARGE OF POWDERS AND BULK MATERIALS
CHATHAM
www2.gre.ac.uk/about/faculty/engsci/research/groups/wolfsoncentre/coupro/sc

2-3 OCTOBER 2019
SOLIDS
ROTTERDAM
www.easyfairs.com/solids-pumps-valves-2019/solids-rotterdam-2019/

8-9 OCTOBER 2019
BULK TERMINALS 2019
AMSTERDAM
www.bulkterminals.org/events.html

15-18 OCTOBER 2019
GREENPORT
OSLO
www.greenport.com/congress

15-16 OCTOBER 2019
AFRICA PORTS EVOLUTION
DURBAN
www.transportevolution.com/

22-24 OCTOBER 2019
OVERVIEW OF PARTICULATE HANDLING TECHNOLOGY
CHATHAM
www2.gre.ac.uk/about/faculty/engsci/research/groups/wolfsoncentre/coupro/sc

29-30 OCTOBER 2019
TOC AMERICAS
CARTAGENA
www.tocevents-americas.com/en/Home.html

03-04 NOVEMBER 2019
LMA, LIQUIFACTION OF BULK CARGOES
LONDON
maritime.knect365.com/liquefaction-bulk-cargoes/

05-08 NOVEMBER 2019
EUROPORT
ROTTERDAM
www.europort.nl/

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