BULK TERMINALS *international*

WINTER 2020/2021

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

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2021: A NEW BEGINNING

BY SANDRA SPEARES

Many will be heaving a sigh of relief now that 2020 is finally over and hoping that things will pick up in the coming year as countries begin to tackle the coronavirus through the use of vaccines. But the lessons learned in the past year must not be forgotten

The last year has proved an eye-opener in more ways than one — not least as far as bringing the plight of seafarers to the attention of those who rarely considered such issues in the pre-covid world. It is to be hoped that consumers will not forget the tremendous sacrifices made by key workers of all categories as things gradually begin to relax. The new normal should not mean forgetting the lessons learned. The description by one seafarer of a "living hell" aboard vessels during the pandemic is one that should not be forgotten.

Port disruptions and crew shortages have been two issues; another has been the introduction of new rules applying to the use of low sulphur fuels. The industry as a whole will have to continue to grapple with climate change and — hopefully — come up with some innovative solutions ahead of new deadlines for improvement in the coming decades.

Difficult financial conditions have also led ports — and the industry as a whole — to boost their efficiency. One way has been with the use of remote techniques, which has become increasingly important as businesses seek to stop transmission of the virus. While such innovations may come out of a response to the virus, they can also improve safety in an industry that has sometimes been cavalier about it in the past. The idea that one can receive advice from a virtual technician while inspecting equipment for a fault seems an excellent idea, as does the idea that drones can fulfil some of the more dangerous inspection tasks.

> The description by one seafarer of a 'living hell' aboard vessels during the pandemic is one that should not be forgotten

However, it is clear that everyone must continue to remain vigilant to ensure that we do not continue to repeat those mistakes that have cost seafarers and port operatives their lives on many occasions, for example in the safe handling of dangerous cargoes.

Virtual meetings have been a key point this past year, as many of the industry's most important events have had to go online. This has had the benefit of freeing up time for other tasks as people have not had to travel to events and can "cut to the chase" and organise their time more efficiently.

That said, everyone has missed the chance of actual, as opposed to virtual, attendance at events in our industry. While virtual communications are becoming increasingly effective, it is not quite the same as raising a glass with someone at an actual function.

We hope that given the changes taking place at the moment, we will be holding our next actual event in Riga this coming October and that as many as possible of you will be able to attend in person to discuss the developments of a challenging year.

In the meantime, I hope you enjoy the latest edition of *Bulk Terminals International* and look forward to seeing you in Riga.

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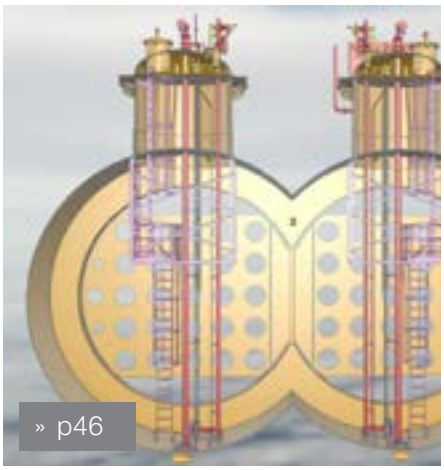
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KEEPING IN THE LOOP

SIMON GUTTERIDGE, CHIEF EXECUTIVE ABTO

ABTO has a busy programme of events planned for 2021, aimed at keeping members ahead of issues

Although we are in the middle of the third wave of covid-19, there is hope that the development and roll-out of vaccines will enable us all to return to a semblance of normality this year. Let us further hope the new variants are not resistant to the vaccines and do not lead to continued lockdowns and restrictions.

As imponderable, however, is how long the "collateral damage" will continue – the term BIMCO's chief shipping analyst Peter Sand uses to describe the Chinese restriction of Australian coal imports caused by their dispute over Beijing's handling of the pandemic. China, the largest buyer of coal in international markets, is increasingly sourcing from other countries such as Indonesia. BIMCO's data shows China imported roughly 1.4m tonnes of Australian coal in December 2020, down from 7.8m tonnes in January 2020, with Indonesian imports increasing by slightly more in the same period.

Although there are signs the dispute is slowly easing, it will take time for a return to normality. In the meantime, Australian shippers and terminal operations will continue to be hit if increased shipments to India, Vietnam and Korea do not compensate. A card in Australia's hand is the difficulty China will have replacing coking grade coal from elsewhere, which it needs to meet surging demand from steel mills.

If the dispute continues, a more serious long-term implication for bulk terminals and carriers is the increase in overland supply. At the moment, the quantities are not that big in the scheme of things, but if the supply becomes established at competitive rates, shipping and terminals will lose out. Already shipments from Mongolia were

up from 2m tonnes in January 2020 to 8m tonnes in September.

ABTO aims to keep you to in the picture with all these ongoing issues with a programme of events for 2021.

We are delighted to announce the dates for our postponed annual Bulk Terminals Conference in Riga, which will now take place from Tuesday 19-Thursday 21 October. The conference proper will be held on Wednesday 20 and Thursday 21 October at the Freeport of Riga Authority conference venue, with a pre-conference terminal visit for early arrivals on Tuesday 19 October.

Each year, the ABTO Bulk Terminals Conference presents a full programme focused on the concerns of operators, offering sound practical solutions for improving safety, streamlining operations and ensuring environmental protection – as well as a market analysis and development opportunities.

Autonomous operations and digitalisation have been raised as subjects of interest. Naturally, Bulk Terminals 2021 will also consider the impact of covid-19 on bulk terminals. Given the importance to Latvian and Baltic ports of transit cargoes, rail and transport connectivity will also be covered.

I am grateful to BRUKS Siwertell for having committed already to sponsoring the event. To discuss speaking and sponsorship opportunities at Bulk Terminals 2021 Riga, or to register an interest in attending please email *events@bulkterminals.org* or call +33 (0)3 21 47 72 19.

Keep an eye on the Events section of our website *bulkterminals.org* for developments.

New this year will be another online short course: Biomass Operations and Handling Technologies, from Monday 22-Friday 26 March at 1400-1700 hours each day UK time.

Held in collaboration with The Wolfson Centre for Bulk Solids Handling Technology, this new course has been designed to help delegates identify and resolve common problems when handling the various biomass materials.

It is aimed at the manufacturers and suppliers of biomass materials, at the users – particularly those responsible for maintenance and management on site – and at the manufacturers and installers of equipment used to transport and store the materials around the plant.

Our first event this year will be the popular Port and Terminal Operations for Bulk Cargoes short course, held again online from Monday 8-Thursday 11 March, starting at 1400 hours UK time. Also held in collaboration with The Wolfson Centre, the course is ideal for anyone with responsibility for the safe handling and storage of bulk cargoes. Delegates will gain an understanding of the reasons for the varied behaviour of powders and particulate materials as they travel across the seas or are stored and transported from ports.

Both the Biomass and Port and Terminal Operations short courses are designed to be interactive so delegates are given the chance to discuss real life issues and to determine future best practice. For full details and how to register, please see our Courses and Training section in the Events part of our website.

And keep an eye on our website for the other new courses we plan for 2012: Fire and Explosions; Port and Terminal Safety; Stevedore Training; Liquefaction; Environmental Compliance; and a Workshop Master Class in How to specify and Buy Bulk Solids Handling Equipment. If you are interested in joining any of these – or have ideas for other subjects you would like to see covered – please do not hesitate to contact me.

I remain grateful for the continued support of our partners The Wolfson Centre, ICHCA International and the Material Handling Engineers Association (MHEA), which has just announced its dates for BULKEX 2021, on Tuesday 12-Wednesday 13 October.

Enjoy our latest edition of *Bulk Terminals International*, keep in touch and stay safe

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WORLD NEWS ROUND-UP

As the pandemic continues, the welfare of seafarers remains a dominant issue. Meanwhile, the industry continues to grapple with the implementation of new rules, notably the use of low sulphur fuels

RightShip and Intercargo have recently announced the launch of an important new quality standard for the dry bulk sector, DryBMS. The standard will be governed by a new NGO to be established later this year and will support the improvement of safety in the dry bulk segment.

Both RightShip and Intercargo have strongly and consistently advocated the need for significant improvements to dry bulk safety standards. In August 2020, both organisations combined their expertise to create a single framework for the whole industry.

Supported by the International Chamber of Shipping (ICS) and BIMCO, DryBMS now exists as a simple set of best practices and key performance indicators and raises the bar on safety, environmental and operational excellence.

RightShip CEO Steen Lund says that he is confident that such a programme will be supported and adopted: "We are proud to launch DryBMS to the industry. The standard is a product of extensive collaboration with many stakeholders within the dry bulk sector.

"We believe that this ensures the programme will be supported and adopted across the industry as a whole. The rapid delivery of the initial consultation document means that we are a step closer to providing consistent, meaningful safety expectations for the dry bulk industry.

"Handing the standard over to a new and independent NGO will ensure the standard is protected and governed with the industry's best intentions at heart."

Dimitrios Fafalios, Chairman of Intercargo agrees: "This is an important step, not only for the industry, but for the sector as a whole. We are all collaborating in a scheme that is being developed by the industry for the industry, which will deliver a truly robust standard with the buy-in of those that the industry relies upon to implement and support it."

Interested parties are invited to sign up for the DryBMS newsletter to receive regular updates regarding the development of the NGO and the finalised standard.

The final draft version of the standard is now available to download on the DryBMS website, and the team will continue to review feedback sent to enquiries@drybms.org

SEAFARERS REMAIN IN CRISIS

Life during the pandemic has been described as a "living nightmare" by one seafarer in a recent report. Seafarers continue to face a bleak future in the face of the covid-19 pandemic, according to the latest "Seafarers Happiness Index" report, published by The Mission to Seafarers.

The survey, undertaken with the support of the Shipowners' Club and Wallem Group, reports on the experiences of seafarers between July and September 2020. This period saw some welcome action to address the dire situation facing the world's seafarers in the midst of covid-19, including the ongoing crew change crisis, but still fell short of the comprehensive response that is needed from the international shipping community in the face of the second wave of the pandemic.

Issues raised include a decline in optimism as seafarers faced the second wave of the pandemic and financial and crew change issues. Crew cohesion has been put under pressure, the report suggests.

In response to this latest survey, Andrew Wright, secretary general of The Mission to Seafarers, comments:

"Once again, the 'Seafarers Happiness Index' has revealed the immense human cost of the covid-19 pandemic among the men and women who serve at sea and upon whom we all depend. It is deeply worrying to learn of the impact on the bonds between crewmates and the damage to social cohesion onboard.

"All of us who care about our seafarers must act now and act faster to deliver the immediate support and relief that they need, along with a longer-term plan of action – one that meets the needs of those serving at sea and those stranded ashore.

"The Mission to Seafarers is doing all that we can through our global network of ship visitors and seafarer centres, including adapting our facilities to make

them 'covid-secure' and developing alternative solutions such as our online 'chat to a chaplain' service, but this crisis requires a global response from our industry leaders and national authorities."

Louise Hall, director – loss prevention at the Shipowners' Club, emphasised the need for the industry to embrace new ways of meeting the needs of seafarers: "This latest report highlights the heightened plight of seafarers both ashore and at home.

"Those on board are feeling increasingly concerned with the ongoing situation with many voicing that they feel physically and emotionally exhausted, whereas those at home are surrounded by the uncertainty of their future employment and financial woes.

"It is imperative that we work together as an industry to provide new services and tools to improve the health and wellbeing of seafarers during these most difficult times."

Frank Coles, outgoing chief executive of Wallem Group said: "The index is a measure of the incompetent leadership of world governments to recognise and support seafarers. We need to start listening to our seafarers and urge governments to open their borders to seafarers and confirm their key worker status as a matter of urgency."

To read the latest "Seafarers Happiness Index" report, visit: happyatsea.org

BPA LOOKS BEYOND BREXIT

The British Ports Association (BPA), which represents 86% of UK port freight activities around the UK, sees the UK's new trading relationship with the EU bedding in and its role in the mass roll-out of the coronavirus vaccine beginning. Therefore, a sustainable growth agenda and promoting the value of ports and their varied activities will be at the heart of the Association's work over the next 12 months.

According to BPA chief executive Richard Ballantyne: "Many ports are still dealing with the impacts of coronavirus, in terms of day-to-day port operations and also a revised business environment. The potential for further restrictions and national lockdowns are daunting indeed.

"However, despite the obvious changes for those operators handling EU freight, 2021 could see a bounce back from the various impacts that affected the UK and global economy last year.

"In the short term, keeping the industry resilient and ports open could mean getting essential workers at ports join the queue just behind health workers, the clinically vulnerable and the elderly, in terms of the roll-out of the covid-19 vaccine.

"Moving forward, ports can definitely be part of the solution as the country recovers. The government has been clear about aspirations for its 'levelling up' agenda, which will include a Freeports strategy, but we expect to see another stimulus as well.

"Freeports is just one tool and will only target a limited number of particular locations. We will be encouraging policymakers to look at other mechanisms that will benefit all regions in respect to infrastructure and the regulatory environment."

Prior to the pandemic, early last year the BPA was expecting sustainability and the energy transition to play a pivotal role across the UK ports sector. However, the impacts of coronavirus drew the focus of the government and industry's attention elsewhere. A much-mooted green recovery is now an attractive proposition for politicians, but what they actually might mean for ports is still open for some debate.

Commenting on the green recovery, Ballantyne says: "From air quality to their environmental footprint, ports are now looking into what they do to support the government's long-term net-zero targets. Indeed, changes to UK energy use and a move towards renewable energy generation is definitely something the sector is aligned to and supporting."

He adds that included in the BPA's sustainability work will be a renewed focus on modal shift, such as increased rail fright opportunities for certain ports, but also, particularly, coastal shipping, which has been neglected as a policy area by the government over the past 10 years.

With the UK's departure from the EU, there is also an opportunity to have a fresh look at freight support grants, which have been woeful in both uptake and allocation in terms of coastal shipping. The association will be looking at how, in certain circumstances, options to take goods off congested land routes and on to ships can help support the sustainability agenda. Shipping is, of course, the most environmentally efficient form of freight transport.

Adding to this, Ballantyne talks up what Brexit might mean in terms of the wider regulatory agenda: "Brexit needs to be much more than the new bureaucratic border controls on much of our trade that have taken up so much attention in the past four years. The UK ports and maritime sector are, of course, keen to see some tangible benefits, but this could mean swift action from the government.

"The new regulatory regime means that the UK can now design a policy framework that better enables ports of all type to flourish and grow. This is not about ripping up environmental rules or safety standards, but is about looking for ways to create a more responsive framework that enables ports to be agile in attracting new investment and to grow and support jobs and local communities.

"As well as speeding up planning rules, there will be opportunities to remove legislation such as the EU Port Services Regulation and also replace sources of infrastructure funding such as TEN-T and fisheries grants so that our regional transport and port infrastructure is competitive," Ballantyne concludes.

DUO LINK UP TO JOIN ICHCA

New York-based cargo inspection company National Cargo Bureau and Exis Technologies, a global leader in IT solutions for shipping dangerous goods by sea, have joined the International Cargo Handling Coordination Association (ICHCA) under a group corporate membership. Exis Technologies, which has been part of the NCB Group since April 2018, had previously been an individual member of ICHCA for over 10 years.

Exis Technologies and ICHCA have worked together on many

joint projects over the past decade, including, with sponsorship from the TT Club, the CTU pack e-learning courses for those involved in container packing job roles and IMDG Code e-learning courses for shore side staff handling and transporting dangerous goods by sea.

As part of the membership, Captain Eric Rounds, chief surveyor NCB, will join the ICHCA Technical Panel alongside Will Bartle, Compliance and Regulations Manager at Exis Technologies. The Panel provides technical advice and publications on a wide range of practical cargo handling issues and will allow NCB and Exis to be involved in the improvement of knowledge and best practice across the global cargo chain.

COALITION SEEKS AWARENESS

In response to repeated calls for industry collaboration at SHIPPINGInsight Fleet Optimization and Innovation conference and exhibition, its chief evolution officer, Carleen Lyden Walker, announced the formation of the Global Maritime Information Coalition (GMIC), which is designed to address the lack of unified messaging to the public about the maritime industry.

"The recent crew-change crisis has illuminated the maritime industry's low awareness in the public's consciousness," states Walker. "Despite the importance of the maritime industry to global society, seafarers were not deemed 'essential workers' alongside firemen, policemen, medical personnel,and other worthy groups.

"Much of this is due to the lack of understanding how dependent the world's community is on shipping, providing it with food, energy, medical supplies and more."

The objective of the GMIC is to develop a unified platform for the global maritime community to raise the awareness of the global maritime industry and its value among the public, improve society's image of the sector, provide unified messaging about the industry, be a resource for governments to learn about the industry, act as a portal for groups to communicate with the maritime industry, and inform students and the public about career opportunities available in the industry.

The next steps in the formation of the coalition is to recruit global, national and regional industry organisations, government agencies, corporations and NGOs to join the GMIC and establish a work programme for the organisation.

It is anticipated there will be four major areas of engagement: value proposition of the industry, its commitment to decreasing maritime's environmental impact, industry's technological advances, and maritime as a career opportunity.

For more information, contact Carleen Lyden Walker, c.walker@shippinginsight.com.

MACHINE, REPAIR AND 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 30m³ 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.

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GRAB AND GO

Versatility and adaptability are key when selecting grabs for use in port facilities and the right grab for the job can significantly affect the efficiency of loading operations at a time when keeping costs down is of utmost importance

Coming up with new ways of keeping costs down is a key element for grab manufacturers. As one such company, Nemag, points out, these days the process will involve the use of the very latest software technology, such as 3D CAD, Multi Body Dynamics (MBD), Discrete Elements Methods (DEM) and Finite Elements Methods (FEM).

Remote operation is also a key consideration in the current challenging environment and several companies have come up with innovative systems. One example is Peiner SMAG Lifting Technologies' radio-controlled single rope grab. Being able to control the loading process is of vital importance, not least for safety reasons.

In the case of the Peiner grab, whether actuated by remote control or pull cable, the opening process can be interrupted and continued several times in order to ensure bulk material is unloaded in a controlled manner and with reduced dust emission.

The company says that the grab offers easy handling without any special accessories being necessary.

No additional staffing is needed as the grab can be opened by remote control. High-power rechargeable batteries with high-charging capacity ensure dependable, continuous use, while an optional dust guard ensures environmental protection when handling fine-grained bulk goods.

Various lip designs are available to suit the material or cargo to be handled.

Peiner's range of products includes bulk cargo and container handling as well as special hoists. Its key areas of action are ports, ships, manufacturers of cranes and construction machinery, steel mills, waste-to-energy plants and recycling and scrap handling industries.

Another company going down the remote route is Columbus McKinnon, a developer of motion control products for material handling. It recently announced that it was integrating Magnetek radio remote control technology into the STAHL CraneSystems portfolio. New Flex Wave radio remote controls offer improved functions for STAHL CraneSystems hoist technology, the company says.

"The integration of industry-leading technology from Magnetek with the reliable performance and high quality of the STAHL CraneSystems product range offers customers better options for all lifting and positioning applications," says Ben Stoller, global product manager for controls.

"The very durable and robust Flex Wave radio remote controls are ideal for material handling, bridge crane and industrial applications and offer innovative controls in a reliable ergonomic design."

Compared to hardwired controls, radio remote control offers more mobility with additional safety functions, says Stoller. Operators are not tied to radio equipment and can therefore stay away from potentially hazardous situations.

This not only helps to reduce the risk of accidents, but also lowers the wear and tear of materials.

"The robust, very durable and versatile Flex Wave radio remote controls from Magnetek are ideal for all material handling applications with overhead cranes.

"Crane manufacturing partners and system manufacturers all over the world benefit from the combined technologies of the STAHL CraneSystems and Magnetek brands," explains Marc Döttling, STAHL CraneSystems product manager.

Another company offering radio controlled options comes from grab manufacturer Güven, which says these are particularly popular for new-generation bulkers "in order to avoid the cable drum system and grab stabiliser on the crane jib, without any additional electric supply and consumption of fuel by generators".

An advantage of the system, Güven says, is that it is more efficient, uses less spare parts and improves speed and performance.

SMART SOLUTIONS

Adaptability is key when loading and unloading and revolutionary new "smart" grabs put adaptability at the forefront.

Stemm, for example, has developed a new range of state-of-the-art grabs, that during each handling process automatically adapt themselves to product-specific characteristics with no direct manual intervention from the operator being required.

Should the product be heavy or compacted, of big granulation or sometimes mixed with light products or plastic packages, the grab works at a lower or higher speed, regulating the penetration force required and with the resistance of the product, it changes the speed and regulates the pressure according to its material characteristics.

As Stemm explains, port cranes are equipped with various grabs for handling various types of bulk of different densities and granulometries. As the most suitable equipment for each bulk is not always available, equipment with grabs that cover the maximum and higher range of material densities is needed.

The grab will adapt manoeuvrability according to the amount of bulk product which the hold contains which will vary according to how much has already been handled, thus offering time savings.

Stemm also offers a Grab Connect tool, which allows users to monitor and control the grab remotely as well as adjust it in real time. This tool helps users to optimise preventive maintenance policy and also make production more efficient.

It is also possible to visualise in real time the operating pressure, the oil temperature and level, the opening and closing commands and times, the number of manoeuvres and the hours of work among other parameters.

In addition, users will be notified, by email and text message, each time an event occurs and any incidence where stoppage or anomaly is detected, or the change of different components and spares parts deemed necessary.

TIGHTENING THE NET

Ensuring safety when moving goods is also essential and complementary equipment is available to ensure that loading or unloading can take place as safely as possible.

The Conquip Safety Restraint Net is a strong net that attaches around hooks on the crane forks, the block grab and other lifting equipment, as a compulsory safeguard against loose material falling, especially when in transit.

It is suitable as a crane forks net or as a block grab net for safety restraint. However, the net must be pulled tight to the load in order to maximise its usefulness, the company stresses.

BULK TERMINALS 2021

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GRABBING YOUR ATTENTION

COMPANY NEWS

Considered one of the world's leading grab manufacturers, NEMAG places a strong focus on innovation and large-scale bulk handling. The company provides a full range of grabs and various types of quick-release links and rope pear sockets, enabling a safe and fast changeover of grabs on cranes.

At Nemag, we believe in the power of innovation to help you increase your bulk handling efficiency and decrease your operational costs. In close co-operation with leading bulk terminal operators, crane manufacturers, technical universities and other stakeholders in the industry, Nemag continues to develop new products for the dry bulk industry. Improving unloading efficiency and striving for the lowest handling costs per ton material transferred are key objectives.

MAKING THE RIGHT CHOICE

There are several grab types available, each with specific characteristics and benefits. When choosing a grab, it is important to be aware of the fact that a grab is of fundamental importance on overall performance.

The key challenge is to find the best grab solution and unloading procedure that leads to the highest average unloading performance. In addition, the impact of the grab type on auxiliary equipment costs such as trimming equipment and staff must be considered, as well as maintenance costs.

When it comes to the type of materials it will handle, the choice of grab is more than looking at the bulk material, payload and deadweight. The combination

of appearance, density and moisture content of bulk material make it extremely important for terminal operators to choose the right grab. This will avoid overloading the installation, prevent leakages and optimise the overall terminal performance.

Choosing the ideal grab also requires a good understanding about prevailing conditions:

» Will unloading be with shore-based cranes or floating transshipment?
» What is the size of the ship — barge or a bigger vessel?
» What type of crane is being used?

THE CLAMSHELL GRABM

Nemag's goal is clear: to create the most productive grabs on the market. One recent addition is our nemaX®, the most productive iron ore grab in the world. Now we are introducing our next innovation — the Clamshell GrabM, the lightest and most productive clamshell grab on the market.

This achievement is the result of combining input from customers from all over the world and our 95 years of experience, supported by state-of-the-art design tools such as Solid Works, FEM analysis and TACTON product configurators.

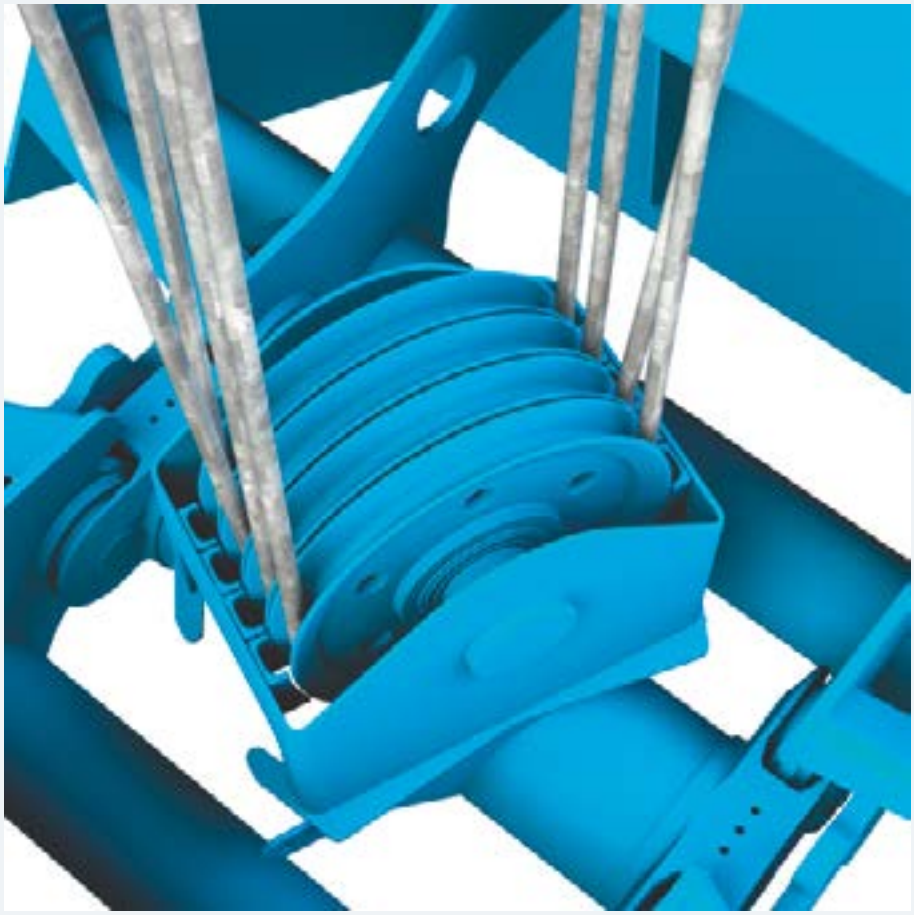
LOW MAINTENANCE COSTS

Market research shows that the highest cost of any grab will always be the operating expenditure, OPEX. We want to keep this as low as possible for our customers, which is why we use the most durable materials and have also reduced the number of parts that are susceptible to wear and tear. In addition, we have made it easier to reach and maintain the different parts of the Clamshell GrabM.

This is how we can promise your team a safer work environment and the lowest maintenance costs per ton transferred.

COMPETITIVE PRICING

By using the latest innovations in engineering, we have further streamlined our manufacturing process and enhanced our latest clamshell grab with modular parts, which all adds up to an extremely competitive price.



SHORT LEAD TIMES

Our high-performance Clamshell GrabM has been standardised for production, enabling a shorter lead time from your order to the moment you can start experiencing the increase in productivity that the Clamshell GrabM brings.

REDUCED LOGISTICS COSTS

After buying a grab, the last thing you want is high transportation costs to bring the grab to your terminal. That is why our reinvented clamshell grab has been designed with container shipping in mind. This drastically reduces the costs of transportation.

The design of the Clamshell GrabM also makes it very easy to assemble and disassemble when needed.

FULLY CUSTOMISABLE

The Clamshell GrabM is available as a highly customisable modular grab for lifting capacities starting at 20 tonnes up to an 85 tonne safe working load. However, if you are looking for a non-standard clamshell grab, please do not hesitate to contact our sales team. They will be happy to help you with all the special requests that you have.

THE NEMAG SOLUTION

Nemag offers different grab solutions as well as expertise in dry bulk handling.

Combined with your experience we can be a winning team. Join us!

For more information, visit: nemag.com

nemag®

STAYING POSITIVE IN THE PANDEMIC

COMPANY NEWS

Despite its well-publicised challenges, 2020 has been a very positive year for Negrini srl. We have been working non-stop during the pandemic to provide our customers with assistance and technical expertise on a daily basis.

One of our important customers is Italgru, with whom we have been collaborating for several years to provide grabs, which are used for various handling jobs carried out by Italgru's equipment. The photographs show our buckets just equipped and in testing phase.

THE RIGHT CHOICE

Choosing the right attachment is a major concern for any contractor and an important factor in guaranteeing the successful outcome of any job.

Over the past 43 years, Negrini has engineered and manufactured attachments of the highest quality, such as mechanical and hydraulic clamshell buckets, cable clamshell buckets with radio controlled release, mechanical and hydraulic orange-peel buckets, two- or four-rope scoop grabs, dragline grabs, trenching mechanical clamshell buckets and buckets for controlled digging depth with special valves to collect polluted mud from the sea or river bed.

Since its establishment, Negrini has engineered, manufactured and supplied

contractors and port authorities with buckets for all those jobs and every one has been a success, earning Negrini its exceptional reputation.

Negrini's engineering concept is different because its engineers believe — and decades of experience show that they're right — that heavy buckets are not necessarily stronger; in fact, they prefer to combine high tensile steel such as Hardox with accurate engineering.

Negrini buckets are therefore more resilient yet lightweight, thereby enhancing performance while saving significant amounts of energy.

Negrini's attachments are at work in many different parts of the world, from Italy to the US and from the Gulf states to Australia, making Negrini the brand of choice for many contractors. Performance and quality are the prime features that contractors want for the attachments that they will employ for their most demanding jobs.

IN-DEPTH PLANNING

When an enquiry comes in, its elements, including drawings, are studied and planned with the relevant head of department, in order to secure the established delivery time and the best use of resources.

All technical data is entered into a CAD CAM electronic system and three-dimensional solid Cad, for better management and organisation.

All materials respect technical specifications and drawings, and the company uses only reliable suppliers and also has its own qualified welders. Certificates and attestations can be provided.

RIGOROUS TESTING

Product testing is carried out by skilled workers who are also sensitive to the customer's need. All products are subject to constant control, both on arrival into the factory and during the production phase. Before shipment, the finished product is submitted to further control and testing, with the aim of appraising the effectiveness of the applied manufacturing process and guaranteeing a quality product to the client.

It's a well-known fact that any good machine, be it cable crane or hydraulic excavator, will perform at its best only if the attachment used to work is well engineered and manufactured. A high-quality attachment will not only do a good job, but will also reduce the machine stress, allow for safer working and help save energy

For more information, visit: negrini.org

CUTTING COLLISIONS

While cranes and their components represent an essential feature of any port, they are particularly vulnerable to damage, creating danger for port employees

Insurers TT Club has put together information on crane collision and allisions, which gives ports and operators advice on how to minimise the risks and issues to look out for.

Given the importance of cranes to ports' operations, the club warns that "2020 has seen its share of crane wreckage caused by inadvertent 'nudging' of the superstructure as a ship berths."

In its online information bulletin, *TT Talk*, the club stresses the vulnerability of cranes to damage when ships are berthing and warns that even if incidents are relatively low in frequency, the consequences can be wide ranging. Costs involved in assessing any damage to the crane and returning it to operation can be considerable.

"Every port or terminal operator will be acutely aware of the importance of the fixed infrastructure exposed on the waterfront. News of damage through ship allisions with quay walls and jetties in other locations must give pause for thought for all port management, but the greatest concern may be reserved for the 'meccano-like' equipment that is necessarily positioned ready for action — and highly exposed — at the edge of the berth," the club explains.

NEW GENERATION IS UK FIRST

Konecranes has supplied a material handling system, incorporating an S-series crane, at ABB's Drives Service Workshop (DSW) in Coalville, Leicestershire. The contract represents the first installation of the new generation S-series model in the UK.

The system supplied comprises a 16.1m span overhead single girder gantry and a 3.29t SWL S-series electric rope hoist. The crane has cross and long travel speeds of up to 20m/min and a hoisting speed of up to 3. m/min, with a 4.29m height of lift. The crane is operated via a radio remote controller.

Initially, ABB's engineers had been considering a lightweight crane system, but the fact that an increasing number of large and heavy drives were being serviced prompted a rethink. The company specified the S-series crane on the grounds that its features are particularly suited to the DSW's maintenance operations.

The S-series crane uses synthetic rope, which requires no lubrication, eliminating the possibility of delicate electronic components within the drive units being contaminated with oil. Smooth movement and accurate load positioning, which are critical factors for the workshop's processes, are assured by the crane's infinite and stepless speed control.

Other features of the crane design are its tilted drum and off-set reeving, which also ensure smooth and accurate load handling, while eliminating peak rope forces to reduce the wear on reeving components.

A FLEXIBLE APPROACH

The largest Liebherr material handling machine to be delivered in France to date, an LH 110 M Port Litronic, has been delivered to the port of Villefranche-sur-Saône near Lyon. The harbour is located directly on the wide-gauge axis of the Rhône-Saône rivers, acting as a tri-modal location linking waterways, road and rail carriers across the whole of France.

Florent Dupré, managing director of the harbour of Villefranche-sur-Saône, said they had been looking for a high-quality, reliable machine that would be able to deliver good handling performance and which was capability of offering flexibility to meet a wide range of different operational requirements. The company selected the LH 110 M Port, a new material handling machine with an operational weight of around 110t.

The new Liebherr LH 110 M port material handling machine was designed especially for handling bulk goods and general cargo in port handling operations. The 13m angled boom and 12m straight stick give the machine a reach of up to 23.8m, allowing it to cover an extensive working area when loading and unloading ships. Outrigger support on the front and rear mobile undercarriage and optimised weight distribution between the upper carriage, undercarriage and equipment provide for maximum stability in working operation and contribute to an above-average handling capacity.

The equipment includes the standard Liebherr energy recovery (ERC) system. This boosts the system performance, providing for greater handling capacity and, at the same time, allowing energy savings of up to 30%. The 300kW / 408hp, Stage V emissions-compliant Liebherr construction machinery diesel engine allows the material handling machine to mobilise a total output of 478kW in combination with the ERC system.

Another highlight of the LH 110 M Port is the freely variable height-adjustable double-parallelogram hydraulic driver's cab with sliding door. Its large window areas give the operator in the harbour optimum view upwards, forwards and downwards. The cab can be moved forward up to 4m for an even better view to the front, for example over a ship's side. Moreover, it also offers the operator safe and simple access from the ground. The ergonomic driver's seat, intuitive colour touchscreen display and standard proportional controls and joystick steering all contribute to comfortable operation and precise control of the Liebherr material handler.

Up to 1,850,000t of bulk and conventional goods are handled at the port every year. In order to respond flexibly to specific operational requirements, Dupré chose the attachments especially developed and produced by Liebherr for harbour handling.

The LH 110 M Port's equipment includes the Liebherr clamshell and the Liebherr wood grapple, each in two different sizes. The two Liebherr clamshells, the GMZ 80 and GMZ 120, can be used for the safe and fast handling of bulk goods such as ore, coal, sand, gravel and grain. The filling volume

THE LIEBHERR LH 110 M PORT LITRONIC MATERIAL HANDLING MACHINE IN ITS FIRST OPERATION AT THE HARBOUR OF VILLEFRANCHE-SUR-SAÔNE, NEAR LYON

of the Liebherr clamshell GMZ 80 is 6m^3; that of the GMZ 120 around 8m^3.

The special Liebherr wood grapples are used for the safe handling of all kinds of wood and timber. The Liebherr wood grapple GMH 80 can pick up and handle up to 1.9 m^2 of wood, while the GMH 120 can manage up to 3.6m^2.

To enable the attachments to be changed quickly and safely for different operations from the driver's cab, the LH 110 M Port is now equipped with the MH 110B LIKUFIX quick coupling system. This is a fully automatic coupling system for suspended attachments, for example Liebherr clamshells and wood grapples.

Dupré comments: "The combination of Liebherr attachments specially designed for the intended operation, and the fully automatic Liebherr quick coupling system will allow maximum machine utilisation of the LH 110 M Port and thus greater handling capacity at our harbour in Villefranche surSaône."

TELESCOPING OPTIONS

Liebherr has developed another option for its successful LTC 1050-3.1 compact crane. In future, crane contractors will have the choice between the existing 36m telescopic boom with the Telematik fast cycle telescoping system and a new 31m boom featuring rope extension technology. The first machines with the new telescopic boom will be delivered in the second half of 2021.

The development of the Telematik single-cylinder fast cycle telescoping system not only won Liebherr a series of innovation awards, but also revolutionised the crane market. Telematik provided the basis for the development of multi-section and therefore ever-longer telescopic booms with increased performance. The system operates using just one hydraulic cylinder and an internal locking system for the individual telescoping sections. The telescoping sections are extended easily and automatically to the required lengths using the hydraulic cylinder and are then pinned.

This lightweight single-cylinder extension system delivers high lifting capacities with long booms and large radii. Even with the booms not fully extended, Telematik delivers higher lifting capacities as individual telescoping sections can be extended in any sequence independently of each other.

CRANE RENTAL BOOST

Goeyvaerts has ordered four more eco-efficient Konecranes Gottwald mobile harbour cranes for its rental fleet across ports in the Netherlands and Belgium. The cranes will be delivered this year.

Goeyvaerts has a strong presence in north-western Europe, reaching across borders and offering crane rental packages with round-the-clock technical support. Typical customers include start-ups that want to reduce financial risk as they begin operations, companies that only occasionally need to use harbour cranes and businesses that require additional harbour cranes for better commercial flexibility.

"These new cranes are the right investment for the growing rental market," says Kevin Goeyvaerts, the company's co-owner and chief operating officer.

"Konecranes has always provided quality equipment ideal for renting: strong and reliable, eco-efficient and easy to adjust for different customer needs. We're happy to choose them again."

CEREMONIAL HANDOVER OF THE KEYS. FROM LEFT TO RIGHT: MARTIN SCHICKEL (MANAGING DIRECTOR OF LIEBHERR-FRANCE SAS), FRANCK LAFABRIE (MANAGING DIRECTOR OF TECMAT SERVICE), FLORENT DUPRÉ (MANAGER OF THE HARBOUR OF VILLEFRANCHE-SUR-SAÔNE) AND JEAN-BAPTISTE MAISONNEUVE (PRESIDENT OF CCI BEAUJOLAIS)

LTC 1050-3.1 WITH TELEMATIK BOOM AND ROPE EXTENSION BOOM (RIGHT)

One of the four new cranes will be a Konecranes Gottwald Model 6 mobile harbour crane in the GHMK 6507 variant. With a capacity of 125t and a maximum working radius of 51m, it can handle both break bulk and containers.

The other three units will be Konecranes Gottwald Model 7 mobile harbour cranes in the G HMK 7608 B variant, four-rope grab cranes for continuous-duty bulk handling. With lifting capacities of up to 150t and a maximum radius of 54m they have the reach for super-post-panamax container ships and capesize bulkers to handle containers and heavy cargo.

All four cranes will have built-in readiness for an external power supply, so conversion to electric operation will be easy when resources allow.

"The addition of these four new cranes brings the Goeyvaerts' Konecranes Gottwald fleet to a total of 24, giving its customers an even wider range of options to handle all kinds of different cargo," says Alexandros Stogianidis, sales director, Benelux for Konecranes Port Solutions.

WORLD-BEATING DELIVERY

Port Everglades in Florida, US, has recently received three new gantry cranes — the largest of their kind in the world — as part of the port's $3bn 20-year plan, which aims to increase the number of cargo berths, improve navigation channels and expand cruise and energy capacity.

"The state-of-the-art cranes are pivotal to allowing our customers to grow their businesses in Broward County so that they can compete in the global marketplace," says Port Everglades chief executive Jonathan Daniels.

"The advantage is that the extended reach of the cranes enables customers to work larger ships and gain economies of scale, thus making Port Everglades more competitive."

Shanghai Zhenhua Heavy Industries designed and manufactured the cranes as special "low-profile" models that extend out rather than up to avoid the flight path of Fort Lauderdale-Hollywood International Airport (FLL), which is less than two miles away.

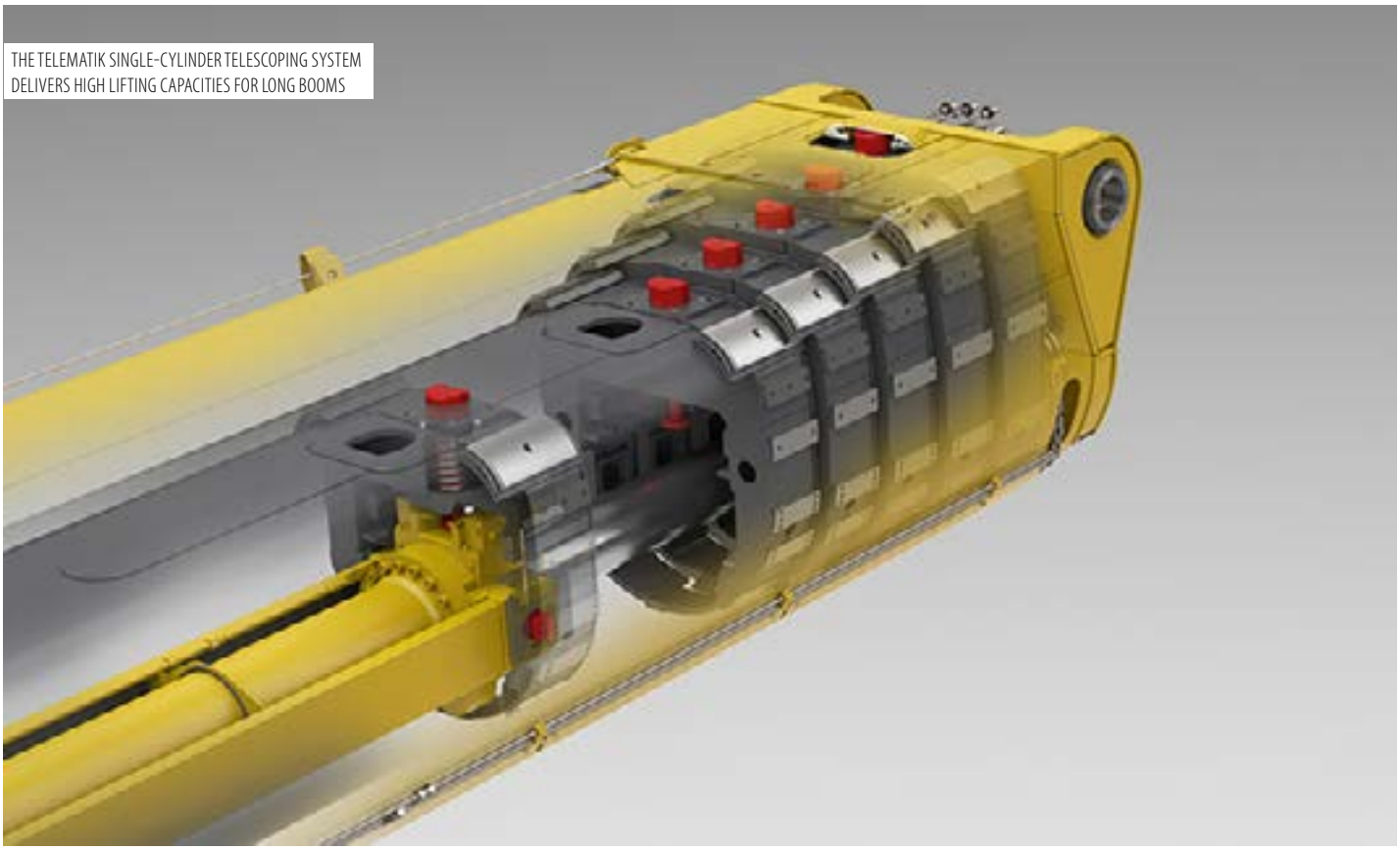
The cranes are reportedly the largest low-profile container gantry cranes ever designed and built. Port Everglades has an option to buy three more of the same cranes.

All the cranes are being fitted with lighting that reduces the impact on nesting sea turtles by using lower light levels and limits the amount of light that spreads on the ground.

The new cranes are part of the largest expansion project in the port's history, which includes lengthening the Southport Turning Notch from 274m to 731m to allow for up to five new cargo berths, which will add about 730,000 TEUs to the port's capacity.

Construction for the $471m project is ongoing and expected to be complete by late 2022. The Southport Turning Notch Extension project is anticipated to support an estimated 3,045 construction jobs.

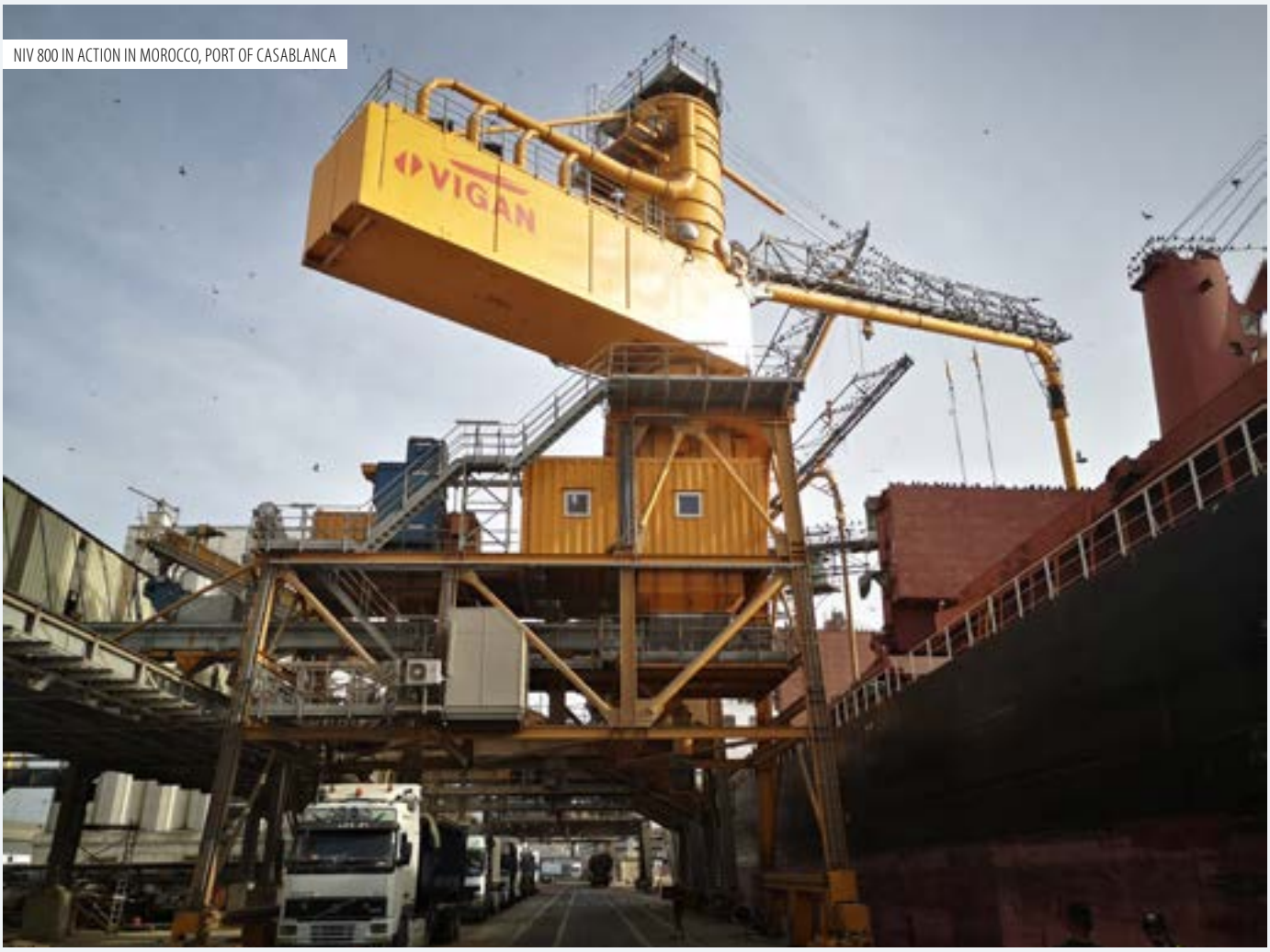
Port Everglades is also working with the US Army Corps of Engineers to deepen the Port's navigation channels from 13m to 15m and to widen narrower sections of the channel for safe vessel passage.



THE TELEMATIK SINGLE-CYLINDER TELESCOPING SYSTEM DELIVERS HIGH LIFTING CAPACITIES FOR LONG BOOMS

VIGAN LESSENS THE LOAD

COMPANY NEWS



NIV 800 IN ACTION IN MOROCCO, PORT OF CASABLANCA

Billions of tons of cereals circulate around the world every year to feed the world's growing population. Grains are mainly carried in bulk by sea and are then transported overland by truck or train, bringing the cargo to its final destination.

This is where VIGAN comes in, by offering continuous ship-unloading and loading solutions, by pneumatic or mechanic systems.

Our special handling technology maintains all the physical and chemical characteristics of products during their transport. Challenges for grain bulk logistics are energy, labour and demurrage costs, while safeguarding the quality of the discharged product and ensuring reliability over a long period of time in a demanding environment. VIGAN offers tailor-made solutions to meet these challenges.

VIGAN's equipment offers a fast return on investment by optimising operational costs:

- Low energy consumption: 0.6-0.8kW per unloaded ton
- Highly efficient cleaning of the vessel or barge hold: maximising discharge efficiency (75% and more) leads to minimised demurrage costs
- Reliability results in low maintenance costs and time-out reduction
- Durability (machines with a life expectancy of 30 years and more) and cost efficiency lead to long-term investment with short-term pay-back
- Ease of operation (simple high tech) means limited manpower and low operating cost.

Although the coronavirus pandemic has made entrepreneurs more careful in their decisions, 2021 looks more promising. As the policy of having fewer trucks on the roads spreads, the tendency of companies in Europe and other continents to use waterways for cargo transport has created more opportunities for our barge unloaders. More logistic operations will include pneumatic unloaders in the near future.

The VIGAN NIV 600 pneumatic ship unloader has now become the standard, representing on average 60% of NIV-type pneumatic ship unloaders sold by VIGAN over the past few years.

Each machine is customised and optimised according to customers' technical requirements and site specifications: gantry type (stationary, self-propelled on rubber wheels or on rails); unloading capacity (from 160 to 800 tons/hour); boom length (up to 30m); diesel/electrical power unit, and many other specific optional devices.

VIGAN NIV-type pneumatic ship unloaders are typically suitable for medium-size vessels up to post-panamax, mainly due to their boom length, which can reach up to 30m, and the high suction capacity, up to 800tph.

VIGAN's pneumatic equipment will handle most free-flowing products with densities, between 0.5 and 0.9 and a natural angle of repose less than 40°. These include all kinds of grains (corn, wheat, barleys), oilseeds, raw materials for animal feed, wood pellets, specific chemicals such as soda ash and also slightly compacting products such as soy bean meal.

As each case is specific, VIGAN helps customers to make the right choice. It is important to ensure that the selected machine is the most suitable for the required job, which is generally a rather complex matter. To unload, for example, up to five million tons of seeds per year, VIGAN usually recommends the use of one or two pneumatic ship unloaders on a gantry. For higher unloading rates, VIGAN recommends a mix between NIV and SIMPORTER (mechanical ship unloader). In this case, a pneumatic ship unloader would also be dedicated to assist in the cleaning of ship holds, which is the least efficient phase during the unloading with mechanical equipment.

Our unloaders are all designed, manufactured and pre-assembled in VIGAN's factory in Belgium. Its central position in Europe makes it possible to exploit the excellent network of top-quality suppliers in Europe.

VIGAN's international network of agents enables the engineering team to adapt its equipment to any specific local customer's requirement.

For more information, visit: vigan.com

NIV 500 AT PORT OF TAICHUNG, TAIWAN

GRAINS OF TRUTH

BY BASIL M KARATZAS

Pandemic aside, 2020 has been a good year for the global grain market, with 2021 starting on equally positive prospects

The covid-19 pandemic has upended demand patterns and the supply chains for both consumer products and also raw materials and commodities. Demand may have not structurally shifted for many of these products and commodities — besides the initial shock due to the mostly massive and unforeseen effects of lockdowns on a global scale — but supply chains and the overall approach to procuring, transporting and storing them has invited a new line of thinking.

Unlike in other crises (for instance, the recession of 2008) that caused demand to drop precipitously and often structurally, the covid-19 pandemic had little impact on demand besides the initial shock. On the other hand, the current pandemic has invited a deep re-evaluation of cardinal supply chain concepts (such as the almost religiously revered "just-in-time" inventory) at a time when shipping operations worldwide have been affected, with still expectations for further but insufficiently quantifiable disruption.

Certain commodities require higher supply chain standards than others (ie transport and storage to not only prevent spoilage, but also

to maintain high edible standards); more importantly, disruption in the procurement of certain commodities can have bigger impact than others in terms of humane implications and also social repercussions.

Grain is such a commodity, as it requires supply chains of high standards on a global scale to safely maintain the edible character of the commodity (unlike, say, coal and iron ore, which can be stored outdoors, at least temporarily, with minimal impact on the commodity). Furthermore, where disruptions in the iron ore trade may cause temporary inconveniences, disruption in the supply of grains can have a toll on human life, causing malnutrition, famine, and so on. Societies have also been known to revolt when food is insufficient to feed the populace.

In this respect, 2020 was a very interesting year in the world of grains for observing new trading and shipping patterns of the commodity, brought about by the impact of covid-19 on the production and supply chain. Several more "finer" variables were also playing out, ranging from local weather patterns and rainfall affecting production, and swine flu affecting feedstock demand of grains, to local fiscal considerations (ie export tariffs to both collect revenue and also affect domestic stockpiling) and Trump's trade agreement with China and imposition of massive grains imports by China.

All along, many countries importing grains had to balance existential considerations as running low on food supplies could potentially cause famine and all its ensuing repercussions.

The first half of 2020 saw the world come to a standstill due to lockdowns and trade collapsed. Shipment of raw materials and commodities, including grains, was kept to a minimum as transport and port operations were affected worldwide. However, as the initial impact of the pandemic was assessed, trade and shipment of grains improved materially in the second half of the year, especially in China.

Probably none of the variables mentioned earlier by itself was strong enough to move the market and establish a new trend, but when acting in unison, the impact was noticeable.

At the time of writing, there is no cumulative data for the whole 2020 calendar year as yet. However, based on data including October 2020, preliminary projections are for the international grains trade to have grown between 1-1.5% in 2020. Grains and feedstock imports by the least developed countries (LDCs) and the aggregate of countries situated in sub-Saharan Africa are projected to show negative overall trends, which causes concerns on both trade terms and, mainly, in terms of food insecurity in the wake of the pandemic.

Once again, developed countries — and especially China — have shown positive trends despite the pandemic, with China's grains overall imports projected to show a greater than 6% increase year on year.

For both the northern and southern hemisphere, production of wheat, rice and soybeans has ticked marginally lower in 2020, with the exception of the production of maize, which has reached an all-time high. However, inventories for all four commodities are projected to end lower by the end of 2020 when compared to the prior year.

Tighter inventories — at a time when the pandemic has still many more months before any vaccination efforts have an impact on daily life — are likely to be a concern and possibly spur importing countries to act proactively to secure sufficient volumes. Accordingly, expectations are for a decent trading market in the first half of 2021, helped by the same tailwinds that were in effect in the second half of 2020, in addition to concerns for lower inventories.

Taking a financial perspective to the grains trade, with globally very low interest rates commodity prices — among many other asset classes — have increased substantially in 2020, with a few of them approaching all-time highs. However, the softness of the US dollar — the currency at which commodities are priced — has made grain prices increases more bearable, especially for developing and LDCs.

The bull market for commodities — and grains — is likely to be maintained in the early part of 2021 as demand is expected to pick up in the hopes of massive vaccination programmes allowing a return to more normal life, while many developed countries will keep importing grains —and commodities — as an extra safety alternative for any vaccination hiccups, boosted by an environment of low interest rates and a soft US dollar.

One silver lining in the grains trade is that shipping costs, especially ocean freight, seem to have been kept under control, in 2020 and likewise projected in 2021. Despite the increased trade for grains, other ocean-shipped commodities have seen their volumes decline in 2020.

In any event, the dry bulk ocean shipping industry seems still structurally oversupplied, which will keep a lid on it for 2021 and even longer, short-lived freight spikes notwithstanding. Although dry bulk shipowners seem to barely achieve positive investment returns, at least in the short term and for the foreseeable future their support for the grains trade is assured.

Grains are unlike other commodities for they need extra storage and handling care. Also, they are a critical commodity as both livestock and humans depend on them, day in and day out, month in and month out, season in and season out. Governments worldwide feel obligated to keep active in this market, for better or worse.

In both short- and long-term, the pandemic has made the grains trade too critical to be left only to market forces. This may not be a bad thing overall, as it will be providing market — and pricing — support for years to come.

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

KEEPING TRACK OF CONVEYOR BELT CLEANERS

COMPANY NEWS

Continuing its leadership in the development and implementation of advanced technologies for conveyors and other bulk material handling applications, Martin Engineering has announced a conveyor belt cleaner position indicator that monitors the blade, tracking and reporting remaining service life.

The intuitive Martin N2® Position Indicator (PI) monitors primary belt cleaner blades, notifying Martin service technicians and plant operations personnel when re-tensioning or replacement is required and/or when abnormal conditions occur. The PI can be part of a new installation or directly retrofitted to existing mainframes that use the company's replacement blades. Managers and service technicians can quickly access information on any networked cleaner via mobile phone.

With approximately 1,000 operating systems currently in service and installations continuing daily, the technology has been embraced by bulk material handlers in a wide range of industries and applications. Martin offers the equipment, monitoring service and batteries free of charge to qualifying customers. The company will also support the PI components and provide customer alerts without cost as needed, with mainframes and tensioners replaced free for users of Martin belt cleaner blades.

"There are no annual maintenance fees and no add-on charges for cell phone access," confirms Martin Engineering global marketing director Brad Pronschinske.

Position indicators can be mounted anywhere from 3-800m from the cellular gateway and the robust, sealed construction means it is virtually immune to damage. Up to 50 units can be monitored by a single gateway connecting to the internet, usually located at the highest point in the plant, where the cell signal is strongest. The system does not require a cellular line for each PI, instead communicating via radio frequency from each sensor to the gateway.

Operating independently of any plant communications infrastructure, the small physical size and low power requirements deliver a projected battery life of two years. The self-contained model was developed by Martin in order to minimise the dependency on in-plant resources. Only the gateway requires a constant 110V power point.

The device eliminates the need for manual inspections by giving technicians precise information, delivering critical real-time intelligence and reducing exposure to moving conveyors, improving both efficiency and safety. Maintenance planning is simplified by having detailed information available on demand, allowing service personnel to deliver and install replacement wear parts during scheduled outages. The result is an improved return on belt cleaner investments.

For more information, visit: martin-eng.com

THE N2 PI NOTIFIES SERVICE PERSONNEL WHEN A CLEANER REQUIRES RE-TENSIONING OR REPLACEMENT

EMPLOYEES AND SERVICE TECHNICIANS CAN QUICKLY ACCESS INFORMATION ON ANY NETWORKED CLEANER VIA MOBILE PHONE
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SETTING NEW STANDARDS

Improving the handling of cement is an increasing element in saving time, as well as money, with new products easing the problems. New eco-friendly products are also coming to the fore, cutting environmental costs

GREEN CEMENT UNDERGOES TESTING © PROFESSOR ALI ABBAS

Researchers at the University of Sydney have managed to create cement that is environmentally friendly by using waste and industrial by-products.

They have successfully poured "green" cement — pavement made from a unique mix of fly ash and waste materials including ground glass and gaseous carbon dioxide.

The trial "eco-pavement" has saved 752kg of sand from being dredged and 327kg of CO_2 being emitted into the atmosphere, while its production has saved the equivalent energy of 1,000 cups of coffee or driving a car over 1,800km, the university says.

Concrete production is an energy-intensive process that involves sand and aggregate dredging, contributing to erosion and environmental degradation.

Director of the Waste Transformation Research Hub and School of Chemical and Biomolecular Engineering Professor Ali Abbas says that the cement was designed to counteract the environmental impacts of traditional concrete production.

"Traditional concrete production is energy and resource intensive, yet is one of the most common materials

used by the construction industry," says Professor Abbas, who worked alongside Delta Electricity and in co-operation with recycling company IQ Renew and construction materials and industrial minerals supplier Morgan Ash to develop the technology.

"We sought to create a less energy-intensive solution that would have less impact on the environment using carbon-capture and beneficially reusing materials that would otherwise end up in landfill."

The concrete is made from a cement that uses fly ash — a by-product of coal combustion — and waste glass, which has traditionally been energy-intensive to recycle.

"Around 12m tonnes of fly ash are produced each year in Australia. In our green concrete, we use fly ash as a cement replacement," says Professor Abbas. "Glass, on the other hand, has traditionally been an expensive and energy-intensive material to recycle. Less than half of the 1.4m tonnes of glass produced each year in Australia is recycled. When crushed, glass can replace both sand and aggregates in green concrete."

Over the next 12 months, the team will continuously monitor the concrete's performance, with the hope to later commercialise the technology and introduce it to the market as an alternative to traditional concrete.

SMOOTH OPERATION

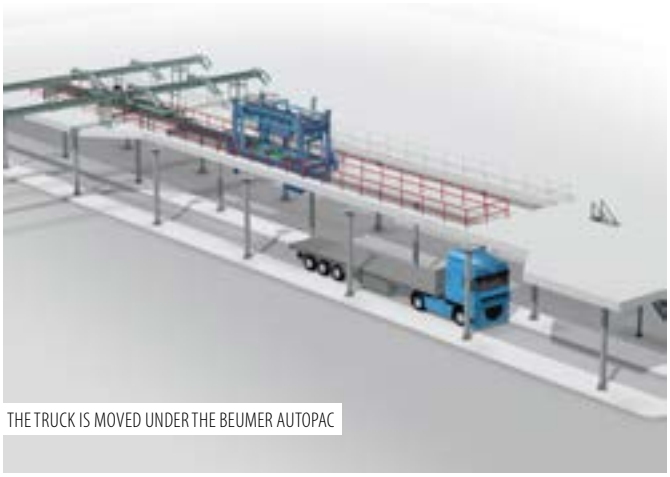
Making handling cement more effective, Beumer's autopac loads and palletises cement bags simultaneously.

The autopac enables users to automatically load bagged bulk materials, including cement, on trucks and simultaneously palletise them. It consumes very little energy, is reliable even in dusty environments and can be easily operated and maintained. The machine is also suitable for paper, HDPE and PP valve bags, the company says.

Laser positioning aids are mounted to the left and right of the Beumer autopac that project the outer contours of the machine with a clearly visible red beam on the loading space, helping the operator to position the loading head on the truck.

From its starting position, the autopac starts the automatic loading process, bag by bag, directly from the filling machine via belt conveyors on to the truck.

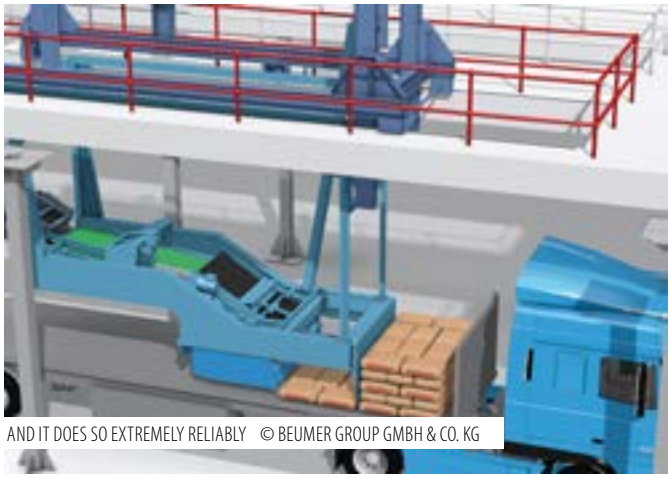
"With our Beumer autopac, we have a system in our product range that



THE TRUCK IS MOVED UNDER THE BEUMER AUTOPAC

THE OPERATOR POSITIONS THE BEUMER AUTOPAC ON THE LOADING SPACE OF THE TRUCK

THE BEUMER AUTOPAC LOADS THE TRUCK FULLY AUTOMATICALLY



AND IT DOES SO EXTREMELY RELIABLY © BEUMER GROUP GMBH & CO. KG

THE FULLY AUTOMATIC LOADING PROCESS ENABLES USERS TO ACHIEVE A CONSTANTLY HIGH LOADING PERFORMANCE AND STACK QUALITY © BEUMER GROUP GMBH & CO. KG

can load trucks automatically," explains Markus Peitzmeier, senior sales manager.

The use of an electronic bag counting system makes sure that the truck is neither under- nor overloaded. "The programme control recalculates the height setting for each layer," Peitzmeier says.

To attain the highest possible degree of stability for the whole load on the truck and in order to optimally utilise the loading space, two mirror-inverted layers are palletised next to one another.

Two belt conveyors positioned one above the other flatten the bags before the loading process and thus remove the air from them. After being positioned, the bags are also pressed by the loading head, which makes the stack more compact and stable. Meanwhile, the next layer is already being prepared.

"The Beumer autopac is ideally suited for use in emerging countries, where the transshipment of bagged bulk goods is increasing. In these countries, labour costs are rising and it is becoming more and more difficult to find appropriate personnel for this kind of work," says Peitzmeier.

"Manual truck loading is exhausting and usually requires two people who alternate with their colleagues for each loading process due to the heavy physical work involved. Furthermore, there is the high level of dust formation, which negatively affects the employees' health.

"During the manual loading process, the loading performance as well as the quality of the bag stacks often fluctuates. These problems are eliminated with the automac system as one employee is able to operate more than one machine thus raising efficiency levels."

With its compact design, the system can be quickly and easily maintained and is reliable and safe to operate. "This is supported by the fact that we have only integrated electromechanical components," Peitzmeier explains.

"This eliminates the need for hydraulic or pneumatic components, which wear out quickly or require expensive compressed air."

OUT WITH THE OLD IN ALASKA

Work on the new cement and petroleum terminal at the port of Alaska continued during 2020 and is expected to be completed later this year. The plan is to replace a petroleum terminal at the port that is severely corroded and complete a new facility.

The US Department of Transportation Maritime Administration (MARAD) awarded a $20m infrastructure development grant to help replace aging Port of Alaska docks early last year.

MARAD's Port Infrastructure Development Program (PIDP) offered $292.7m in nationwide grant opportunities in 2019 to pay up to 80% of project costs for US coastal seaport improvements.

Port of Alaska applied for PIDP funding to help offset construction costs of its new petroleum and cement terminal (PCT) that started in-water construction last year.

The $20m PIDP grant combined with the $25m Better Utilizing Investment to Leverage Development (BUILD) grant that the US Department of Transportation awarded the port will offset a significant portion of the more than $200m projected PCT costs.

The State of Alaska also awarded $20m in 2019 to help construct the PCT. Port of Alaska instituted new fuel and cement tariffs on 1 January 2020 that will be used to pay remaining PCT construction costs.

Port of Alaska in Anchorage handles about half of all Alaska's inbound fuel and freight, half of which is delivered to final destinations that are outside of Anchorage.

PCT construction is the first phase of Port of Alaska's modernisation programme that aims to replace aging docks and related infrastructure before they fail due to a combination of corrosion, upper Cook Inlet's harsh marine environment and seismic stress.

A magnitude 7.1 earthquake in November 2018 caused considerable damage to the port's two petroleum terminals, which also handle most of the cement used statewide.

Port of Alaska's general cargo terminals suffer the same age, corrosion and seismic issues as the fuel docks and must be replaced before they fail due to a loss of load-bearing capacity, which could occur within the next eight years, or sooner if there is another large earthquake, the port authority says.

Designed to help delegates identify and resolve common problems when handling various biomass materials.

This new course is aimed at the manufacturers and suppliers of biomass materials, at the users – particularly those responsible for maintenance and management on site – and at the manufacturers and installers of equipment used to transport and store biomass materials.

BIOMASS OPERATIONS AND HANDLING TECHNOLOGIES

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- Biomass potential and possible future trends

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A VISIONARY CONCEPT

COMPANY NEWS

Machine malfunctions and standstills that are not swiftly eliminated can become expensive for manufacturing companies. Beumer Group has therefore developed Beumer Smart Glasses, a pioneering product that supports users quickly and easily. Beumer's customer support technicians use them to take a virtual look over the shoulder of the customer's service technician to solve the problem together. This digital solution reduces travel times and costs.

"With Beumer's Smart Glasses, our customers can get in live contact with our service experts anywhere and at any time," promises Christopher Kirsch, team leader of BG.evolution. With this spin-off at Dortmund university, the company brings digital innovation from outside into the company.

As Kirsch explains: "We are working on a customer problem with the support of start-ups to develop 'Minimum Viable Products'. These are minimally equipped prototypes whose market potential and customer acceptance we put to the acid test." This makes it easier for the Beumer Group to decide quickly whether a new technology makes sense to develop into a finished product — such as Smart Glasses.

Together with colleagues from Beumer Customer Support and the Department for Research and Development in Beckum, the employees in Dortmund made this digital solution ready for the market.

"From October 2018 to January 2019, long-term tests were carried out with various customers, including one with live testing with a long-term customer from the building materials industry. We were successful in concluding this phase," reports Kirsch. The user has been using high-capacity palletiser Beumer paletpac and a high-capacity packaging system Beumer stretch hood for years.

REDUCING IDLE TIMES

If there is a problem during operation, this may easily result in production bottlenecks. In the worst case scenario, this results in delays of day-to-day operations. "If a machine suddenly breaks down, the problem must be solved as fast as possible," says Kirsch.

This is the only way for users to save time and money. If they are not in a position to handle this by themselves, Beumer Group sends its globally located technicians out to prevent longer downtimes. In addition to service technicians, customer support also provides qualified telephone support for troubleshooting, which is available 24/7.

However, it can be challenging to successfully communicate complex problems quickly and clearly over the phone. Imagine if the customer had the opportunity to have a Beumer technician take a quick and easy look at the problem at any time — on-site support, without actually being there. Beumer's Smart Glasses make it possible.

The employee at the machine puts on the glasses and starts the Beumer support app via voice command. The employee sends a service number and pin code to the hotline, and a connection with image and sound is established.

The Beumer technician receives the same image as the customer. The technician can then give instructions directly and display all relevant information in the field of vision. The employee has both hands free to follow the expert instructions and carry out necessary actions.

SIMPLE TO USE

Faults can be solved quickly and precisely — and at any time. Beumer's experts are available around the clock, seven days a week. "Language barriers or the lack of specialised knowledge are no longer an issue when it comes to troubleshooting," explains Kirsch. "Together with the user, we can also better validate why the fault occurred based on the recorded images."

"As part of Beumer's comprehensive customer support, users add the Beumer Smart Glasses as an extension to their monthly or annual hotline service agreement. Together with BG.evolution, the Beumer Group is currently developing further digital products under the umbrella of 'Smart Solutions'.

"Many of our customers are already showing clear interest in Beumer's Smart Glasses," Kirsch concludes.

The 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 annual sales of about €950m. 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 more information, visit: beumer.com.

THE SERVICE TECHNICIAN HAS ALL-IMPORTANT INFORMATION DISPLAYED IN THE LIVE IMAGE OF THE CAMERA VIA BEUMER'S SMART GLASSES.
© BEUMER GROUP GMBH & CO. KG

AT BG.EVOLUTION IN DORTMUND, BEUMER COLLEAGUES ARE WORKING ON A CUSTOMER PROBLEM AND DEVELOP SO-CALLED MINIMUM VIABLE PRODUCTS — PROTOTYPES THAT FEATURE MINIMUM EQUIPMENT — AND CHECK, IF APPLICABLE, THEIR MARKET POTENTIAL UP TO MARKETABILITY

BEUMERGROUP

CONTINUOUS IMPROVEMENTS

With the safety and performance of conveyors critical to an operation's success, Martin Engineering considers a new approach to belt conveyor systems

THE GENERATOR CAN BE EMPLOYED ON VIRTUALLY ANY STEEL ROLLER © 2020 MARTIN ENGINEERING

Conveyors are among the most dynamic and potentially dangerous areas of equipment at a mine or material processing site. Even though their safety and performance are critical to the operation's success, the impact of their contribution to overall efficiency is often unrecognised by management and workers alike.

Operational basics of belt conveyor systems are too often a mystery to those employees, who have little understanding about the hardware installed and the performance required from the components.

The knowledge gap is understandable. The attention of personnel at a mine or coal handling operation is centred on the processing of the company's main product. The "care and feeding" of belt conveyors — that is, the adjustment, maintenance and troubleshooting that make a huge difference in safety, performance and profitability — is typically outside their expertise.

It's not that they don't care about conveyors, but the ongoing maintenance and service of these systems is often not part of their immediate focus or within their time constraints. In addition, there is often

THIS SLIDE-OUT BELT CLEANER IS ENGINEERED TO BE ACCESSED SAFELY AND REPLACED BY A SINGLE WORKER

THE TRACK-MOUNTED SYSTEMS CAN BE SERVICED QUICKLY AND SAFELY, WITH NO REACH-IN MAINTENANCE

THE UNIQUE BELT CLEANER FORMS A 3-D CURVE BENEATH THE DISCHARGE THAT CONFORMS TO THE PULLEY'S SHAPE

a failure of the retiring workforce to pass along the wisdom they've gained over the years. Furthermore, some industry experts have discussed the "missing generation" in mining-related jobs, exacerbating that knowledge gap. Although mining engineering seems to be regaining its "cool" in recent years, there still appears to be a general shortage of people in the 25-45 age range.

PROTECTING ASSETS

"Personnel are the single most important resource of any mine or industrial operation and engineers and designers are incorporating greater functionality into designs that will improve safety," observes Martin Engineering chief technology officer Paul Harrison. "Standards continue to tighten, driving the need for equipment designs that are not just safe, but optimised for safety — that is, designed with safety as a fundamental priority. At the same time, there is increasing pressure for continuous and ever-increasing production."

To meet the demands for greater safety and improved production, some manufacturers have introduced equipment designs that are not only engineered for safer operation and servicing, but also reduced maintenance time.

One example is a new family of heavy-duty conveyor belt cleaners, designed so the blade cartridge can be pulled away from the belt for safe access and replaced by a single worker.

The same slide-out technology has been applied to impact cradle designs. The systems are engineered so operators can work on the equipment safely, without breaking the plane of motion. "External servicing reduces confined space entry and eliminates reach-in maintenance, while facilitating faster replacement. The result is greater safety and efficiency, with less downtime," says Harrison.

Another example is a revolutionary new belt cleaner design that can reduce the need for bulky urethane blades altogether, an innovative belt cleaning system that has received the Australian Bulk Handling Award in the "Innovative Technology" category for its design and potential benefits. The patented design delivers extended service life, low belt wear, significantly reduced maintenance and improved safety, ultimately delivering lower cost of ownership.

"Unlike conventional belt cleaners that are mounted at an angle to the belt, this unique cleaner is installed diagonally across the discharge pulley, forming a three-dimensional curve beneath the discharge area that conforms to the pulley's shape," explains conveyor products manager Dave Mueller. "The design incorporates a matrix of tungsten carbide scrapers and is tensioned lightly against the belt to prevent damage to the belt or splices."

Despite extremely low contact pressure between belt and cleaner, it has been shown to remove as much as 95% of potential carryback material. The novel approach has been so effective that in many operations, previously crucial secondary belt cleaners have become unnecessary, saving further on belt cleaning costs and service time.

POWER POINTS

Another trend in large operations is a need for enhanced automation and monitoring, including such tasks as load sensing, belt tracking, cleaner tensioning and lighting. "In most cases, electrical power is supplied only to the conveyor locations where it's needed, such as the drive motor, and is not typically available for general purpose use," Harrison continues.

"In many operations, this lack of available power means that any monitoring of the conveyor must be done by technicians physically walking the length of the structure, which can be a difficult and time-consuming task when the systems are long and span difficult terrain."

A more efficient approach is to employ sensors to transmit important data from remote points to a central location where it can be monitored in real time and recorded for later analysis. But intelligent monitoring systems for any conveyor system require power for extended operation.

Due to the distances involved, cabled communication systems are not ideal, and therefore wireless communication systems are more advantageous. Options such as solar are not well suited to the general conditions of a conveyor system, as monitoring devices are often required in an enclosed structure without access

to sunlight, or for continuous operation during both day and night.

A conveyor is driven by a multi-kilowatt motor and this power is readily available system-wide in the form of the moving belt. The motors driving the belts are typically sized with a considerable power safety factor to account for parasitic loads, such as rolls with damaged bearings, tracking devices (which may work almost continuously), sealing systems, belt cleaners and material changes due to different moisture levels and variable loads. For these reasons, engineers have searched for ways to take advantage of the available kinetic energy of the moving belt to bring power to the specific places where sensors and other devices would provide advantages.

In most conveyor designs, the belt runs on a set of rollers that provide support and guide the belt. The typical conveyor roller is a very reliable device, with key components such as bearings, seals and the "steel can" all well understood in the industry. Product designers theorised that they could draw power from a moving belt by attaching an independent generator directly to one of the rollers. In this way, they felt that power could be drawn from the conveyor without altering the structure of the system or affecting its physical configuration.

"Being able to add a generator to a roller delivers the benefit of utilising the proven reliability of existing roller designs, while drawing power from the belt for a wide variety of electronic devices," says Mueller. The goal was to engineer a device with the versatility to retrofit existing idler designs, so operators would not be required to maintain a special stock of conveyor rollers, as the generator could be employed on virtually any steel roller.

Product engineers developed a design to accomplish this through the use of a magnetic coupling that attaches to the end of an existing roller. "The outside diameter of the generator matches the diameter of the roll, but places the generator outside the normal belt line to avoid the heavy loads and fugitive material that tends to damage existing design attempts," Mueller adds. "The generator is held in a fixed position by the roll support system, but is not normally required to bear any of the material load."

The reliable power supply helps bring a new level of sophistication to conveyors, allowing designers to equip their systems with devices such as weigh scales, proximity switches, moisture sensors, pressure switches, solenoids and relays, as well as timers, lights and even additional safety mechanisms. Wireless communication can be used to transmit directly to a central controller, giving operators a cost-effective way to access data that has not been readily available in the past — and taking another step toward "smarter" conveyor systems.

In a related move toward safer, more productive material handling, Martin Engineering has also introduced an automated pneumatic tensioning system for belt cleaners. The new device delivers precise monitoring and tensioning throughout all stages of blade life, minimising the labour typically required to maintain optimum blade pressure and extending the service life of both the belt and the cleaner.

Equipped with sensors to confirm that the belt is loaded and running, the system automatically backs the blade away during stoppages or when the conveyor is running empty, minimising unnecessary wear to both the belt and cleaner. The result is consistently correct blade tension, with reduced power demand on start-up, all managed without human intervention.

LONG-TERM GAINS

With a properly trained staff and thoughtfully designed components, conveyor maintenance is becoming easier and safer than ever before. Thanks to new component designs and advanced engineering capabilities, the work environment has been drastically improved in recent years and operators are reducing downtime due to clean-up and broken equipment.

These gains should inspire operators to make time for a cost/benefit analysis of new technologies and assess the long-term gains of both increased efficiency and workplace safety.

"Managers concerned with the overall safety and cost of operation need to go through the numbers to see how the impact of rising labour costs for clean-up and maintenance, combined with the expense of potential fines or forced downtime, can affect the bottom line," Harrison concludes.

Using new and emerging technologies like the ones described here, even poorly-performing conveyors often don't need to be replaced or rebuilt, but merely modified and reconfigured by knowledgeable and experienced technicians installing modern equipment. These improvements will help operations improve efficiency, reduce risk and contribute to regulatory compliance.

REMOTE CONTROL

With the advent of the pandemic during the past year, there has been increasing emphasis on remote methods of working, ensuring vital services can be carried out safely

ShipServ recently announced the launch of its new platform that has been developed to help maritime buyers and suppliers seize the social, economic and environmental opportunities of the Blue Economy.

The new platform has been enhanced to promote best practice in sustainable trade in line with the opportunities of the Blue Economy, as well as a desire to drive sustainability standards within the maritime industry to improve society and welfare, drive economic development, and reduce its impact on the environment. It also aims to reduce the complexities of maritime trade, as well as utilising the latest standards and processes to ensure security in a digitalised shipping industry.

On the new platform, maritime buyers will be able to see suppliers' sustainability credentials more clearly and can analyse a supplier's performance, as well as their commercial, social and environmental capabilities.

As part of a phased approach, ShipServ will also look at enhancing the platform's sustainability features, including reporting and benchmarking, as well as increasing the visibility of sustainably-conscious and accredited suppliers with buyers who are searching for their products and services.

A further key development to the platform is the merging of data from multiple systems and sources into one, transparent marketplace. This will provide maritime buyers and suppliers with the ability to interact more directly with each other.

Maritime buyers will soon be able to put together just one Request for Quotation (RFQ) that incorporates items from multiple suppliers. The ShipServ platform then manages the efficient execution of the RFQ, significantly increasing the speed of ordering goods and supplies.

SMART GLASSES

Beumer Smart Glasses are one of the latest innovations to provide support remotely, with technicians able to be on site, without actually being there in the flesh.

Machine malfunctions and standstills that are not eliminated as quickly as possible can become expensive for manufacturing companies, but the smart glasses allow Beumer's support technicians to take a virtual look over the shoulder of the customer's service technician to solve a problem.

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Faults can be solved quickly and precisely at any time as Beumer's experts are available around the clock, seven days a week. "Language barriers or the lack of specialised knowledge are no longer relevant for trouble shooting," explains Kirsch. "Together with the user, we can also better validate why the fault occurred based on the recorded images."

SUPPORT TOOL GOES LIVE

After partnering with The Australian Marine Environment Protection Association (AUSMEPA) and winning a $250,000 Google Impact grant in 2016, RightShip and AUSMEPA have successfully developed a Maritime Emissions Portal (MEP), which will provide leading emissions inventory data to ports around the world.

Now available for commercial use, the MEP has been designed as a tool to support port operators to better and more accurately understand ship-based emissions, and based on that evidence identify opportunities to develop management strategies.

Combining Automatic Identification System (AIS) movement data and RightShip's unique vessel insight data, the MEP estimates ship-sourced emissions at specific ports and provides heatmap indications of hotspots and opportunities to reduce environmental impact.

Using industry best practice guidelines from groups including the US EPA, California Air Resources Board and the International Maritime Organisation, the tool is the first of its kind and can monitor all vessel types, including ocean-going vessels, offshore support vessels and tugboats, as well as all operating modes: anchorage, transiting, manoeuvring and hotelling.

The easy-to-use digital tool enables ports to better understand and assess their emissions inventory and local air quality and then to identify opportunities for management strategies via the produced heatmaps. Port authorities can use several filters including ship type, points of interest, vessel age and emissions type to develop a clear view of vessel activity while in port.

Kris Fumberger, global sustainability manager at RightShip, says: "There is a real opportunity for port operators through use of the MEP to more accurately understand the ship-based emissions profile within their port areas and to also understand the extent to which ship sourced emissions are contributing to total air shed emissions for the area.

Roger Johnston, chief executive of Pilbara Ports Authority says working with RightShip to develop the MEP had provided a clear insight into the port's marine emissions profile.

"The pilot study modelled the financial year 2018/2019, which has allowed us to compare the modelled outputs of the MEP with the collected data from that period. This provided the team with the ability to validate the process and we are continuing to test this outcome," he concludes.

KRIS FUMBERGER, SUSTAINABILITY MANAGER, RIGHTSHIP

NORTH MITIGATES RISKS

North P&I Club has launched a new marine risk awareness solution, hosted on its interactive MyGlobeView digital platform.

Route Risk Advice offers users an innovative digital tool designed to evaluate and demonstrate the potential hazards of a voyage from port of origin to destination. The application joins a growing stable of MyGlobeView solutions, which includes the 2020 Safety4Sea Technology Award-winning Covid-19 Tracking Tool.

MyGlobeView provides North members and correspondents with exclusive access to more than 40 alerting and reporting features, including industry news, port details, trading and commercial updates, and guidance on sanctions, travel and weather. The addition of the new application means that users can now input a voyage plan and receive up-to-date information on the risks that may arise at sea and in port.

"We developed Route Risk Advice with our members in mind, taking into consideration their feedback to give them greater control of the datasets available on MyGlobeView," says Colin Gillespie, director of loss prevention, North P&I Club. "It is a constantly evolving solution to which we regularly add new layers of data, helping members to plan safe and efficient routes based on up-to-date, reliable information."

Users of Route Risk Advice can establish bespoke reports based on specific routes and locations, which they can save or print for future reference. These reports are uniquely supplemented with North's in-house expertise and knowledge from its claims, legal and loss prevention teams, Gillespie adds. A built-in measurement tool accurately determines the distance between any given points, while a feedback function encourages suggestions for general enhancements and new data feeds, enabling continuous improvement.

REMOTE SURVEY BENEFITS

Bureau Veritas (BV) has successfully completed a proof-of-concept project for underwater remote surveys using the Seasam technology eco-system from Notilo Plus on a Corsica linea ship, *The Mediterrannee*.

Efficient underwater inspection of shipping vessels is important for the industry as a substitute for docking surveys at agreed intervals or to inspect hull damage. BV has been evaluating opportunities to provide effective remote inspection services. Using the Seasam system, an in-water survey of a ship located in Marseille has been supervised from its head office in Paris.

The Seasam drone, sensors, and control system with Notilo Plus software has successfully demonstrated innovative and enhanced capabilities as one of the possible alternatives to the traditional diver in-water survey.

BV has observed the following benefits:

- Safer operations with no divers in the water
- Reduction in risk of disturbance to ship operations
- Higher quality pictures generated by the drone due its stability in the water
- Ease of deployment with one operator and limited equipment compared to a team of several divers and their equipment
- A collaborative platform providing enriched video sharing
- A secure data platform providing intuitive and detailed reporting.

Laurent Leblanc, senior vice president technical and operations for Bureau Veritas Marine and Offshore, says: "Underwater remote surveys can improve safety, reduce risk, time and expenses to provide better results. Maintaining the integrity and safety of a ship is a huge task. This new underwater technology brings digital classification to another level, providing new opportunities to both our clients and to BV."

STREAMLINING SYSTEMS

Innovez One, one of the world's leading providers of port management software for the world's busiest ports and towage operators, is embarking on a collaboration to automate and digitise Singapore's last-mile delivery of launch operations at its Marina South Pier (MCP) and West Coast Pier (WCP). This project is one of the 11 Joint Industry Projects recently awarded by the Maritime Port Authority and announced by Chee Hong Tat, Senior Minister of State for Transport and Foreign Affairs, at the Smart Port Challenge 2020 Finals.

Innovez One will launch its new Counter Service Digital Platform, a contactless counter services software that will streamline the current time-consuming manual operations at MCP and WCP, increasing efficiencies and generating significant cost savings. The project is being conducted in collaboration with leading maritime companies including GAC Group, Bernhard Schulte, HHH Marine Launch, DM Sea Logistics (part of DM Group Services), and KanLian Ferry. The trial will first be conducted in West Coast Pier (WCP) before being further extended into Marina South Pier (MCP).

Currently, there are more than 40 launch operators and only a subset operate counter services at MCP and WCP, serving the business and consumer community to provide crucial services to calling ships, such as shipping agents, crew change, ship supplies, chandlery, ship inspections and bunker surveyors. Hundreds of transactions are managed every day currently requiring human-to-human booking, scheduling, and confirmation and payment processes, as well as the storing and retrieval of items, the majority of which are still manual.

> "Using a crawler drone, it is possible to measure the thickness of the hull at any point no matter how high, without scaffolding, making drone surveys far more practical and profitable

CALLING IN THE DRONES

The Korean Register (KR) has successfully completed its first hull survey using both a drone and crawler (a type of drone capable of climbing up and down walls) without scaffolds.

The remote inspection technology was used for the intermediate survey of the bulk carrier *Pan Global* and was completed with the assistance of POSSM Co, Korea's largest ship management company, and HST Technology, which provided the remote inspection technology.

KR's surveyors have been using remote inspection technology such as drones for surveys since 2017, with the equipment allowing the surveyor to inspect the vessel without requiring direct access.

Since the launch of the service, KR has increased the range of inspection tools used, offering customers a more efficient and safer inspection service, which complements the traditional ship survey system and meets industry requirements.

Ship surveys usually involve a "close-up survey" and a "thickness measurement" of the hull structures. But to complete the process, surveyors must climb scaffolding (poles and boards made into a temporary framework, used when working on the high parts of a ship). which can be higher than a five-story apartment building.

It has been possible to use drones to inspect the highest places, but a scaffold has still been required in order to complete the thickness measurement assessment, making the service inconvenient for most shipowners.

However, now using a crawler, it's possible to measure the thickness of the hull at any point no matter how high, without scaffolding, making drone surveys far more practical and profitable.

HULL INSPECTION SURVEY UNDERWAY. ON THE LEFT THE DRONE AND ON THE RIGHT, THE CRAWLER

COVERING ALL OPTIONS

Monitoring the condition of the hull is essential for ensuring a vessel operates at peak performance. As paint manufacturers continue to invest in new anti-fouling ranges, they are therefore keeping close tabs on their efficiency

Nippon Paint Marine is one company that has been seeking to improve the performance of its hull condition monitoring software, with the addition of the XSHIP performance tool to its KP Analysis fuel-saving system.

Nippon Paint Marine says that the ISO 19030 standard introduced four years' ago has been widely accepted in the industry as a means of judging the effectiveness of hull coatings.

The industry has had to make many changes over the years in order to improve the efficiency of hull coatings, but also ensure that they are compliant with environmental standards.

The decision to add the ISO 19030-compliant XSHIP methodology has already paid dividends, resulting in Singapore-headquartered shipowner Berge Bulk Maritime specifying the low-friction A-LF Sea coating for its fleet of bulk carriers, the company says.

Bill Phua, Nippon Paint Marine managing director, Singapore, comments: "Our enhanced hull performance measurement software enables the shipowner to have a continuous evaluation of the interaction between a vessel's hull and propeller. We can provide more precise data on how

the hull coating is affecting speed loss, fuel efficiency and emissions.

"Dependent on the coating applied, ship operators can benefit from significant fuel savings, but these annual savings reduce over time due to hull and propeller fouling. Vessel performance monitoring between two dry dock intervals can help maximise the coating efficiency and, as a result, lower fuel consumption and emissions."

The XSHIP software generates real-time management reports, weather reports and performance assessments.

"A monitoring system compliant with the ISO 19030 standard was a key factor in Berge Bulk Maritime's decision to apply A-LF Sea hull coating as part of its current drydocking programme," says Nippon Paint Marine director John Drew.

"The additional performance verification delivers further confidence to shipowners that an A-LF Sea application not only reduces a vessel's impact on the environment, but also results in energy and cost efficiencies."

Nippon Paint Marine has also developed a novel hull inspection tool that negates the need for divers or remotely operated vehicles. The underwater inspection of a ship's hull coating can now be performed by a single inspector on dry land or from another vessel.

The NPM Hull Monitor System uses state-of-the art GoPro camera technology attached to a 10m telescopic pole to quickly inspect the in-water condition of a vessel's antifouling paint. A live video feed is relayed to the operator's smart phone for real-time monitoring and recording. The entire set-up can easily be packed into a small case and carried as regular luggage on an aircraft.

Nippon Paint Marine technical manager Atsuhiro "Hiro" Yamashita says that using the device has reduced paint inspection timescales and associated costs considerably.

"The NPM Hull Monitor has already been deployed with several vessels' underwater hull coatings inspected using the device from shoreside and a small boat," he says. "With the limitation of the pole length, it might not be able to cover entire underwater surface of the vessel. However, the video image brought from the system was good enough to evaluate the underwater coating system as, in most cases, the areas around and a certain depth from the waterline show the most severe condition for underwater and antifouling coating systems."

HEMPEL ENHANCES RANGE

Coatings manufacturer Hempel, meanwhile, has launched five new antifouling solutions: Oceanic Protect+, Oceanic Flex+, Olympic Protect+, Olympic Flex+ and Olympic Protect.

Hempel's Olympic+ and Oceanic+ antifouling coatings have been used since 2009 and 2012 respectively and the introduction of the new, re-formulated products delivers an even higher performance through better control of the leached layer and an enhanced mechanical strength, the company says.

Coupled with this, higher volume solids, high dry film thickness per coat and lower Volatile Organic Compounds (VOCs) reduce costs, time and emissions during application. These new antifouling solutions are designed to suit different trading patterns and this ensures the best possible fouling protection in all trading conditions.

Commenting on the new products, Marianna Sioni, marine group product manager, antifouling coatings, says: "Hempel's antifouling product range caters for every vessel and every owner and we are proud that our Oceanic+ and Olympic+ range has been able to deliver through the years reliable fouling control at such an effective cost.

"Building on this success, we have invested in re-formulating these products to enhance their performance so that we can continue to offer proven solutions for a low upfront investment, supported by Hempel's world-class global service. In short, this is proven antifouling performance reinvented".

All five reformulated products take advantage of Hempel's reinvented Smartfibre technology, which delivers a stronger and smoother hull. Each coating now contains a 20% higher fibre content, which significantly improves its mechanical strength and allows the increase of the hydrophobic characteristics of the products — leading to reduced leached layer thickness. As water flows over the coating, enhanced

HEMPEL REACHING 2,000 APPLICATIONS WITH HEMPAGUARD X7


HEMPEL OCEANIC OLYMPIC

fibres, which fit parallel to the surface, ensure a smooth and uniform removal of the leached layer, which facilitates a well-controlled polishing rate and biocide release. This enables the coating to achieve a smoother and fouling-free hull throughout the service period.

JOTUN SIGNS UP WITH HYUNDAI

Hyundai Heavy Industries (HHI), which controls about 10% of the global newbuild market, has reached agreement with container line giant HMM and marine coatings supplier Jotun to utilise Jotun's Hull Skating Solutions (HSS) on a series of newbuilds.

The agreement, signed in December, will see Jotun HullSkater proactively inspect and clean vessel hulls during outfitting to ensure optimal environmental performance and protection.

Jotun launched HSS to the market in 2020, effectively rewriting the rulebook for hull cleaning and performance. HSS consists of the unique HullSkater, which adheres to vessels and gently removes all biofouling for an "always clean" hull, the specially developed SeaQuantum Skate antifouling, and proactive condition monitoring utilising a proprietary big data algorithm tailored to individual vessel needs.

"The combination is ideally suited to vessels facing the most challenging biofouling conditions," explains Geir Axel Oftedahl, business development director at Jotun. "In that respect, it is perfect for protecting newbuilds at outfitting and trial stages."

He continues: "HSS cleans hulls before biofouling takes hold, eliminating associated drag and fuel consumption and emissions, while protecting the vessel coatings, and safeguarding ecosystems from the potentially invasive species that look to populate them.

"Biofouling is a particular problem when vessels are idle for long periods, such as during outfitting, and this can cause major issues when trialling initial performance before delivery."

In November last year, Jotun announced plans to launch its Jotacote Universal S120 primer to the worldwide market after three years of success in the north-east Asian and west European market.

Jotacote Universal S120 is the world's first PSPC-approved single coat, solvent-free system, with approvals since 2017, Jotun explains. It has now been applied to a variety of vessels including 12 delivered vessels with six more under construction and an additional four projects secured.

Customer feedback, Jotun reports, has so far exceeded all expectations.

Jotacote Universal S120 is the first of its kind on the market, featuring Covallox technology that incorporates covalent bonds in its chemistry on top of the already existing hydrogen bonds typical of conventional epoxy.

AN ALTERNATIVE APPROACH

Despite the current challenging working environment, the design and construction of new prototypes has been continuing in shipyards – and on drawing boards – as the drive towards more eco-friendly ships gathers pace

GAGARIN PROSPECT, THE WORLD'S FIRST AFRAMAX TANKER DESIGNED TO RUN ON LNG, IS ONE OF 40 DUAL-FUELLED SHIPS ALREADY DELIVERED OR UNDER CONSTRUCTION AT HHI GROUP. THE DNV GL CLASSED VESSEL IS OWNED BY LEADING RUSSIAN SHIP OPERATOR SOVCOMFLOT (© HHI GROUP)

Classification society DNV GL and shipyard HHI Group have teamed up to embark on the development of future-proof tanker designs. In a recent webinar, they presented the results of new joint research and explained how eco-friendly maritime solutions can help shipowners and managers to cope with stricter environmental regulations.

The joint research was initiated by a memorandum of understanding (MOU) under the terms of which DNV GL and HHI agreed to develop low- and zero-carbon solutions for shipping.

"Shipowners are faced with many uncertainties in the rapidly changing marketplace," says Seong-Yong Park, COO of HHI Group. "We believe our research results, including proven engineering solutions and alternative fuels, will support them in developing their future strategy for ship operations and fleet renewal."

Recent regulations have been introduced covering the greenhouse gas emissions from vessels, including the introduction of the design index for existing vessels (EEXI) and a new Carbon Intensity Indicator, which are due to enter into force in 2023. To respond to these regulations, HHI introduced a range of eco-friendly ships that are equipped with alternative fuel technologies and energy-reducing systems, among them 40 liquefied natural gas (LNG) dual-fuelled ships already delivered or under construction.

The International Maritime Organization is strengthening environmental regulations, including a 50% reduction in ship greenhouse gas emissions by 2050 compared to 2008.

By applying DNV GL's data-based carbon robust model to its very large crude carrier and MR tankers, HHI Group found that an LNG fuel propulsion system in combination with advanced energy saving devices (ESDs) can enable a vessel to meet the new Carbon Intensity Indicator over its expected lifetime.

"It is important to use alternative fuels such as LNG and technological solutions that are available now, and not wait until 2030 or beyond", says YH Chung, head of the initial design department at Hyundai Mipo Dockyard. "Our joint research has shown that LNG as ship fuel combined with other energy saving devices can make a vessel both environmentally and economically fit for the next two decades at least."

"Since ESDs mainly have an impact on fuel consumption during sailing, the benefits are greater for large vessels such as VLCCs, which spend more days operating at sea," explains Christos Chryssakis, business development manager at DNV GL — Maritime. "These ships are also less sensitive to price variations when it comes to selection of LNG as fuel. This is because the capital expenditures are paid back faster due to a higher fuel consumption."

For smaller vessels with lower fuel consumption, such as MR tankers, a higher price differential between very low sulphur oil (VLSFO) and LNG was required to pay back the initial investment. Therefore, these vessels were more sensitive to volatile fuel prices, he adds.

"We have no clear vision of the zero-carbon ship in deep sea shipping yet," says Trond Hodne, senior vice president of business development at DNV GL — Maritime. "As we work hard towards the zero emission vessel, the industry also needs to make newbuilding decisions today."

NEW CLASS RULES FOR LNG

The Korean Register (KR) has developed new class rules that completely revise the existing structural rules for membrane-type LNG carriers.

The new class rules apply the concept of Equivalent Design Wave (EDW) based on direct load analysis to determine structural arrangements and scantlings that meet the structural strength, buckling and fatigue strength criteria for various load scenarios, and re-verify it by applying direct structural analysis.

The newly developed rules cover not only the general sizes of LNG carrier, but also the ultra-large LNG carriers by analysing and reflecting the motion characteristics of these vessels. The new rules have also been developed to fully comply with the International Gas Carrier Code.

In order to test and improve the rules, KR has conducted an impact analysis on an LNG carrier working in collaboration with Hyundai Heavy Industries, Daewoo Shipbuilding & Marine Engineering, and Samsung Heavy Industries and applying world-class LNG carrier building technology. As a result of verifying the rules for the latest design of 170,000m^3 class membrane-type LNG ship, each shipyard also evaluated the rules as highly competitive rules in terms of structural safety and optimised design.

It is anticipated that the structural design time for LNG carriers will be drastically shortened through the inclusion of the new rules in KR's structural scantling and strength evaluation program "SeaTrust-HullScan", which is already widely used by many design companies and shipyards.

"The new rules for LNG carriers will be applied to membrane-type LNG ships over 150m in length and our LNG technology development work will continue as we work alongside leading shipyards both domestic and abroad, providing the best technical services possible for our LNG customers," says Kim Yeon-tae, executive vice-president, Technical Division, KR.

FUTURE-PROOF BULKERS

Shipowners face considerable uncertainty when picking engines and fuel systems for a newbuilding.

The design must ensure that a ship remains compliant and competitive over its lifetime to meet or beat greenhouse gas (GHG) emissions regulations and targets.

To help shipowners choose, DNV GL's latest "Maritime Forecast to 2050" has developed 30 scenarios covering varying assumptions about regulations, fleet growth and fuel prices across the three decarbonisation pathways described in its GHG Pathway Model.

Briefly, the pathways, listed from the slowest to quickest decarbonisation, are "no ambitions", "International Maritime Organization ambitions" and "decarbonization by 2040".

"Applying the scenario and pathway assumptions to designs for a new panamax bulk carrier as a case study shows how modelling commercial robustness can stress-test engine and fuel-system options across a wide range of possible decarbonization futures," says Tore Longva, principal consultant, DNV GL — Maritime and lead author of the report.

"Similar robustness analyses could be performed for any segment in the world fleet."

The panamax case study applies DNV GL's three-step Carbon-Robust Model framework for future-proofing ships. The framework first defines key performance indicators (KPIs) and selected designs.

It next models the impact on KPIs for each design in each scenario. Finally, it compares the results of the modelling.

To read the full story , visit: https://www.dnvgl.com/expert-story/maritime-impact/Finding-the-best-design-for-a-future-proof-bulker.html

YARD BOOST FOR MEXICO

Fincantieri has signed a letter of intent with the Ministry of Economic Development and Labour of Yucatán State in Mexico to participate in the design and construction of a new ship repair, conversions and maintenance yard.

The facility will be located within the expansion and modernisation of the Port of Progreso. Fincantieri will be granted a 40-year concession for the exclusive management of the new yard.

The project envisages two masonry dry docks, the largest in the Americas, able to handle ships up to 400m in length, particularly cruise ships, large cargoes and oil and gas vessels, which need complex operations.

The yard will also have a lifting platform for units up to 150m in length, docks, cranes, workshops, special equipment, offices and warehouses.

Initially, the creation of the yard will be carried out by the government of the State of Yucatán, and it will start by the first half of this year, for completion by 2027.

The government will directly manage initial works through a special purpose company that will handle the dredging and the construction of the infrastructures and main plants.

Fincantieri will carry out the later stage, also involving other partners, building the advanced facilities, notably workshops and lifting equipment, and installing the equipment and finally starting activities.

Mexico exports close to $400bn of goods every year, importing around $350bn. A considerable volume of this import/export is made through shipments by sea.

The new Progreso shipyard will be strategically placed to serve operators in the region, benefiting from the nearby Yucatán navigation channel, a natural outlet to the Atlantic Ocean.

BREAKTHROUGH DESIGN

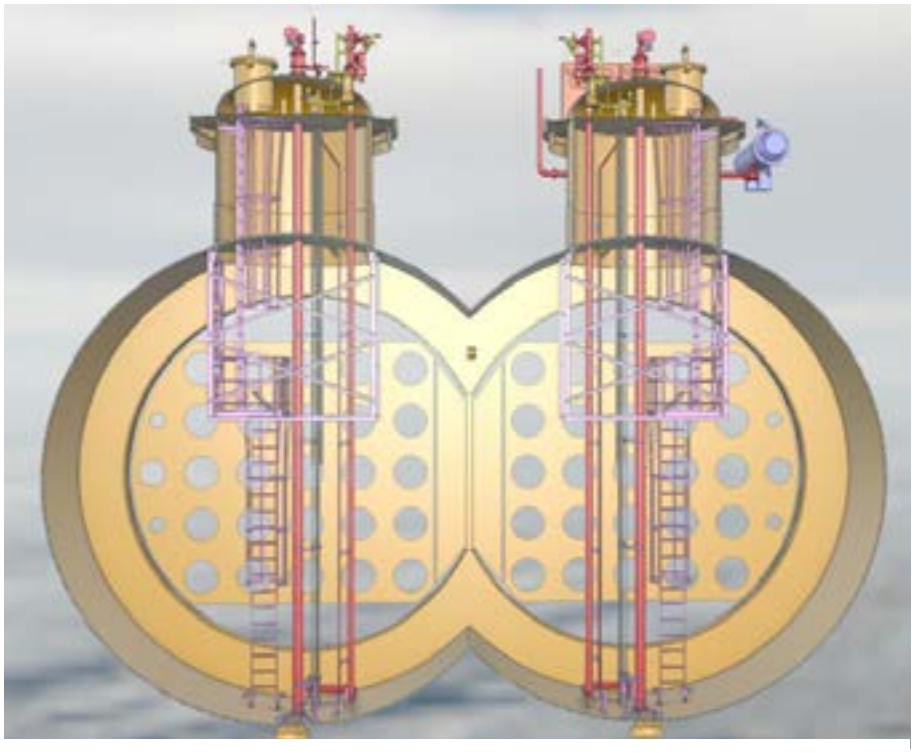
Automation, gas and system integration specialist Høglund Marine Solutions, in collaboration with Oldenburg-based HB Hunte Engineering, has developed a new tank concept for liquid petroleum gas (LPG) and CO_2 transportation, based on existing, proven technology.

This new system more than doubles current vessel cargo capacity to transport liquefied CO_2, the companies say, representing a vital step forward in the development of maritime transport solutions for the expanding carbon capture and storage (CCS) market, which will require maritime CO_2 transport to scale up rapidly.

Høglund and HB Hunte's transportation solution uses a unique bilobe tank with a capacity of 8000cbm, drawing on Cargo Handling System (CHS) and tank designs that they have previously proven in LNG, LPG and other sectors. The development of this solution came following a proof-of-concept request from gas technology experts.

The solution is readily available for use in existing tanker designs. It more than doubles the transportation capacity of liquid CO_2 over current vessel capacity without the size, weight and stability concerns that would have come from a higher capacity "monolobe" design. It can be quickly adapted for LPG, giving extra flexibility to a vessel that uses them.

The tank configuration has a positive impact for the use of different alternative material and reasonable fabrication processes while complying with IGC Codes and conventional rules. This allows the production of a solution that is substantially lower cost and risk than the conventional large diameter cylindrical type offering the same capacity.

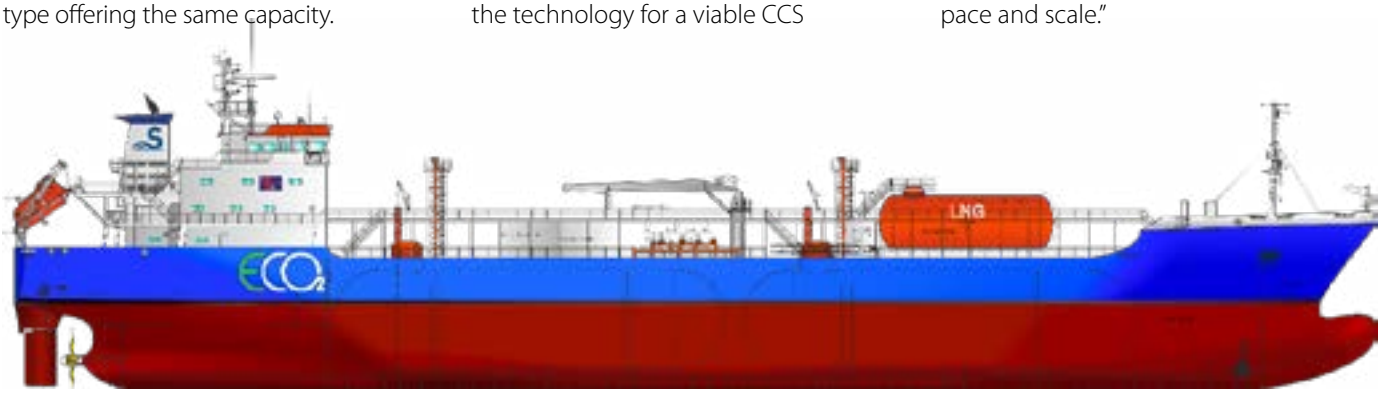


THE BILOBE TANK HAS A CAPACITY OF 8000CBM AND MORE THAN DOUBLES THE TRANSPORTATION CAPACITY OF LIQUID CO_2 OVER CURRENT VESSEL CAPACITY WITHOUT THE SIZE, WEIGHT AND STABILITY CONCERNS THAT WOULD HAVE COME WITH A HIGHER CAPACITY "MONOLOBE" DESIGN (© HØGLUND)

Currently, the maximum capacity for transporting liquefied CO_2 is approximately 3600cbm, or roughly 1770 tonnes in dedicated CO_2 tankers predominantly with specialist operators, Larvik shipping, which has been transporting CO_2 since 1988. However, as CCS chains develop, maritime transportation capacity needs to increase significantly, requiring innovation in tank design and cargo handling systems.

David Gunaseelan, vice president of sales and marketing at Høglund, comments: "With the global economy facing more pressure to reduce its carbon emissions, we must develop the technology for a viable CCS chain,and new ways of solving the complex challenges that come with upscaling CO_2 transportation. I'm thrilled to work with HB Hunte to develop a readily viable solution, which significantly broadens our horizons and demonstrates the cross-sector thinking needed to reduce atmospheric carbon levels in as many ways as possible."

HB Hunte's director of sales and business development Wolfgang Franzelius adds: "CCS is a core technology area in realising the important goal of a net-zero economy. With new lines of finance emerging that support decarbonisation, we must develop the technology to achieve it at pace and scale."



THE SOLUTION IS READILY AVAILABLE FOR USE IN EXISTING TANKER DESIGNS AND REPRESENTS A VITAL STEP FORWARD IN THE DEVELOPMENT OF MARITIME TRANSPORT SOLUTIONS FOR THE EXPANDING CCS MARKET (© HØGLUND)

RISING TO THE CHALLENGES

From refrigeration failures to cyber threats, ports and dry cargo operators continue to face a number of issues when it comes to the safe handling of goods, but a number of organisations are providing solutions and safety advice

Combating cyber threats is increasingly important for the shipping industry as cyber security breaches have resulted in considerable lost revenue for a number of large maritime concerns.

The cyber risk has resulted in a number of new initiatives. HudsonAnalytix recently announced a partnership with the US Maritime Transportation System Information Sharing and Analysis Centre (MTS-ISAC). HudsonAnalytix' risk management division HudsonCyber will assist the centre with cyber threat information in order to reduce the risk of cyber breaches.

HudsonCyber warns that with "thousands of ports around the world receiving more than 50,000 commercial vessels making over five million port calls per year, the maritime industry is acutely vulnerable to cyber attackers seeking to exploit vulnerabilities in their interconnected systems".

Its CyberHelm technology solution can help protect maritime operators from cybersecurity threats by proactively avoiding them or protecting them from infecting and damaging technologies and operating systems.

Whether onboard vessels or shore-side, CyberHelm detects system

vulnerabilities and potentially imminent attacks before they hit. It delivers a complete analysis and security recommendations related to each asset, no matter the organisation's size, the characteristics of its shore-side infrastructure, the diversity of its fleet, or its geographic disposition.

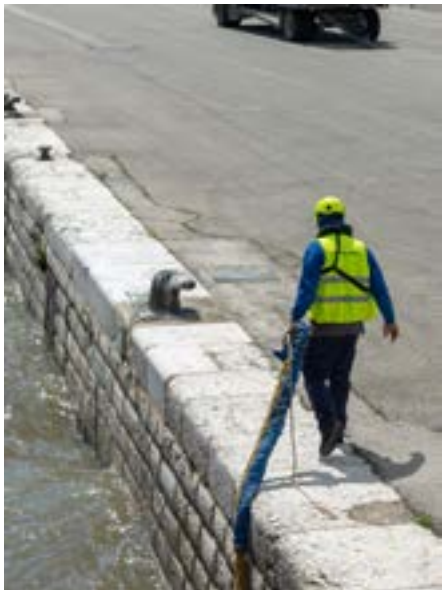
According to Max Bobys, vice president of HudsonCyber: "Although many maritime operators are making strides in implementing cybersecurity capabilities, effective and sustained cyber risk management remains a challenge. In today's hyper-connected environment, where cyber threats are only constrained by threat actors' imaginations and successful attacks are measured in seconds, information sharing is critical."

The centre was formed a year ago by a group of US-based maritime critical infrastructure stakeholders to promote cyber security information sharing throughout the maritime community. Industry leaders representing seaports, vessel owners and operators, and terminal operators recognised the need to improve cybersecurity resiliency in their ecosystems.

Scott Dickerson, the centre's executive director, explains: "We are excited about this partnership with HudsonCyber. Adding the capability that CyberHelm offers to the services the MTS-ISAC already provides our stakeholders allows the MTS community to more proactively manage cyber risk.

"As we have seen with the number of reported incidents impacting maritime stakeholders around the world in 2020, threat actors are taking advantage of maritime stakeholders. Now, our stakeholders can complement the MTS-ISAC's rapidly shared cyber threat information with a deeper understanding of what infrastructure may have been targeted and is at risk.

"As our customers seek to build closer relationships across their entire maritime ecosystem, these capabilities can then be leveraged to better secure common infrastructures, interdependencies, and communication paths between owners/operators and their key suppliers, vendors, and service providers," he concludes.



PLATFORM PUSHES SAFETY

Learning from accident and near misses is essential for improving ship safety. The Hellenic Marine Environment Protection Association (HELMEPA) recently presented its Voluntary Incident Reporting Platform (VIRP) to representatives of the association's member companies.

The platform was developed in collaboration with member Dynamarine as part of the three-year project entitled "Enhancing the Understanding of New and Enduring Challenges in Maritime Safety Culture in the Eastern Mediterranean", which is implemented by HELMEPA and Lloyd's Register in Greece and CYMEPA in Cyprus, with the support of Lloyd's Register Foundation.

The aim of the initiative is for shipping companies to report, under complete anonymity, to the platform incidents and near-misses from their ships that could have very serious consequences (High Potential Incidents) and through the sharing of lessons learned, avoid the repetition of the same mistakes and incidents. The expansion of the platform in the coming years is planned to include accidents and incidents of fishing vessels and recreational boats.

In an online presentation, HELMEPA's director general Dimitris Mitsatsos referred to the importance of incident reporting in establishing a maritime safety culture.

REDUCING PERISHABLE LOSS

International freight transport and logistics insurer TT Club has drawn attention to the action required to reduce perishable cargo losses and refrigerated container failures and damage

Analysis of the specialist insurer's claims records for transport operators over the past three years shows temperature-controlled incidents ranking in third place.

Almost 30% of these incidents involved a miscommunication of operational instructions on care of the cargo, with a further 23% down to temperature setting errors. Reefer equipment failure or damage accounted for a quarter of the claims.

TT continues in its attempts to minimise losses for both its members and all those involved in the cool supply chain with publicly available guidance documents such as "Stop Loss — Temperature Controlled Cargo", and increasingly via online webinars, one of which was held recently.

"Our own experiences and the data drawn from our claims history was reinforced by over a third of webinar attendees, who when asked their perception of the primary risk factors, pointed to communications errors with ambiguous or incorrect instructions passed between supply chain stakeholders," comments Mike Yarwood, TT's loss prevention managing director.

The sensitivity of many commodities transported under temperature-controlled conditions puts the care of the product both before and during transit as a paramount concern.

During TT's webinar, Carsten Jensen, a consultant and surveyor specialising in perishable goods transport, gave an insight into the five key aspects that impinge on loss prevention: product quality; preparation of the goods; correct packaging and stowing; attention to temperature irregularities and prolonged storage and transit.

"Clearly a number of these processes are outside the control of forwarder, carrier and terminal operator," says

Yarwood. "But as the demand for unitised transport of perishables continues its upward trend, it is vital that the transport links in the chain become more informed about all the relevant processes to improve the collaborative efforts of all stakeholders."

GOOD VENTILATION ESSENTIAL

Proper ventilation in bulk carriers is essential to prevent damage to the cargo and to ensure the safety of the crew. To provide ship's masters and crew with an understanding of different ventilation requirements for bulk cargoes, Intercargo, The Standard Club and class society DNV GL, have launched a new ventilation guide.

Covering how and when to ventilate to control humidity and to remove flammable and toxic gases released from cargoes, the guide also looks at fumigation issues and the entry of ship's personnel into confined spaces are addressed. It also sets out the regulatory requirements related to ventilation.

Finally, several case studies illustrate practical examples on what can go wrong when correct ventilation and stowage procedures are not followed.

"Cargo ventilation is an often overlooked, but essential part of avoiding financial risk and danger to the crew and vessel," says Morten Løvstad, business director — bulk carriers, at DNV GL — Maritime. "With this guide, we have worked together to examine some of the most common ventilation systems and provide some clear advice on how to deal with problems. We hope this will help to build greater awareness of these issues within the segment."

"The guide will provide ships' crew with a practical understanding of when to ventilate and the reasons to do so," adds Ed Wroe, technical manager at Intercargo. "Additionally, it clearly shows the statutory requirements of cargo and cargo hold ventilation. Working together, Intercargo, DNV GL and The Standard Club were able to provide their own areas of expertise to this publication."

In today's market, ships carry a wide variety of dry cargoes, all with different ventilation requirements depending on the cargo characteristic, voyage, and the weather conditions.

"Ventilating the cargo is not merely allowing the outside air into the cargo hold, but it involves a precise process where a number of factors need to be considered," says Yves Vandenborn, director of loss prevention, at the Standard Club. "Failing to adhere to the requirement may cause cargo damage and result in large losses.

"Standard Club continues to see high numbers of wet cargo damage claims, caused either by fresh water or seawater, but the most serious damage is due to condensation. Inadequate ventilation and poor stowage may result in caked and mouldy dry cargoes, or rusty steel cargoes. The guide aims to provide a clear and concise understanding of the ventilation requirements for various cargoes and will assist in preventing cargo damage caused by poor ventilation practices on board dry cargo ships," Vandenborn explains.

PRIVATE INVESTIGATIONS

The US arm of insurers Thomas Miller has launched the Fairlead Group, a web-based platform which provides end-to-end management of the private investigation process.

Thomas Miller Americas, along with the Robison Group, has developed an integrated system enabling users to assign and obtain investigative services, all with the aim of generating consistently credible, reliable and useful reports.

The platform provides an end-to-end management process, which allows users to store their entire caseload and to access and analyse data in a user-friendly way.

The new platform was borne out of a frustration with the existing surveillance product in the US maritime industry, the participants say.

There are three aspects to Fairlead Group's offering: first, a desktop open source investigation of the plaintiff's online profile and public records; second is physical surveillance; third is a robust Special Investigations Unit.

These offerings provide an expansive suite of services and investigative capabilities to the benefit of our clients.

A variety of factors, from an aggressive plaintiff's bar, the right to a jury, plaintiff-friendly statutory law and an absence of a cap on awards, has created an exposure to high awards in the US, the Group says.

PORTS POWER UP IN ECO PUSH

In their quest to join the green revolution, ports across Germany are adding eco-friendly power to their offering

The port of Kiel has been showcasing its new onshore power supply plant at the Ostseekai Terminal, which the port says is "an important milestone on the way to becoming the most ecological port in Europe" .

The plant ranks among the most powerful ones of its kind and will supply Stena Line's ferries with eco-power in a first step. The plan is to step up the use of on-shore power at the port and, at present, two vessels can take eco-power at once.

Dr Dirk Claus, managing director at the port, says: " As from January, we will cover 44% of the energy demand by the vessels berthing in the port of Kiel in an emission-free and climate-neutral way. In two years, it is supposed to be 60-70%. Through this, Kiel takes a leading role."

The port redesigned the port apron in Ostuferhafen last year, which is the freight and logistics centre on the fjord. There is now an expanded pre-stacking and stand-by area of three hectares for trucks, trailers and passenger cars.

The State of Schleswig-Holstein provided a grant of €5.44m last year, with state premier Daniel Günther commenting: "Located on

the interface between continental Europe and the Baltic Sea Region, the ports of Schleswig-Holstein are an integral part of European transport chains. With its modern and efficient port infrastructure, the port of Kiel contributes to strengthening Germany's competitive ability and increasing the growth potential of our economic area."

The construction work for the new port apron took two years and required an investment of about A grant of €7.78m. While shifting traffic to sea routes, the port also closely co-operates with rail company DB Netz in order to enable an increasing level of transshipment by rail. On a local level, the new on-shore power supply plants and the further electrification of port operations are important components of the climate protection strategy.

The project to redesign the port apron included dismantling three hall areas of the former grain silo, excavation and road works, as well as drainage, lighting and security measures and the connection of the area to the infrastructure. Through the new and generous port apron, it has been possible to merge formerly separate pre-stacking areas, shorten distances and gain more space for trucks, buses, trailers and passenger cars.

Furthermore, IT solutions have been developed to accelerate handling processes at the gate, which also allow truck drivers to reduce personal contact. Port managing director Dirk Claus says: "Even under current circumstances, the Ostuferhafen operates in a reliable and safe way. The port of Kiel has proven its systemic importance regarding the transshipment of cross-border freight."

BREMEN FREEZES CHARGES

To ease pressure on port business during the coronavirus pandemic, charges at the ports of Bremen will remain at current levels this year. Claudia Schilling, Senator for Science and Ports, commented on announcing the price freeze that "some areas of the port business have also been hit severely by the corona pandemic. On resolving these changes, we not only wish to ease the pressure on port business, but also to create an incentive for more ships to call at the ports of Bremen. The port and logistics business is the key lever of Bremen's economy and I will do everything in my power to ensure that this remains the case."

Changes will also apply to inland shipping. To date, barge operators have had to pay port charges if they loaded or discharged cargo. If they use the port merely as a berth, however, they pay berth charges. In future, only one standard tariff will apply and this will also include the use of onshore power facilities.

Schilling says: "This creates a transparent and fair charging system, which is calculated on the basis of the exact days. As it can be assumed that inland shipping is also unlikely to emerge from the crisis unscathed, we will also be introducing a discount for frequent calls. In future, an increase in the number of calls compared with the preceding year will entitle the ship operator to a discount equivalent to that increase. Customers who regularly call at the ports of Bremen can also apply for an annual flat rate."

Bremen's Senate announced plans to create comprehensive additional shore power supply facilities at the region's ports last year. The plans envisage the provision of eight stationary shore power supply units for maritime shipping and two additional connections for inland shipping by the year 2023.

Schilling adds: "The creation of shore power connections for maritime shipping is another step forward and an important milestone in our endeavours to become a green, climate-neutral port. The electricity for these permanently installed shore power connections will come entirely from renewable energy sources."

Prior to the adoption of the shore power resolution, Bremen ports and the Fischereihafen operating company had already identified suitable locations both in the Überseehafen area in Bremen itself and at Fischereihafen in Bremerhaven and conducted detailed assessments of the technical feasibility and the costs involved. By the end of 2023, two shore power supply units will be installed for maritime shipping in the container throughput area in the city of Bremen, another one in the ro-ro port area and one at the cruise terminal. At Fischereihafen, there will be three facilities for government vessels and one for research shipping.

To date, the provision of shore power at the ports of Bremen has focused on port and service vessels as well as inland shipping. Most of the berths for these sectors in Bremen and Bremerhaven have already been equipped with the necessary plant. The new investment programme will create another two facilities for inland shipping at Bremen's Industriehafen, so that all the relevant mooring points for river traffic will then be equipped with shore power connections.

Total investment for all 10 new connections will amount to €32.4m, half of which will be funded by the Federal Land of Bremen, the other half by the federal government on the basis of an administrative agreement to be signed between the federal and state governments.

The Senator has also appealed to shipowners to design and operate more eco-friendly fleets generally. This includes retrofitting as many vessels as possible, as soon as possible, or commissioning new ships with the appropriate equipment for the use of shore power.

"We can only achieve our goal of clean shipping if everyone involved makes a concerted effort," says Schilling. "The more ports that provide shore power, the more cost effective it will be for the shipping companies to adapt their vessels." It is even more important that shipping as a whole made more effort to achieve emission-free shipping, she says.

BOOST FOR BULK CARGO

Italian ports are undergoing something of a renaissance as investments and acquisitions breathe new life into some of the country's busiest regions

Moves are afoot to create the largest Italian port operator in the dry bulk sector as Italian infrastructure fund F2i SGR has announced plans to buy port terminal operator MarterNeri Group in Monfalcone and Livorno from VEI Log.

The acquisition will be carried out through F2i Holding Portuale (FHP) and MarterNeri's operations will be integrated with those already carried out by FHP in the four terminals in Carrara, Marghera and Chioggia that were acquired in 2019.

The consolidation into FHP will create the largest Italian port operator in the dry bulk sector with operations in the northern Adriatic and Tyrrhenian seas, more than 7m tonnes of cargo handled annually, seven terminals under management, 200 pieces of lifting and handling equipment, warehouses and interconnecting infrastructure.

SOURCE: VENICE LNG

Some 70% of Italian imports and 50% of exports are made by sea, with an annual value of €160bn.

With this in mind, F2's industrial blueprint, which may be further expanded in the coming months, also includes ground logistics by rail, an area in which F2i has recently invested by acquiring CFI (Compagnia Ferroviaria Italiana), the largest independent operator in Italy, the fund comments.

"The dry bulk port logistics sector is strategic for the Italian economy, but it is fragmented and is not integrated with ground logistics," says Renato Ravanelli, chief executive of F2i SGR.

"Over the past year, we have seen considerable interest from foreign, European and non-European operators and institutions in our national ports. The Italian coastline is increasingly becoming a central focus in the new trade landscape and as a result of the geophysical evolution in transport."

GREEN LIGHT FOR LNG STORAGE

The construction and operation of a liquefied natural gas (LNG) storage terminal at the port of Marghera has received the green light. Venice LNG, a subsidiary of the Decal Spa Group operating in Porto Marghera for over 60 years, welcomed the news that the government had given the go-ahead to the new storage facility.

With a capacity of 32,000m^3, the Venice LNG storage will be built in a brownfield area along the South Industrial Canal of Porto Marghera with the ultimate aim of reducing SoX and NoX emissions.

Emissions in the environmentally sensitive area of Venice have long been an issue, not least because attempts to introduce cold ironing in Venice for visiting cruise ships fell foul of the fact that on-shore power supplies were not green in themselves.

Plans are also afoot for the use of non-polluting materials, the mitigation of dust and noise emissions during the construction phase, an Environmental Monitoring Plan, and the implementation of procedures to limit waste production.

The project is being promoted and supported by the North Adriatic Sea Port Authority and co-financed by the European Commission under the Connecting Europe Facility initiative for a total of €18.5m. LNG will arrive at Venice LNG storage terminal by small- and medium-sized LNG carriers and will be distributed on tank trucks, ISO-tanks and barges.

HHLA GOES FOR GROWTH

The acquisition by Hamburger Hafen und Logistik (HHLA) of 50.01% of multi-function terminal Piattaforma Logistica Trieste (PLT) has been completed. Operating as HHLA PLT Italy, the handling facility is expected to start extended operations in February.

Following approval by the Italian Council of Ministers, HHLA can commence operations at its terminal in Trieste.

Angela Titzrath, chairwoman of HHLA's executive board, says: "We're delighted that the purchase of the majority stake has now been completed. At the contract signing in Trieste last year, our commitment at the Adriatic port was met with great approval, especially from Italy.

"Since then, a team from HHLA International has been working intensively on integrating the Trieste terminal facility into the HHLA Group. Together with our Italian partners and our workforce, we want to expand HHLA PLT Italy to become an important southern hub within our port and intermodal network."

> With HHLA PLT Italy, HHLA is positioning itself in a growing market that offers good opportunities for development, including the opportunity to actively participate in and help shape new and changing cargo flows

Francesco Parisi, chief executive of the Francesco Parisi Group, a co-shareholder of HHLA PLT Italy, says: "We are very glad to have HHLA on board. This provides PLT and the Port of Trieste with a very exciting prospect of growth.

"We are grateful to HHLA for the strong support given to PLT already in the past months. This is a great incentive to work hard together to make it a success story."

The HHLA PLT Italy terminal facilities are within the Free Port of Trieste and take up a total area of 27 hectares. In the northern section of the facility, mainly general cargo transports are already being handled and logistic services provided. Container and roro traffic will be handled in the newly developed southern section.

A 35m-wide ramp is available for roro handling and will process the newest generation of roro ships deployed in the Mediterranean. Container throughput will be carried out on the quay side with mobile harbour cranes and in the storage area with reach stackers.

The first mobile harbour crane has already been installed. An identical crane will be delivered in the first quarter of this year.

Kalmar ,meanwhile has signed a contract with PLT to supply four Kalmar Eco Reachstackers for its new terminal at the port. Delivery is scheduled for the beginning of the second quarter of the year.

PLT's strong focus on environmental issues such as emissions and noise reduction was a key driver behind selecting the Kalmar Eco Reachstacker. The machines, the first of their kind to be delivered to a customer in Italy, will have a lifting capacity of 45t and will be equipped with extra features to reduce noise, including an insulation kit and soft-landing function with ultrasonic sensor.

In comparison to older machines, the Kalmar Eco Reachstacker consumes up to 40% less fuel, helping operators to cut fuel costs and emissions while matching the productivity levels of machines with much larger engines.

Marco Tosi, country director, Kalmar Italia says: "The Eco Reachstacker demonstrates our commitment to developing solutions that help customers to minimise their environmental impact while improving productivity."

The strategically relevant position of the Port of Trieste on the Adriatic allows

for excellent growth opportunities in hinterland transport. The multi-purpose terminal has its own rail connection —HHLA rail subsidiary Metrans already connects the Port of Trieste with its European intermodal network.

The Adriatic region has been developing very dynamically in the past few years. As the northernmost port in the Mediterranean, Trieste is the southern gateway to central and eastern Europe.

With HHLA PLT Italy, HHLA is positioning itself in a growing market that offers good opportunities for development, including the opportunity to actively participate in and help shape new and changing cargo flows.

RAVENNA GEARS UP

A major contract for the construction of the Ravenna Port Hub in Italy has been awarded to a consortium that includes DEME's subsidiary Dredging International and Italian construction company Consorzio Stabile Grandi Lavori.

The first phase of the project includes the excavation of 5 million m^3 of sediments in the outer and inner channels, deepening the port up to -12.5m, reconstruction of the existing docks over a length of 6.5km to adapt them to the new depths and the construction of a 1,000m quay for the Peninsula Trattaroli, which serves a new port area.

With a total value of €197.8m, the project is financed by CIPE (the Italian Inter-ministerial Committee for Economic Planning), the European Investment Bank, European Union and the Port System Authority.

This ambitious project aims to develop the necessary port infrastructure to handle larger vessels of 75,000dwt and container ships of up to 8,000 TEU, as well as higher traffic volumes. This will have significant socioeconomic effects in the region. Dredging works are due to get underway in the first quarter of this year.

DEME has a long-established presence in Italy and a strong track record. Currently, the company is executing several marine projects in the country, including those in the ports of Salerno and Augusta (Sicily).

CHINA STEAMS AHEAD

China has continued to be a major driver in the bulk market during the course of 2020 — although some dry bulk commodities have performed better than others in a turbulent year for the markets

BIMCO has revealed that Chinese imports were close to 50% in market-share terms when measured in tonne-miles and, while total tonnes transported by the dry bulk shipping industry fell by 1.3% to 5.49bn tonnes, from 5.56bn in 2019, this was still higher than the previous year's figures.

Coal is the only one to have fallen — down 102.2m tonnes from 2019 (-7.4%). However, iron ore and agricultural goods rose last year, up 36.9m tonnes (+2.3%) and 33.3m tonnes (+4.9%) respectively.

Growth has been driven by the construction market, with cement seeing a 13.4% increase between 2019 and 2020. China accounted for half of this 21.5m tonne increase, with seaborne cement imports rising by 52.2% (12.7m tonnes).

At the other end of the scale, the largest percentage drop came from forestry, down 8.9%, or 33m tonnes. Half of this drop comes from wood in rough, down by 14.9 million tonnes (-17.4%). 10.6m tonnes of the 14.9m loss came from lower imports into China.

"For dry bulk shipping, the year can be divided in two, with lower

volumes and earnings in the first half followed by a recovery in the second, as China split from the rest of the world, boosting tonne and tonne mile demand, and sending freight rates to profitable levels. June was the turning point as volumes reached their highest point of the year, and earnings jumped, especially for Capesize ships," says Peter Sand, BIMCO's chief shipping analyst.

China has been stockpiling every kind of commodity at a "mind-blowing" rate, with the country's imports propping up an overall fall in trade volumes globally, bulk terminal operators and shippers were told recently at a virtual conference organised by ABTO.

"The Impact of covid-19 on Bulk Markets and Terminal Operations" webinar was held in October 2020. In an introductory presentation to kick off the series of seminars, Sand told members: "There is one nation at the centre of the universe [for the bulk shipping industry] and that country is China.

"If you see the impact of China and its stocking up of basically every kind of commodity, but for coal, it is mind blowing. And it is not only the volumes, it is also the distances. China is basically grabbing whatever it can from all over the world."

Sand said that China's "craving for agribulks" in particular was having a "very positive" effect on the dry bulk sector, which is shifting short-haul trades to long-haul trades.

"If we go by Suez Canal transit numbers, we have seen a 26% increase in the first three quarters of the year, I mean, that is mind blowing in many ways. It also illustrates the purchasing power of China. We know China has the muscle, but from the stimulus packages they have, it did not look as if the dry bulk sector would benefit to this extent. It is absolutely second to none."

However, the dominance of one country can be problematic. Sand warned that some bulk terminal operators and shippers may not benefit from the growth in trade volumes as China looks to establish what he called the "Chinese conveyor belt" — China's own fully formed supply chain.

Commenting on trade relations with China, he said: "After three years of the trade war, the US has seen the highest export of soya beans in its trading history.

In the day's second presentation, Rahul Sharan, analyst at shipping consultant Drewry, informed ABTO members and delegates that dry bulk growth rates over the next five years could be similar to that recorded over the previous period, depending on individual countries' response to covid, but also emphasised China's importance in keeping bulk trades moving.

"China is going to lead everything. We are expecting some growth in China's food production and expecting improvements in iron ore imports to feed China's steel mills and build up inventories," he said.

However, coal trades will decline. Commenting on the trade between Australia and China, Sharan said the completion of the rail network between Mongolia and China in 2021 "threatens to bring the trade down".

"The second phase of the railway will expand to Khorloogiin Choibarsan in east Mongolia, establishing a direct connection with Russia, thus reducing the cost of coal trade between Russia and China."

Russia exports around 30Mt of coal a year to China, almost 80% of which is transported by sea from the port of Vostochny, (about 1000nmiles from Qingdao). The move from sea to rail is expected to reduce the shipping demand by 25-30bn tonne miles from 2025.

In his most recent BIMCO analysis Sand said: "We expect 2021 to be a record-breaking year for the dry bulk industry both in terms of tonnes and tonne miles, with demand growth likely to outpace that of supply.

"However, this will not solve the overcapacity issue that has long plagued the dry bulk market and is an obstacle that will not disappear just because a new year has started or a vaccine has been found."

With the import position buoyant during the course of 2020 there have been suggestions that China's mass purchases of commodities during the past year might be reined back.

A recent Reuters report suggested that China could be cutting back imports to more "normal" levels and crude imports in December were just 9.06m bpd, down 17.9% from November and 15% from the same month in 2019.

Another market that saw massive Chinese demand last year was copper, but copper imports were down 8.7% in December, the third monthly decline. Iron ore levels were expected to be lower than last year, according to the Reuters report.

Starting from this year, China will allow the import of recycling iron and steel materials that meet the national standard since they do not constitute solid waste, authorities said.

Strict requirements on import management of recycling iron and steel materials were stipulated, according to a notice jointly issued by the Ministry of Ecology and Environment (MEE), the National Development and Reform Commission, the General Administration of Customs, the Ministry of Commerce, and the Ministry of Industry and Information Technology.

China officially released the national standard on recycling iron and steel materials in December 2020. The standard specifies the definition, classification, technical requirements, inspection methods and acceptance rules for recycling iron and steel materials. It will provide standard technical support for the use of high-quality recycled steel resources from both home and abroad.

Chinese authorities have banned all solid waste imports from 1 January this year.

VALE INVESTMENT

Investment in port facilities in China is continuing, however, and last year saw Vale International announce a joint venture with Ningbo Zhoushan Port Company to build, own and operate the West III Project in Shulanghu Port in Zhoushan City.

The West III Project aims to expand the Shulanghu Port facilities, developing a stockyard and loading berths with additional 20 Mtpy capacity. By participating in the project, Vale will secure a total port capacity of 40 Mtpy in Shulanghu, which will help Vale to optimise its overall supply chain costs.

The project has total multiyear investments of RMB 4.3 bn (US$624m) and it includes acquisition of land rights and the development of port capacity, including the construction of a new stockyard and two loading berths, subjects to regulatory approvals.

Vale will own 50% of the venture and both parties intend to obtain third-party loans of up to 65%, but not less than 50% of the total investment. With these assumptions, Vale's capital contribution to the project will vary between US$109m and US$156m, approximately.

The construction of the project, which is expected to take up to three years, will start after both parties obtain anti-trust and other regulatory approvals in China.

The project secures strategic port capacity for Vale in China, as Shulanghu Port berths Valemaxes and allows Vale's shipping and distribution costs optimisation.

CRANE ENGINEERING MOVE

Kalmar, part of Cargotec, plans to transfer part of its crane engineering in China to Etteplan, a globally operating engineering company. With the planned long-term agreement, Kalmar aims to improve the efficiency of its crane engineering operations in China by ensuring scalability and cost competitiveness.

The parties have signed an agreement regarding the services to be provided by Etteplan and the move was effective from 1 January this year. "We are aiming to improve our competitiveness by outsourcing part of the crane engineering operations in China," says Toni Söderlund, vice president of products and solutions, Kalmar. "This is a natural step for us after reorganising our earlier Chinese joint venture in June 2020. With the support of Etteplan's expert network and global footprint, we will be able to safeguard the scalability of our engineering operations, unify engineering competencies and processes between different products and technical solutions and realise synergies, resulting in better service for our customers,"

COAL WARS CONTINUE

The coal war between China and Australia in the past year has seen a realignment both as far as major importers and exporters of the commodity are concerned. Indonesia and Australia are the world's biggest exporters with China and India the largest importers.

While Indonesia was China's second-biggest supplier before the Chinese ban on imports of Australian coal, it has now had a surge in demand resulting from the ban, as a result of which Australia has been pushing more coking coal into the Indian market.

For India, the situation has reversed, with Indonesia in danger of losing its status as the South Asian nation's top supplier to Australia, a country that in the past has shipped only relatively modest volumes of coking coal to India.

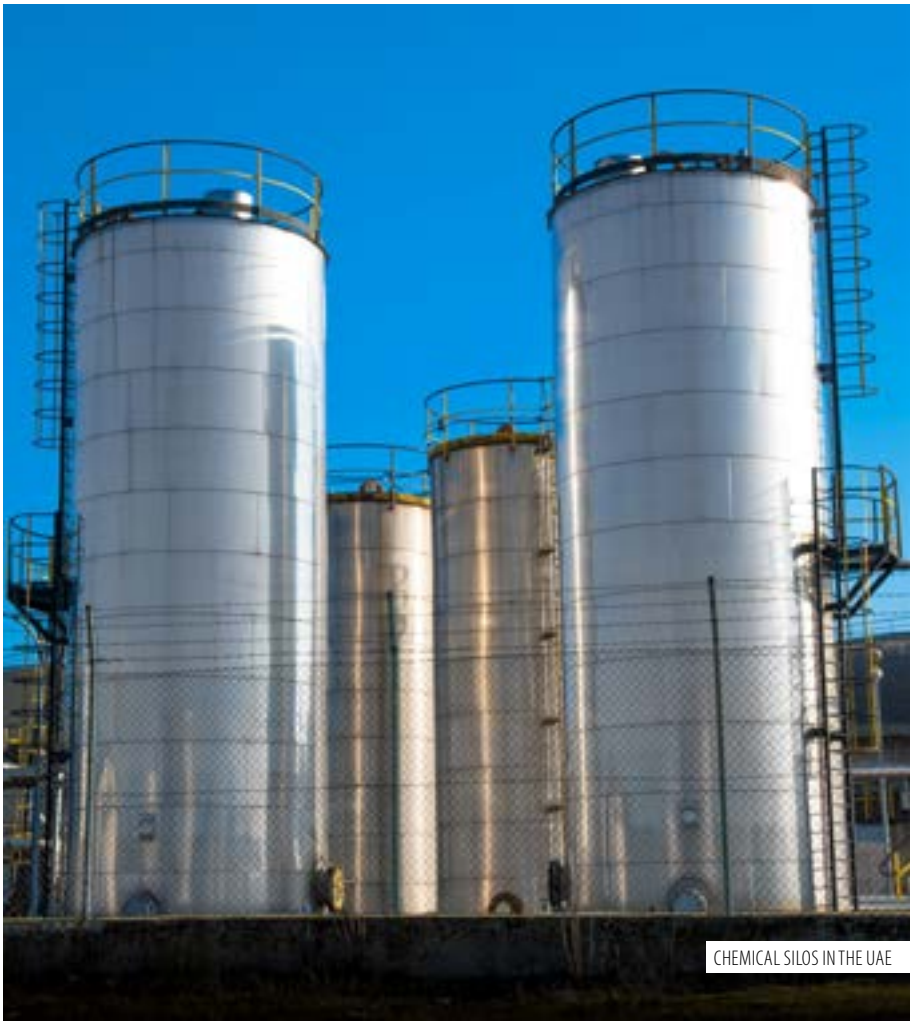
Chinese traders are understood to be importing more coal from neighbouring countries such as Russia and Mongolia and Fujian Guohang Ocean Shipping has signed an agreement with Russian coal supplier Elga Coal to set up a joint venture to export coking coal to China. The agreement is expected to escalate the imports of Russian coal by 30m tons, nearly doubling the total Russian export volume of coal to China from 33m in 2019, Nikkei reported on 6 January.

Chinese coal traders are understood to be looking for more local co-operation in the north in order to diversify supply chains in the face of rising demand for raw materials. Imports from Mongolia are being facilitated by increased shipping capacity thanks to the launch of the China-Mongolia "green channel" in August, which aims to boost bilateral trade and economic co-operation during the covid-19 pandemic.

With the joint project between Fujian Guohang Ocean Shipping and Elga Coal, Russia's coal supplies to China will also be stronger.

PORTS FACE POSITIVE FUTURE

There has been a flurry of activity in recent months as ports in the United Arab Emirates gear up for expansion in the bulk cargo and petrochemical arenas



CHEMICAL SILOS IN THE UAE

Expansion in the field of petrochemicals is the focus of AquaChemie Middle East's new terminal at Jebel Ali Port. The US$40m project will aim to boost the growing petrochemical trade between manufacturers and end-users in the Middle East and globally, while also addressing the acute shortage of storage facilities for redistribution and lease for bulk chemicals in Jebel Ali Port.

The state-of-the-art specialised bulk storage terminal will have a total envisaged capacity of around 40,000m^3, out of which 35,000m^3 will be in bulk storage tanks and about 5,000m^3 in ISO tanks and drums.

Scheduled for completion by the second quarter of 2022, the facility will be a turnkey and fully integrated distribution centre capable of handling bulk imports and packed chemicals at high volume. The terminal is designed to store flammable chemicals, up to NFPA Class 1B. More than 100 chemicals of UN Class3 hazardous classification or non-hazardous chemicals can be stored in the facility's nitrogen blanketed tanks.

AquaChemie Middle East targets revenue of around US$400m from the

petrochemical terminal business in the next seven years. This would form a substantial portion of the AquaChemie Group business.

According to Mohammed Al Muallem, CEO and managing director, DP World, UAE Region and CEO of Jafza says: "The petrochemical sector forms an integral part of DP World, UAE Region's key industry clusters. Jebel Ali Port and Jafza's combined capabilities as an integrated hub that offers multimodal connectivity, catering to the extensive demand of the industry at local and international level.

"Over the years, we have been providing a wide range of solutions to the region's chemicals' trade and logistics sector and are confident that this project will transform the business landscape of the petrochemicals segment, which is underpinned by rapidly changing regulations, technology disruptions and evolving customer demands."

Subrato Saha, co-founder of AquaChemie Middle East, comments: "The new chemical terminal will serve as a one-stop solution for sourcing raw materials and process chemicals for several industries and is poised to service customers, including oil and gas downstream, fine chemicals, fertiliser plants, paints and coatings, pharma, agrochemicals, textiles and other industrial and consumer products. Local and regional availability of chemicals will foster all the chemical-based associated industries in the region, he adds.

STATE-OF-THE-ART STORAGE

Meanwhile recently established healthcare procurement company Rafed and Abu Dhabi Ports have signed a collaboration agreement to jointly launch the largest healthcare and medical supplies cold store distribution centre in the UAE.

Both entities are part of ADQ, one of the region's largest holding companies with a broad portfolio of major enterprises spanning key sectors of Abu Dhabi's diversified economy.

Under the strategic collaboration agreement, Abu Dhabi Ports will deliver a state-of-the-art warehouse and inventory management solution for upstream, midstream and downstream operations as Rafed's fourth-party logistics service provider.

The new distribution centre will be the largest, most technologically advanced centre in the UAE.

DELMA PORT DEVELOPMENT

Abu Dhabi Ports has also recently announced the completion of the second phase of development at Delma Port. Abu Dhabi Ports is leading the developments of Al Dhafra's premiere multi-purpose port and other key maritime infrastructure in the emirate.

Aimed at extending the port's capability to benefit both the region and the local community's recreational, fishing and commercial needs, the project will help facilitate the movement of landing craft vessels, passenger ferries, pleasure boats and fishing boats through the new facility.

A key focus of the second phase of the development was the construction of a dedicated 315m quay wall, which together with several modern onsite facilities, were designed to specifically satisfy the demands of Delma Island's and Al Dhafra region's long-standing maritime community.

Capable of accommodating up to 60 boats, the expansion project will allow the region's recreational and commercial vessels to easily transfer and relocate from the old Delma Port to the new port.

ABU DHABI SKYLINE

FUTURE-PROOF PARTNERSHIP

Abu Dhabi Ports has also signed a memorandum of understanding (MoU) with classification society DNV GL to accelerate the sustainable development of Abu Dhabi's maritime ecosystem.

Under the terms of the agreement, both companies will work together to advance the digital transformation and further economic development of Abu Dhabi's maritime sector, through the deployment of leading-edge innovations including autonomous technology, AI, machine learning and electrification, as well as logistics and supply-chain authentication based on blockchain.

The partnership also creates opportunities to encourage Emirati graduates to pursue a career in Abu Dhabi's maritime trade ecosystem by offering research and development opportunities in the field of decarbonisation, such as alternative fuels and renewable energy usage.

Commenting on the MoU, Captain Mohamed Juma Al Shamisi, group chief executive of Abu Dhabi Ports, says: "A vital aspect in Abu Dhabi's philosophy is constantly researching and developing smarter ways to do things, and then integrating them into our local environment."

Remi Eriksen, chief executive of DNV GL, agrees: "Digitalisation and decarbonisation are important themes in shaping a maritime industry that are future fit, and by working together we will maximise the impact. We are looking forward to working with the leadership of Abu Dhabi Ports and being a partner in this transformational journey."

BIOFUEL INITIATIVE

Uniper Energy (UED) and Neutral Fuels have announced that they will collaborate to provide maritime biofuel in Fujairah. UED supplies very low sulphur fuel oil (VLSFO), while Neutral Fuels pioneered the commercial viability of net zero biofuels to replace fossil fuels.

The two companies will blend UED's VLSFO and Neutral Fuels biofuel, creating a maritime fuel that meets the International Maritime Organization (IMO) standard under its ISO8217:2010 RMG380 specification, thereby cutting emissions of carbon dioxide. Limiting sulphur in shipping fuels to 0.5% as mandated by the IMO reduces a significant source of atmospheric pollution, while cutting carbon emissions enables the maritime industry to become part of the solution to climate change rather than remaining part of the problem.

Lars Liebig, managing director of UED, says: "The collaboration is aimed to address climate protection, the predominant social issue in the world today. UED's mission is to help countries build up reliable and environmentally friendly energy supplies to support a global transition to cleaner energy. Collaborating with Neutral Fuels enables us to accelerate our efforts."

"UED is already supplying up to 500,000t of VLSFO per month from its processing plant in the Port of Fujairah, the world's third-largest bunkering hub," continues Liebig. "We will leverage our logistics infrastructure and global customer base, which stretches from the Middle East over South/East Africa and up to India, Singapore and China. The fuel will be available for large tankers and containers and for smaller short sea and feeder vessels."

For Fujairah terminals that are not currently connected to the grid, biofuel can also be used instead of fossil fuel in diesel generators, producing clean, green electricity and contributing to decarbonisation.

Gary Hubbard, chief commercial officer of Neutral Fuels, says: "It is fitting for the UAE to lead the way in making maritime biofuel widely available to the shipping industry. The UAE was quick to adopt the UN's sustainable development goals and has been particularly active in working to cut emissions of CO_2. This is the main culprit that creates the greenhouse gases that cause climate change."

SOUTH PORT BEGINS BUSINESS

The first shipment, carrying bauxite, destined for Emirates Global Aluminium (EGA)'s Al Taweelah alumina refinery, called recently at Khalifa Port's South Quay, marking the commencement of operations at the newly launched facility.

The bulk carrier, *Alfred Oldendorff*, the first in several shipments to the South Quay for EGA, was swiftly followed by two large general cargo consignments, making use of the recently completed first phase of South Quay, offering a total of 650m of quay wall comprising two berths and 37,000m^2 of terminal yard.

EGA will use the South Quay, in addition to its own nearby quay, which began receiving capesize vessels loaded with bauxite in 2019.

The introduction of the South Quay, together with the adjacent Khalifa Port Logistics (KPL) development, will dramatically boost Khalifa Port's ability to handle any type of cargo and service a wide variety of customers.

In addition to the South Quay phase 1 completion, approximately 800m of quay wall and almost 175,000m^2 of land within KPL has been handed over in advance of the project's full phase 1 conclusion in the first quarter of 2021.

KHALIFA PORT'S SOUTH QUAY COMMENCES OPERATIONS WITH THE ARRIVAL OF THE *ALFRED OLDENDORFF*.

TERMINAL TALES

RAISING THE RIGHTS BAR

Protection of seafarers' labour and human rights has never been more important than it is at the moment so it is good to see the Sustainable Shipping Initiative (SSI) and the Institute for Human Rights and Business announce the launch of a new project focused on the issue.

Delivering on Seafarers' Rights will be a joint project to develop a human rights code of conduct for charterers and a roadmap for tackling systemic challenges that create human rights risks for seafarers — a widely-recognised gap in catalysing industry-wide policy and practice.

The challenge of protecting and respecting seafarers rights was thrust into the spotlight with the emergence of 300,000+ seafarers stranded at sea due to crew-change restrictions as a result of the covid-19 pandemic.

Charterers are also increasingly under scrutiny with regard to the sustainability of their supply chains, not only in terms of their commodities, but also the vessels that transport their cargo. However, there is currently a lack of guidance on how labour and human rights risks should be identified and mitigated. Plugging this gap is key to strengthening both chartering-related decision-making and due diligence processes.

This project will see charterers play an active role in raising the industry's bar through the development of an industry code of conduct.

DIVERSITY IN ACTION

Meanwhile Maritime UK, the umbrella body for the maritime sector, has welcomed Associated British Ports as the latest business to join the Diversity in Maritime Charter programme.

ABP's ports in Southampton and East Anglia have been recognised by the Diversity in Maritime Charter for their success in implementing initiatives to attract a more diverse workforce. Twenty volunteers from across the business helped create an action plan for further improvement, which the company is hoping to build on for its other locations. Initiatives included providing personal protective equipment designed specifically for females and increasing the number of women in senior management roles.

In 2020, women represented 57% of ABP's graduate intake and the company appointed four women into senior management roles, representing 33% of all senior leadership appointments.

SWITCHING FOCUS TO SEAFARERS

There have been changes afoot at the top of the Wallem Group with the resignation of chief executive Frank Coles. He has been very active in highlighting the plight of seafarers during the covid-19 pandemic and now wishes to become more involved in promoting their welfare, as well as pursuing other opportunities.

During his two and half years at Wallem, Coles initiated many changes aimed at enhancing customer service, obtaining operational efficiencies and improving safety.

"After all these years in the maritime industry, I would now like to focus on putting something back and on the welfare and rights of seafarers," he said on announcing his departure.

We wish him every success in his new role.

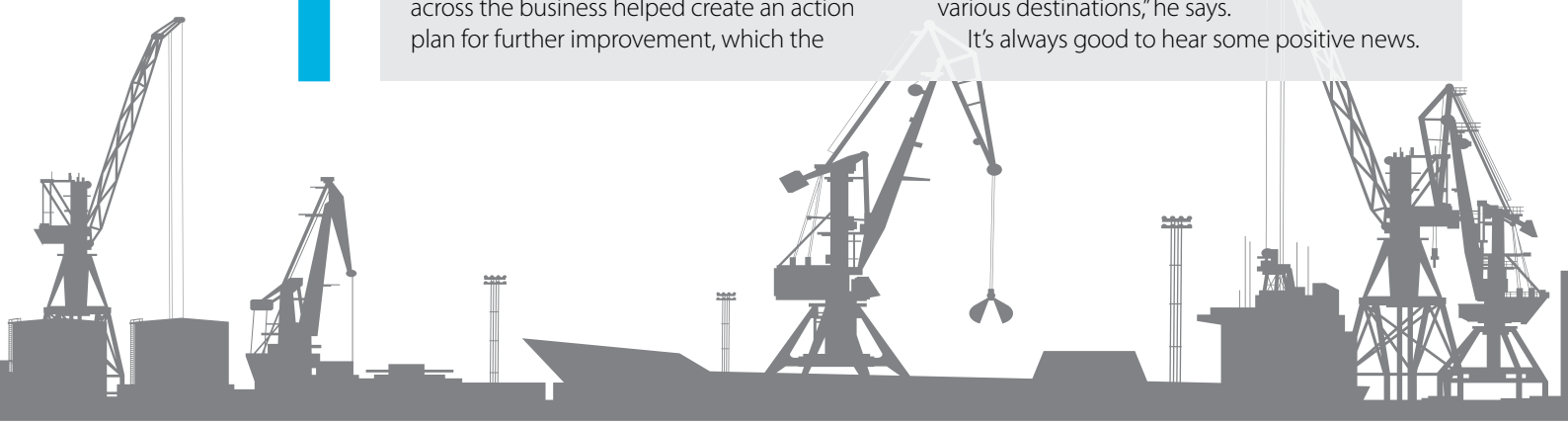
CASH BOOST BENEFITS LOCALS

We hear that Viterra has invested $7m into its Port Giles and Wallaroo port terminals in Australia to ensure their long-term sustainability. The investment comes ahead of a strong export shipping schedule this year.

Viterra operations manager central region Jack Tansley says the focus at both locations is on continuing to provide value to local growers who deliver into the sites by maintaining these key export terminals for South Australian grain.

"We have strong demand for grain from our system with back-to-back vessels booked by multiple exporters who are sending grain to various destinations," he says.

It's always good to hear some positive news.



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