

BULK TERMINALS

SUMMER 2021

international

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

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SAFETY STAYS IN THE SPOTLIGHT

BY SANDRA SPEARES

With the plight of seafarers continuing to be a major concern — with vaccination of crew members top of the agenda — new aids to the health and safety of people vital to the shipping industry are to be welcomed

It is good to see that countries such as India, which has paid a heavy price in the pandemic, have been pushing for vaccination of their seafarers in the shortest possible time. Health and safety continue to be major concerns for the industry and, it is hoped, will continue to receive a high level of attention at all levels.

While seafarers' issues are nothing new, it is hoped that the pandemic may have a positive effect in highlighting the importance of those who work in all sectors of the industry.

The pandemic has also served to highlight or accelerate trends such as remote working, digitalisation and the need to reduce costs by introducing greater efficiencies and eliminating wasteful practices. Some remote working practices will continue to improve safety conditions for those working in ports and on ships. They should have a positive effect on how personnel are deployed and, result in the elimination of some of the more dangerous tasks in which individuals may have to become involved.

“

The use of drones may serve to address the issue of dangers represented by enclosed spaces, notably reducing the need for human intervention within high-risk areas of the ship or port facility

One area that has been receiving attention is using drones to carry out surveys of areas of ships that have often resulted in dangers to crew in the past. The use of drones may also serve to address the issue of dangers represented by enclosed spaces, notably reducing the need for human intervention within high-risk areas of the ship or port facility.

That said, remote working does have its down side and it is hoped as the pandemic begins to ease, there will be more time for face to face contacts that do not involve speaking via a computer screen. There have been benefits for more efficient use of working time, but the maritime industry is essentially a very sociable one, and face to face contacts are important. Hopefully, this will be possible later this year when ABTO holds its delayed conference in Riga.

We hope that as many of you as possible will be able to make the trip to Riga in October to enjoy the pleasures of networking in the traditional way, while at the same time having the opportunity of hearing presentations from specialists from across the dry bulk segment.

Meanwhile, enjoy reading the latest edition of *Bulk Terminals International*.

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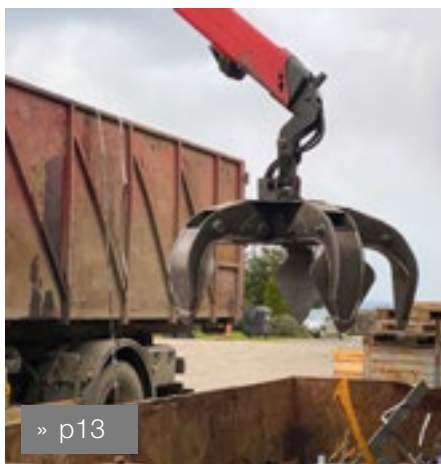
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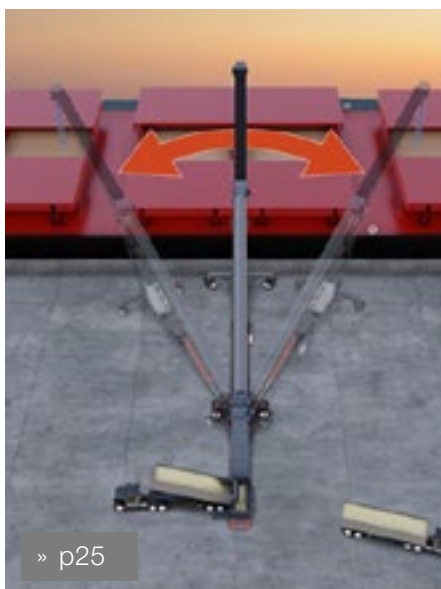
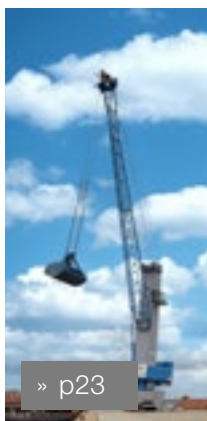
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UNITED FRONT

SIMON GUTTERIDGE, CHIEF EXECUTIVE ABTO

By standing together, organisations representing shipping and ports and terminals can be unified in their aims, from cleaner shipping to safety

The first quarter of 2021 started well for dry bulk, when BIMCO reported: “The first four months of 2021 have been record breaking in volume terms, with demand reaching 1.69bn tonnes – the highest-ever start to a year. Volumes are up 6.1% compared with the same period in 2020, and only slightly down from the 1.72bn tonnes in the final four months of 2020.”

In the second quarter, BIMCO’s chief shipping analyst Peter Sand posted: “The swift recovery from the pandemic in China has seen its dry bulk imports rise to their highest levels ever, boosted by infrastructure heavy stimulus and high grains demand, causing a spike in the appetite for many dry bulk imports, which have reached their highest levels ever.”

Platts, meanwhile, sees this trend continuing into the third quarter.

However positive the markets, political dispute – as we have seen with the impact of China’s spat with Australia on the latter’s bulk exports to the Middle Kingdom – and civil disruption can spoil the good news.

Citing “an escalation in the security situation at the operations”, at the beginning of July, Rio Tinto declared a *force majeure* on customer contracts at its Richards Bay Minerals project.

At the time of going to press, meanwhile, riots and looting in KwaZulu-Natal and Gauteng had resulted in the suspension of transport operations along the NATCOR rail line, representing a substantial blow to South Africa’s embattled economy – although

Transnet, the state-owned freight and logistics company, said operations at the Durban and Richards Bay ports were being restored, having previously declared *force majeure* on the line.

Despite the violence, some terminals have managed to continue operating. Recently appointed Fiya Nxumalo, operations planning manager at the Richards Bay Coal Terminal – who takes over the role following the sad death earlier this year of *Bulk Terminals International* reader Silven Chetty – reports that the terminal has kept operations running.

VIEWS ON EU’S CLIMATE PLAN

For climate change to be reduced, there needs to be a unified international approach to reduce emissions, no less so in the shipping and port sectors of maritime operations.

Shipping is divided. The EU has announced a new climate change plan, “Fit for 55”. This includes shipping to be part of the Emissions Trading Scheme (ETS). The International Chamber of Shipping (ICS) – which, in line with the International Maritime Organization (IMO), wishes to see international agreement rather than regional regulation – was highly critical. Guy Platten, secretary general, ICS says: “Other than as an ideological revenue-raising exercise, which will greatly upset the EU’s trading partners, it’s difficult to see what extending the EU ETS to shipping will achieve towards reducing CO₂, particularly as the proposal only covers about 7.5% of shipping’s global emissions. This could seriously put back

climate negotiations for the remaining 92.5% of shipping emissions.”

Danish Shipping thinks differently. Maria Skipper Schwenn, executive director of security, environment and maritime research, says: “As a starting point, it looks very reasonable and we feel that the contributions we, as a sector, have delivered in the preparatory work, have been heard” – and happy that this could pressure IMO into adopting the same approach.

Claes Berglund, president of the European Community Shipowners Association, gives cautious support, preferring international agreement, but genuflecting in the direction of the EU: “We recognise that shipping should contribute its fair share to address the climate crisis, at EU level as well.”

The port and terminal sector in the EU is broadly in favour. The Federation of European Private Port Operators (FEPOR) welcomes the “Fit for 55” proposals as a necessary step to meet the EU’s enhanced climate targets.

Lamia Kerdjoudj-Belkaid, secretary general, FEPOR, underlining the need to support the efforts of port stakeholders to decarbonise the maritime sector, adds a note of caution: “We fully subscribe to the objectives of the Green Deal and EU’s enhanced climate targets. However, it will also be essential to keep in mind that the competitiveness of European ports is also a priority and that the competition with non-EU neighbouring ports is an important issue to be considered when discussing mechanisms that may impact imports and exports transported via EU ports”

Similarly, The European Sea Ports Organisation (ESPO) welcomes the proposals. Although, as with FEPORT, while supportive of the EU proposals, it notes the caveats. Isabelle Ryckbost, secretary general, ESPO, says: "For Europe's ports, it is essential to ultimately achieve a policy that is effective in reducing emissions, is coherent, keeps an eye on the competitiveness of Europe's port sector, is future-proof and does not create stranded assets or additional administrative burden for ports. It should take the diversity of the European port and maritime sector into due consideration."

The International Association of Ports and Harbors (IAPH), which enjoys IMO NGO consultative status, has of course had the World Ports Sustainability Program in place since mid-2017. Guided by the 17 UN Sustainable Development Goals, the program wants to enhance and co-ordinate future sustainability efforts of ports worldwide and foster international co-operation with partners in the supply chain.

At the IAPH World Ports Conference in May, the new IAPH president, Subramaniam Karupiah called for closer co-operation between port and shipping stakeholders to achieve sustainability "especially when it comes to ships with new fuel requirements, such as LNG, methanol and ammonia, much higher and more complex investments will be required on land than in the shipyard.

"As mentioned by several port CEOs during the conference, achieving this in a sustainable manner – both economically and from an environmental standpoint – will require much closer co-operation between shipping and ports than we currently see and will also require working closely with the energy majors and future providers of bunker fuel for these new ships."

ABTO adds its voice to those organisations representing shipping and the ports and terminals sectors that wish to see international agreement rather than attempts to force the pace through regional rules and regulations. IMO often comes in for criticism for how long it can take to achieve agreement. In wartime, any merchant convoy can only travel at the speed of the slowest ship. However,

just as a convoy achieves protection from accompanying naval vessels by sticking together, so international agreement prevents a patchwork of different applicable standards that all too often result in substandard safety and environmental regulation in those jurisdictions where seafarers and port and terminal workers most need protection – notwithstanding, given IMO's remit, this is easier to achieve with shipping than ports and terminals.

COMING UP

Turning to housekeeping matters, ABTO aims to keep you in the picture about these and other developments at our annual conference and through a programme of our own and supported events throughout the year.

Assuming new covid-19 variants do not prevent it, the ABTO **Bulk Terminals 2021 Riga** conference 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. While we hope to be able to meet you all physically in Riga and are working on the assumption that this will be possible, in the event of a further recurrence of covid-19 in October preventing this, we will split the sessions and run the conference online over four or five days during the week commencing 18 October.

Each year, the ABTO Bulk Terminals conference presents a full programme focused on the concerns of operators. It offers 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 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, igus and Buttimer for repeating their support for Bulk Terminals 2021 Riga, and welcome Bedeschi and SAMSON Materials Handling on board this year.

We are pleased to announce a new online short course on Tuesday 23 and Wednesday 24 November 2021: **Understanding the Total Cost of Ownership – how to avoid future problems and buy bulk solids handling equipment intelligently.**

The objective of the course is to raise awareness among bulk terminal buyers of the need to behave in a better-informed way, and equipment suppliers to understand the operational needs of the equipment they are supplying.

All too often, the operational requirements of the equipment to be supplied are not understood by either buyers or sellers. Purchase decisions purely based on price fail to understand the true cost of a bulk solids handling system to a business in terms of downtime, energy, maintenance and manning.

With expert presentations, case studies and group working facilitated by The Wolfson Centre for Bulk Solids Handling Technology, University of Greenwich and members of the Solids Handling & Processing Association, this course will give both terminal operators and equipment manufacturers an insight into what should on the one side be specified and on the other supplied.

The popular **Port and Terminal Operations for Bulk Cargoes short course** will be repeated online 14-17 March 2022, as will **Biomass Operations and Handling Technology** 21-25 February 2022.

To discuss speaking and sponsorship opportunities at Bulk Terminals 2021 Riga, or to register an interest in attending the conference or any of the short training courses, please contact: events@bulkterminals.org
Tel: +33 (0)3 21 47 72 19.

Keep an eye on the Events section of our website for developments and registration details.

Enjoy our summer edition of *Bulk Terminals International*. Keep in touch, stay safe and see you all at Bulk Terminals in Riga from 19-21 October.

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WORLD NEWS ROUND-UP

Tackling emissions has been much in the news in recent months and the International Maritime Organization has been under pressure to come up with speedy solutions for the maritime industry



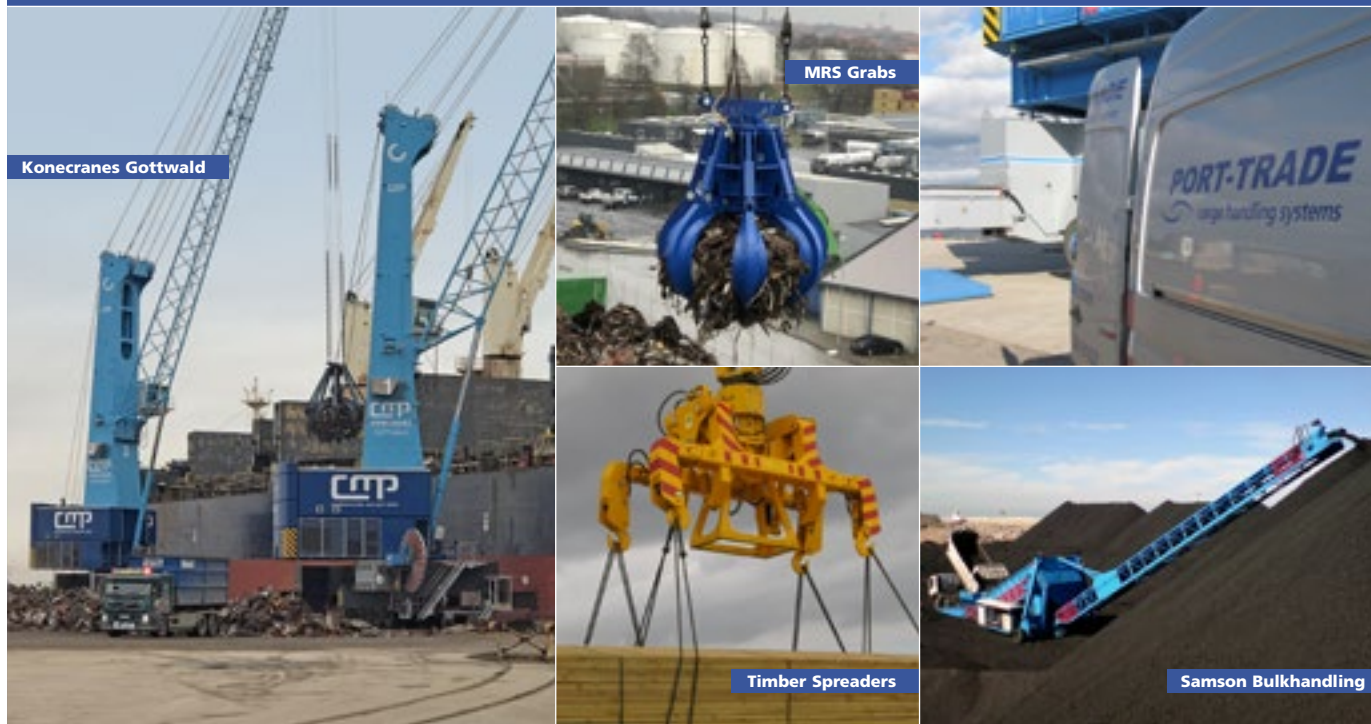
The International Maritime Organization's (IMO) Marine Environment Protection Committee, at its recent meeting, adopted amendments to the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI, which will require ships to reduce their greenhouse gas (GHG) emissions.

These amendments combine technical and operational approaches to improve the energy efficiency of ships, in line with the targets established in the 2018 Initial IMO Strategy for Reducing GHG Emissions from Ships and also provide important building blocks for future GHG reduction measures.

The new measures will require all ships to calculate their Energy Efficiency Existing Ship Index (EEXI) following technical means to improve their energy efficiency and to establish their annual operational carbon intensity indicator (CII) and CII rating. Carbon intensity links the GHG emissions to the transport work of ships.

Ships will get a rating of their energy efficiency (A, B, C, D, E, where A is the best), which will be incorporated in their mandatory Statement of

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Compliance to be issued by the Administration. Administrations, port authorities and other stakeholders as appropriate are also encouraged to provide incentives to ships rated as A or B.

The amendments to MARPOL Annex VI (adopted in a consolidated revised Annex VI) are expected to enter into force on 1 November 2022, with the requirements for EEXI and CII certification coming into effect from 1 January 2023. This means that the first annual reporting on carbon intensity will be completed in 2023, with the first rating given in 2024.

Other measures discussed included a prohibition on the use and carriage for use as fuel of heavy fuel oil by ships in Arctic waters on and after 1 July 2024. The MEPC also adopted amendments to the IMO Convention for the Control of Harmful Anti-fouling Systems on Ships

(AFS Convention), to include controls on the biocide cybutryne.

The MEPC also agreed to commence further work on underwater noise from ships and to review the 2014 Guidelines for the reduction of underwater noise from commercial shipping to address adverse impacts on marine life (MEPC.1/Circ.833) and identify next steps.

PORT AUTHORITIES TALK

In June, the Port Authority Round Table took place, during which the world's 20 largest ports talked to each other online about decarbonisation of shipping, digitalisation and disruptions in the logistics chain.

During these meetings, ports expressed their intention to share data more intensively. One example is the use of neutral platforms such as the Routescanner, which was developed by the Port of Rotterdam Authority.

SUITE IMPLEMENTATION

Insurity, a leading provider of cloud-based software for insurance carriers, brokers, and MGAs has announced that TT Club has successfully implemented its Oceanwide Marine Suite for its cargo insurance business.

This new implementation of Oceanwide Marine Suite will accelerate TT's digital strategy by streamlining the cargo insurance policy configuration process, facilitating faster collaboration with brokers and clients, and enhancing customer offerings.

Insurity's Oceanwide Marine Suite enables TT to meet the freight forwarding industry's developing digital needs by sharing enhanced underwriting offerings with their cargo insurance clients.

Oceanwide Marine Suite will allow TT to promote real-time collaboration between multiple parties to offer

operational efficiencies in the management and administration of marine cargo insurance policies. Various tools within the suite allow users to rapidly process referrals and proactively manage exposures, with complete data transparency.

MORE RESEARCH REQUIRED

The International Chamber of Shipping (ICS) has warned that without decisive government signals, declining levels of maritime research and development could jeopardise industry's ability to decarbonise.

According to the International Energy Agency (IEA), Maritime's research and development (R&D) spending between 2007-2019 remained stagnant, lagging far behind that of other sectors. The total amount of corporate R&D investment for maritime actually decreased, from US\$2.7bn in 2017 to US\$1.6bn in 2019, according to the IEA.

ICS highlighted that growing uncertainty is leading to a reduction in confidence about R&D investment. The lack of clarity, in part due to the increasing levels of political risk and resulting investment risk, is leading to limited R&D investment for

"green" fuels for ships, and the accompanying technologies they need to be safely used.

There is also growing concern about the safety and toxic emission associated with the use of some proposed alternative fuels. Without government support for rapid research and development, this will add unacceptable levels of risk to investments made in shipping by both the public and private sector.

Guy Platten, secretary general of the ICS, comments: "We have welcomed recent announcements of plans to increase innovation and for zero emission pilot projects. However, all too often these announcements do not come with cash or a realistic investment strategy. This sends conflicting messages to the market and, as a result, investment in shipping is becoming riskier with each passing day. We need governments to match their words on decarbonisation with tangible action. Investment in research and development relies on certainty of the availability of long-term 'patient capital'."

As technology development is traditionally uncertain and takes time, ICS is co-sponsoring, along with 10

governments and industry partners, a US\$5bn R&D fund for shipping — the International Maritime Rescue Federation, which provides certainty through guaranteed 10-year funding to support the 'de-risking of investments' for advancing technology readiness levels.

RENEWED COLLABORATION

FIATA International Federation of Freight Forwarders Associations and the International Cargo Handling Coordination Association have renewed their memorandum of understanding (MoU) to reinforce collaboration between the two organisations.

The MoU facilitates close co-ordination between FIATA and ICHCA to help them pursue their respective organisational goals and further mutual understanding. It also creates the framework for co-operation that will enable both organisations to benefit from agreed actions and initiatives to achieve common objectives.

"Co-operation with key industry organisations is critical to the safe and efficient performance of today's increasingly complex supply chains," says FIATA President, Basil Pietersen. "The renewal of our MoU with ICHCA provides a valuable opportunity to strengthen our collaboration and review our common goals. As we set sail into this new chapter of our partnership, I am confident that we will achieve the objectives set in this new co-operation agreement."

The identified areas for collaboration in the MoU include the engagement of all actors in safety and security-related topics, the digitalisation of the supply chain, the improvement and reinforcement of operational efficiency, and regulatory and policy developments around the world that may impact on the activities of the supply chain.

"By renewing our MoU with FIATA, the two organisations can work more effectively in pursuing our common goals and objectives," says ICHCA chairman John Beckett. "We remain committed to our efforts to improve safety, security and sustainability in the global logistics supply chain, especially at the ship/port interface."





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CIRCULAR APPROACH

The Sustainable Shipping Initiative (SSI) has published its report *Exploring Shipping's Transition to a Circular Industry*, discussing the potential of circular economy principles for shipping and identifying four main building blocks: knowledge and awareness, business model innovation, technological advancement, and a global regulatory framework.

As shipping undergoes rapid shifts in the coming decades to achieve its decarbonisation and sustainability goals, now is the time to rethink the industry's approach to resource use and consider the entire lifecycle of a vessel in its design, building, operations and recycling phases, the report says.

More than 95% of current lifecycle CO₂ emissions take place during the operational stage of a ship's life.

However, as the industry works to decarbonise, the need to address and reduce emissions at other lifecycle stages will increase.

By incorporating circularity principles of designing out waste, maximising the useful life of materials, and leveraging increased reuse of materials and components, shipping can reduce CO₂ emissions, lower costs, and retain value whilst minimising waste.

NEW LONDON SHIPYARD

The Port of London Authority, working with property developers London & Regional and the Royal Docks Team, is planning to deliver the first new shipyard on the Thames for more than a century at Albert Island.

Use of the Thames has been growing rapidly in recent years, with increasing passenger services, barge movements

and deep-sea trade. The planned shipyard forms part of Albert Island, London & Regional's 25-acre, multi-million-pound industrial regeneration scheme in the Royal Docks.

The whole area is undergoing significant transformation as London's only Enterprise Zone and presents a unique opportunity for a skilled maritime operator to develop dedicated facilities and highly skilled jobs for local people, serving the UK's busiest inland waterway

HYDROGEN DEVELOPMENT

German steel companies Thyssenkrupp Steel and HKM and the Port of Rotterdam are jointly investigating setting up international supply chains for hydrogen.

In the course of their transformation paths towards climate-neutral steel making, Thyssenkrupp Steel and HKM



are going to require large and increasing quantities of hydrogen to produce steel without coal.

For decades, both companies have been importing coal, iron ore and other raw materials via their own terminal in Rotterdam, using inland barges as well as rail to transport it to their blast furnaces in Duisburg.

Together, the partners will explore hydrogen import opportunities via Rotterdam as well as a possible pipeline corridor between Rotterdam and Thyssenkrupp Steel's and HKM's steel sites in Duisburg. The partnership may serve as a framework for additional initiatives and aims at supporting existing initiatives and projects the partners are involved in.

The Port of Rotterdam is already investigating the import of hydrogen from a large number of countries and regions all over the world. Green hydrogen is a sustainable alternative to coal, oil and natural gas. Vast imports of hydrogen are necessary if Europe and Germany want to reduce CO₂ emissions and become climate-neutral by 2050, while maintaining its strong industrial backbone.

Rotterdam is also setting up a carbon transport and storage system, Porthos, which is also being considered as a

CO₂ storage site for the production of blue hydrogen by the "H2morrow steel" project, which includes Thyssenkrupp Steel as partner as well.

AIR LUBRICATION

Clean technology company Silverstream Technologies has announced it has completed the installation of its market-leading air lubrication technology, the Silverstream System, on the Vale-chartered newbuild ore carrier *Sea Victoria*.

The installation is the first time that any air lubrication technology has been deployed on a very large ore carrier (VLOC). Coming in at 324,300-dwt, *Sea Victoria* is the latest guibamax newbuild dry cargo ship constructed by Vale.

Silverstream's technology creates a rigid carpet of microbubbles that reduces friction between the hull and the water, cutting fuel burn and associated emissions by a proven 5-10%, depending on the vessel.

The technology was chosen by Vale because these independently verified savings align with the organisation's Ecoshipping programme. Vale will aim to reduce its Scope 3 emissions — generated across its supply chain — by investing in leading clean technologies and future fuels to accelerate emissions reductions across its chartered fleet.

HISTORIC MEETING

As world leaders met in Cornwall, England, for the G7 in June, the first-ever meeting of the equivalent maritime bodies, titled M7, took place at the same time, organised by the UK Chamber of Shipping.

Delegates from the shipowner associations of the G7, plus those from Australia, India, South Africa and South Korea, were joined by the Secretary General of the International Chamber of Shipping, Chief Executive and Secretary General of BIMCO and a representative from ECSA.

There was universal agreement that more investment is needed from governments and industry to develop the technologies for a cleaner and greener shipping industry and that the G7 governments should be urged to back the shipping industry's proposed \$5bn R&D decarbonisation fund.

Delegates also agreed that more work was needed to help develop digital documentation to facilitate an increase in global trade as the world recovers from covid-19.

The crew change crisis was discussed and the extraordinary work seafarers have done over the past 15 months supporting global trade under extremely challenging conditions was noted. The meeting called for governments of the G7 to follow the lead of the US, Canada and other countries in prioritising vaccinations for seafarers.

UK Chamber of Shipping President John Denholm commented: "Meeting for the first time, the M7 brought together the shipowning organisations of the G7, the UK, Canada, France, Germany, Italy, Japan and the US, as well as those invited to the G7 event from Australia, India, South Africa and South Korea.

"The meeting fully supported the need to decarbonise and agreed that if the industry is to meet its goal of zero carbon emissions by 2050, large-scale investment in research and development is necessary as without this we simply will not have the technologies needed for the greener, cleaner shipping industry that we all want."

VERSATILITY IS KEY

Flexibility is one of the most important elements when choosing the right grab for the job, with companies providing a range of specialised products to meet the challenges of different situations and products



The versatility of grabs came under the spotlight with the UK's Port of Tyne announcement last year that it planned investment worth over £1m in equipment to support its wood pellet operations, with a view to reducing dust emissions resulting from the handling process.

These include a continuous water mist spray to prevent dust particles present in the air, and pyramid covers that enclose the top of cargo grabs to prevent movement of particles. Specific grabs have also been used to complete particular projects that may be, for example, environmentally sensitive.

TGS, for example, has grabs specifically designed for environmental dredging purposes. These will be used for the horizontal removal of a layer of polluted loose silt or sludge.

The environmental dredging clamshell grab, also called the level-cut clamshell grab, closes almost horizontally. The shells can be used with a rubber binding, which ensures extra sealing.

Hydraulic level-cut clamshell grabs are especially designed for dredging of polluted mud. The advantage compared to a normal dredging grab is that it has low turbulence when lifting the grab,

it has a bigger footprint and, because the grab closes almost horizontally, it is possible to remove mud from the bottom very accurately.

By positioning the grab it is possible to remove only the required layer of polluted mud without taking any non-polluted mud. The grab is suitable for dredging mud with a density up to 1.5t/m³, TGS explains.

Other specialised grabs include hydraulic salvage grabs, which are specially designed for handling shipwrecks and can be used with two or four shells, depending on the size of the jobs.

Other equipment used in this kind of operation include chain pullers that, once secured to a solid surface and connected to a standard power pack, can generate a pulling force of 300 tons. They are used for dragging vessels off the beach or on to barges, rolling vessels on to breakwater or the vertical lifting of sunken ships. TGS can manufacture chain pullers with a pulling force of up to 1,000 tons.

Meanwhile, Kinshofer produces a range of selector grabs that are especially designed for demolition tasks. The grabs are available with shells featuring a perforated skin or metal ribs — both versions let fine dust and gravel through without larger pieces getting caught.

All demolition and sorting grabs are characterised by exceptional closing forces due to the two horizontally positioned hydraulic cylinders that are hydraulically cushioned and protected by the bucket carrier.

Kinshofer's timber grabs, meanwhile, are adaptable according to whether the equipment is designed to grab a single log or multiple logs at once.

The small Kinshofer timber grabs for excavators up to 9t/19,800lbs operating weight are equipped with the revolutionary cylinderless HPXdrive and thus provide the feature to exchange the shells and use the drive unit for other applications. Due to the rigid mount, the precise handling and positioning of the load is no problem.

SMART SOLUTIONS

As technological advances continue, smart is the word of choice. Liebherr's intelligent SmartGrip grabbing technology aims to revolutionise bulk handling in ports. The self-learning system increases material handling performance and protects the crane from being overloaded.

The SmartGrip grabber technology is capable of optimising the filling rate of the grabber in a self-learning manner. In this way, SmartGrip learns after just five lifting cycles how to optimise capacity utilisation of the grabber, even for less experienced crane operators.

SmartGrip combines a series of significant advantages in bulk handling. It reduces overloads to a minimum, increases the material handling rate and, at the same time, alleviates crane operator stress. With SmartGrip activated, the crane operator can rely on the system. Operators of older Liebherr machines can upgrade their existing cranes with this function.

By installing the SmartGrip, the handling rate can be increased by up to 30% as the system utilises the grabber capacity in full, according to the company.

During unloading, the properties of the material can change as a result of pressure and moisture, which can lead to overload. Overloads impair the crane structure and can drastically shorten the crane's service life.

SmartGrip fills the grabber based on an optimum load graph and reduces overload and its effects on the crane's structure. Changing the grabber for different material densities is not necessary.

With SmartGrip activated, the crane operator can determine the desired grabber quantity manually and then rely entirely on the system. This results in less stress for the crane operator, increased safety thanks to automated grabber filling and above-average handling output is possible even for less experienced crane operators.



SIWERTELL: READY FOR CEMENT IMPORT BOOM

COMPANY NEWS

Around half of US cement imports are handled by Siwertell ship unloaders and, with the country preparing for a massive programme of infrastructure spending to promote growth and recovery, Bruks Siwertell technology is on hand to meet the demand.

According to credit rating agency ICRA, the global demand for cement will increase by a huge 20% in the 2022 fiscal year, returning to pre-covid-19 levels. It projects that demand will be driven by a backlog of infrastructure maintenance projects, due to the pandemic, as well as rural construction projects, including affordable housing.

Globally, there are a number of reasons to expect cement demand to increase well beyond the return to normalcy in the aftermath of covid-19. Coastal defence structures will be needed to mitigate the risks posed by rising sea levels and for the US, a country spanning two vast coastlines, the concrete demand for these constructions will be substantial. Land reclamation and artificial islands, another growing trend in China, the Middle East and parts of Europe, will also require huge quantities of concrete.

The US is one of the world's largest consumers of cement, with the state of Texas its biggest net importer. As of

2019, before covid-19 and its associated market slowdown hit, the largest number of imports came from Canada, although overseas exporters Turkey, Greece and China were all in the top five.

US cement imports reached a peak in 2006 but, by 2008, there had been a major falloff in consumption thanks to the financial crisis. A trend of marginally increasing imports followed and, by 2017, incremental growth in consumption had once again surpassed domestic US production. During this time, around half of the US's cement import growth was handled by Siwertell ship unloaders from Bruks Siwertell.

Once again, there was a dip in 2020, as covid-19 put many building projects on hold. However, the market is anticipated to recover more quickly this time, and with it, a deficit of domestically produced concrete.

FROM BAGS TO BULK

In the US and elsewhere, much of this demand will be supplied by dry bulk materials carried by ships. In Texas, Bruks Siwertell recently supported Sesco Cement's transition from bagged cement deliveries to bulk, with the addition of a Siwertell ST 640-M ship unloader at its new import terminal in Houston.

Supplying cement locally and to other states including Louisiana, Oklahoma, New Mexico and Arkansas, Sesco opted for a totally enclosed Siwertell ship unloader when it was time to increase throughput.



The new unit was commissioned in September 2020 and offers continuous dust-free cement handling at a rated capacity of 1,500t/h, with a peak capacity of 1,650t/h, discharging vessels up to 80,000dwt.

“For some time, Sesco had imported bagged deliveries of cement from Egypt, but bulk imports hold the potential for greater market impact,” explains Per Wahlström, contract manager, Bruks Siwertell. “We also delivered 192m of jetty conveyors.”

As part of the terminal’s construction, the old quay had to be repaired and to keep renovation costs as low as possible, the unloading system had to be low in weight to minimise any reinforcement work from increased loads.

The choice of unloader was key in avoiding further costs, he explains: “It was light enough to minimise these costs, but yet deliver the through-ship capacity that it required. Performance tests have gone according to plan and the operator is happy.”

SWITCHING TO DUST-FREE

In the past, bulk cement imports have been known to be challenging work. For a powdery dry bulk material, cement can be relatively sensitive to the way in which it is handled during loading, ocean transit, unloading and onwards for downstream transport.

“Cement is specially formulated to react with water and eventually cure and solidify, even minimal exposure to moisture can pose a problem,” says Ken Upchurch, VP sales and marketing, Bruks Siwertell. “Yet open-air systems have been used to unload it in the past, meaning it is exposed to the elements while it is being unloaded.”

Moisture exposure is one issue, but arguably more pertinent ones are environmental protection from dust emissions and the detrimental impact cement dust has on human health. Grab or bucket-chain unloaders offer little protection, and against water ingress.



In dry climates, dust emissions from cement become even more problematic. The fine particles are easily picked up by wind or stirred up by any sort of impact; cement being dropped or crushed is likely to emit a cloud of cement dust. For this reason, the best way to transfer it is through continuous dry bulk material handling, rather than a series of stops and starts. Neither bucket-chain unloaders or grabs are able to offer this, or environmental protection from dust emissions, and pneumatic systems are also limited.

Pneumatic unloaders have often been thought a good option for cement handling and it is true that in the right conditions they are capable of high throughput. However, when materials become compacted, these machines lack the digging forces necessary to handle them and efficiency drops off. They also require significant input from payloaders in the hold.

HIGHLY-EFFICIENT HANDLING

Bruks Siwertell defines unloading efficiency by comparing the actual through-ship unloading capacity against the rated capacity. While most alternative

unloading systems offer efficiencies of between 50 and 60%, a Siwertell screw-type ship unloader delivers efficiencies of 70% or more.

The main reason for this higher overall efficiency, compared with grab cranes for example, is that at the beginning of an unloading operation, the grab only travels a very short distance to reach the cargo.

However, as more bulk material is unloaded, the greater the distance the grab has to travel, into and out of the hold. Therefore, the efficiency progressively decreases.

In contrast, a Siwertell screw type unloader maintains continuous unloading at a steady discharge rate, regardless of the level of cargo in the hold, right up to the hold clean up stage. It also picks up material below the cargo surface, avoiding any hold avalanches, with a counter-rotating inlet device.

Further adding to its efficiency, a Siwertell unloader can reach right into the corners of a hold, offering an additional advantage over pneumatic unloaders and other systems. This results in quicker vessel turnaround and reduced berth occupancy.

SUPPORTING MARKET GROWTH

The first screw-type Siwertell ship unloader was supplied to the cement industry in 1975. In 1980, Bruks Siwertell set a new standard for the industry by introducing the 800t/h Siwertell unloader to the market and since then, it has continuously set the highest bar. Today, Siwertell cement unloaders offer continuous rated capacities in excess of 2,000t/h.

Bruks Siwertell has long-standing references for cement handling in the US. In 2004, Houston Cement Company in Texas was beginning to plan a new, larger terminal. The company was expanding and looking for an efficient, environmentally friendly, high-capacity method to discharge increasing volumes. It could sell more cement than it could import and needed to replace an existing pneumatic ship unloading system.

In 2006, a rail-mounted Siwertell ST 640-D unloader, designed to offer cement unloading rates of up to 1,500t/h, was delivered to Houston Cement. Once commissioned, performance tests revealed impressive results: the ship unloader met the guaranteed rated capacity and actually exceeded it to deliver 1,646t/h. The through-ship capacity was also in excess of the guaranteed rate of 1,050t/h and energy consumption tests, achieving 0.39kWh/h, were surpassed as well.

The unloader was also one of the first to feature an auto level mode, now standard. It ensures that the vertical conveyor's counter-rotating inlet feeder, which effectively forces material into the screw, is kept at an optimum level. By the feeder not digging too deep, or too shallow, unloading efficiency is kept at an optimum level.

HIGH-EFFICIENCY HANDLING

Optimum efficiency at the Houston Cement terminal is also ensured by the jetty belt conveyors being longer than the vessels the terminal receives. This allows the ship unloader to move past the bow and stern of the vessel and for the ship unloader's conveying arm to pendulate at an angle into the furthest corners of the vessel, particularly in the forward hold, under the deck and hatches.

The entire system is enclosed from the vessel to the jetty conveyors, via a moveable transfer trolley, and through the terminal's 100,000 metric ton capacity storage silos.

The unloading rates offered by Siwertell technology at Houston Cement set a new world record and were so far ahead of the market that the unloader remains extremely competitive today. At the time, it was also the largest Siwertell unloader dedicated to cement.

The unloader has now handled more than 10 million metric tons of cement. Its high-capacity capabilities meant a reduction in unloading days of 50%, translating into a 50% reduction in berth occupancy and the possibility of higher annual intakes; return on investment was achieved in less than two years.

A GOOD REPUTATION

The Houston Cement installation has gone on to be heavily influential in Bruks Siwertell securing other cement handling contracts in the US. In 2019, the company delivered a high-capacity Siwertell ST 640-M screw-type ship unloader to South Texas Cement's terminal in the US port of Corpus Christi, after being contracted by cement handler GCCM Holdings LCC. It, too, is capable of 1,500t/h throughput.

The specifications for the choice of unloader were stringent; aside from the expansion in throughput, GCCM Holdings LCC and South Texas Cement also discussed through-life maintenance costs and electrical demand, both of which were deemed to be lower for a screw-type unloader than a pneumatic system of equivalent throughput.

"When combining all of the deciding factors that led to choosing a mechanical unloader, it was apparent that Siwertell was the best fit for our needs," said a GCCM Holdings and South Texas Cement spokesperson at the time of the order. "We especially like the high rate of unloading combined with the versatility to handle various ship sizes."

Last year, Bruks Siwertell was awarded a contract to supply the US-based

Colonial Group with a new high-capacity Siwertell 490 F-type ship unloader. The fully enclosed system will deliver dust-free cement handling for the company's Savannah, Georgia, terminal, and supports Colonial's cement import growth. The unloader is planned for commissioning later this year and will offer a rated cement handling capacity of 800t/h, discharging vessels up to panamax size.

NEW OPPORTUNITIES AHEAD

Not all imports will be handled at dedicated terminals, however, and the complex dynamics of the construction industry leave some operators seeking a more flexible approach. "We have seen an influx of interest in Siwertell road-mobile unloaders, specific to the cement industry, as cement demand continues to rise," says Upchurch.

Siwertell road-mobile unloader orders were secured in the US last year and this trend is continuing. Most recently, Bruks Siwertell secured a new Siwertell road-mobile ship unloader order for cement handling operations in the Gulf of Mexico region of the USA. Its new, undisclosed owners already operate numerous Siwertell screw-type ship unloaders, recognising their ability to protect the environment from dust and spillage, and to offer a cost-effective dry bulk handling solution, with low operating costs in comparison with other technologies.

"During his election campaign, President Joe Biden pledged to 'build back better', and recent reports suggest that there may be as much as US\$1tn on the table for roads, bridges, rail, and other infrastructure," notes Upchurch.

"This is very encouraging news for the US and clearly, it will need a lot of cement to make these plans a reality. Whatever strategy importers adopt for meeting this growth, our US cement handling deliveries, and installations across the world, show that Bruks Siwertell will be with them every step of the way."

For more information, contact:
bruks-siwertell.com

JOINING THE SMART SET

Digitalisation and sensor technology are being rolled out at a pace in ports across the globe to improve operational performance — and grabs and cranes are a key part of this smart revolution



UK port operator *Associated British Ports* and *BT* have recently announced they are trialling the next generation of *Internet of Things (IoT)* and sensor technology to speed up the movement and processing of cargo goods and digitise the *Port of Ipswich's* logistics and operations processes.

ABP and BT have installed IoT devices on cranes and transport equipment, which are used for the safe and efficient collection and transportation of cargoes across the port. The data generated by BT's IoT solution are captured, analysed and visualised on BT's Intelligent Asset platform to make the unloading and transportation of cargoes more efficient – in near real time.

The solution interprets the data from a wide range of port equipment, providing a record of time, travel distance, routes taken and weight of goods unloaded. The information is then automatically sent to port management, allowing them to track the progress of the ship-to-shore operations.

This allows the Port of Ipswich operational team make rapid, data-driven management decisions, and facilitate more collaborative decision-making with customers, making the

best use of resources and assets to meet customer demand.

In addition to tracking the movement of assets, the data collected from BT's IoT solution also monitors periods of inactivity, under-utilisation and maintenance requirements. For instance, the data provides better understanding of the resourcing of crane drivers and uses that analysis to reduce costs, as well as greenhouse gasses.

Cranes are used more when downtime is assessed accurately and resources can be flexibly deployed to reduce periods of inactivity. The solution also gathers insights such as how often the equipment is being used and how much distance they have covered. This provides an accurate view of maintenance requirements for plant equipment and machinery.

LIEBHERR DEVELOPMENTS

As situations in ports change, crane and grab manufacturers have to come up with new developments that meet today's requirement. Liebherr, for example, has been adapting its products to be able to meet changing requirements for the use of eco-friendly fuels.

The company's mobile harbour crane series is being modified so that cranes

can run on fossil-free HVO 100 diesel. The diesel reduces emissions by up to 90% and is derived from renewable raw materials.

Additionally, a fundamentally revised hybrid drive for the mobile harbour crane will be introduced shortly. The revision will allow users to switch between two different modes: the boost mode, which provides extra power for faster handling, and the eco mode, which significantly reduces fuel consumption. The future-orientated hybrid drive offers the user a high degree of flexibility. Depending on the individual situation, the innovative system can be individually tuned and thus delivers optimal performance in every situation.

CRANE REPLACEMENT

As it seeks to reduce emissions, the Port of Hamburg Rhenus Midgard has replaced its Liebherr LHM 320 with a new Liebherr machine. The LHM 420, recently delivered by project logistics specialist Rhenus Project Logistics, will mainly handle breakbulk and containers at the Dradenau Terminal in the port.

In addition to a significant increase in productivity, the crane also means a further reduction in emissions thanks to state-of-the-art drive and

exhaust technology. It will also give Rhenus Midgard higher handling speeds, an increased maximum load and more outreach. This investment is another step towards increasing the company's productivity.

Helge Behrend, managing director of Rhenus Midgard Hamburg, comments: "With the new mobile harbour crane, we will see further increases in handling volumes and, in combination with the "Greenliner" concept that has been successfully established for more than 10 years now – moving goods from the road to the water – we will make an even greater contribution in Hamburg to reducing emissions and relieving the pressure on roads."

The LHM 420 was delivered from Rostock to Hamburg in fully assembled condition. The new machine has a maximum lifting capacity of up to 124 tonnes and a 48m boom for best reach.

"The new crane means both productivity increases and cost reductions for Rhenus Midgard Hamburg. Liebherr is proud to be part of the 'Greenliner Concept' initiated by Rhenus Midgard with the LHM 420 and thus to reduce emissions," says Eric Hein, Liebherr sales manager for mobile harbour cranes in the German speaking countries.



LIEBHERR LHM 420 IN ACTION

NEMAG: LOWER COSTS, INCREASED PRODUCTIVITY

COMPANY NEWS

Nemag's award-winning, innovative nemaX dry bulk grab was developed in close co-operation with leading bulk terminal operators, crane manufacturers, technical universities and other stakeholders in the industry.

Besides obvious benefits such as increased productivity, energy savings and more sustainable operations, the nemaX also offers optimum maintenance efficiency, with a strong focus on cost-effectiveness. Since the total maintenance costs of a grab will exceed the asset investment costs over time, this constitutes a significant advantage.

When assessing the financial aspects of a grab, two elements are key: the asset investment costs (CAPEX) and the

operating expenditure (OPEX). The asset investment costs of a grab can be easily determined by looking at the purchase order. The operating expenditure is more difficult to trace back to an individual grab though — it is often “hidden” in general maintenance budgets.

Bulk terminals with clear insight into maintenance costs have, however, concluded that the total maintenance costs of a grab constitute a more significant factor than its asset investment costs. Calculated over the grab's lifespan, the average asset investment costs of a four-rope grab amount to around 1 eurocent per tonne of cargo transferred. In terms of grab maintenance costs, this can however be as much as 2-3 eurocents per tonne of cargo handled.

“ From a maintenance point of view we appreciate the fact that the nemaX grab has only very few points of rotation and is extremely simple to maintain. Compared to a conventional clamshell grab, we expect that maintenance costs will be significantly lower and productivity will be significantly higher.

We can say that Nemag has succeeded in developing a kind of ‘ideal grab’: light, high volume, fast, easy to control, and easy to maintain

OVET





“Regular wear and tear can never be fully prevented, but the nemaX allows you to achieve substantial savings in terms of maintenance

Martine Dekker-Grootveld, account manager

INNOVATIVE DESIGN FEATURES

“Regular wear and tear can never be fully prevented, but the nemaX allows customers to achieve substantial savings in terms of maintenance,” says account manager Martine Dekker-Grootveld. This significantly helps to reduce operational expenditure and downtime, crucial in view of the pressure on handling rates that terminals are experiencing due to overcapacity in the dry bulk sector. Through exhaustive computer simulations, the nemaX offers the following innovative design features:

- 1. Minimal number of moving parts**
The nemaX design features a minimal number of moving parts: only two sheaves and 70% fewer moving parts than in a comparable clamshell grab.
- 2. Only two main pivot points**
The nemaX has just two main pivot points with high-quality spherical roller bearings. In comparison, a comparable clamshell grab with slide bearings features 12 main pivot points.
- 3. Durable closing cables**
The way in which the hoisting wires have been reeved reduces flexing along the sheave blocks by 75% compared

to a 2x5-part clamshell grab. Metal fatigue in the closing cables is reduced proportionately, resulting in a longer operational lifespan for these cables. And nemaX’s unique operational design minimises the clogging and wear of sheave blocks and closing cables and significantly extends the lifespan of the closing cables.

- 4. Closing cables are easy and safe to switch**
The anchor points of the closing cables are located at an accessible working height, making it easy and safe to reeve in new closing cables without needing to set up an elevated work platform of scaffolding.
- 5. Based on full FEM calculations**
The grab mechanism and shells have been entirely optimised by means of computer simulations. In addition to performance simulations based on DEM (Discrete Elements Method) and MBD (Multi Body Dynamics), the mechanism has been optimised with the aid of Finite Element Method (FEM). Nemag’s extensive grab construction expertise and on-the-ground experience have been incorporated in these FEM calculations.

- 6. Robust design**
The nemaX® grab has an exceptionally robust, patented symmetrical layout.
- 7. High stability**
The grab design features various highly specific structural solutions that, combined, provide high stability and lend the grab a strong structural resistance against impact.

“Here at Nemag, we have always had this intrinsic drive to improve, to innovate and raise the bar,” says sales manager Riny Stoutjesdijk. “It’s simply part of our Passion for Performance. More and more terminals around the world are now efficiently using the nemaX for limestone, pelletised bauxite, blast furnace sand, aggregates, lead concentrates, copper concentrates and minerals (rutile/zircon) as well. In many cases, the nemaX is the only grab that a dry bulk terminal will ever need.”



For more information, contact:
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nemag.com



MILESTONE DELIVERY

Ghana Ports and Harbours Authority (GPHA) has taken delivery of the 1,300th maritime crane produced at Liebherr's Rostock facility since production began in 2005.

The milestone LHM 550 mobile harbour crane can lift its maximum capacity of 154 tonnes to a radius of 18m and has a maximum radius of 54m. Offering hook heights up to 45m above the quay and 15m below, it has rope speeds of up to 120m per minute.

Ordered with a second unit, both LHM 550s will be shipped 5,500km from Rostock to Ghana on the heavy lift vessel BBC-Russia for the West African Port of Tema. The order will take the number of Liebherr mobile harbour cranes delivered to GPHA up to eight.

REMOTE WORKING

The pandemic has accelerated use of remote methods of working and using remote service apps to carry out remote assembly of mobile harbour cranes is one area that the Liebherr group has been working on.

As the company explains, the coronavirus pandemic has given digital transformation extraordinary impetus over the past year, demonstrating that there most certainly are solutions for performing work without being present on site. Such remote applications

have many benefits and are currently experiencing a veritable boom. Liebherr has been working for many years on various remote products.

Liebherr's Remote Service app is especially well suited as a diagnosis tool for repairs or for remote maintenance on cranes, excavators and construction machines. It can be used around the world in real time and can transmit visual information, allowing fast and efficient customer support when it is needed.

Liebherr also offers remote diagnostics for its new generation cranes. If a problem occurs, a service engineer can connect to the crane control via an encrypted mobile phone connection and therefore assist when troubleshooting is needed to solve a problem. "Remote tools allow issues with the machine to be identified more quickly, avoiding unnecessary journeys for maintenance – an especially important factor in times of corona and travel restrictions," the company says. "Precise fault diagnosis allows the correct parts to be ordered so that the crawler crane, rope excavator, maritime crane, deep foundation machine or mobile crane can quickly be put back into operation."

Another innovation is smart glasses, which are a practical tool for providing fast assistance to customers in faraway places without having to send a

technician around straight away. The glasses allow pictures to be simply shared and discussed. So this remote tool not only avoids the need for travel, but also saves substantial costs and makes customer service more efficient.

Liebherr uses smart glasses for earthmoving machines and material handling technology. This enables digital remote support for service and maintenance cases: the customer wears the smart glasses and a live image is transmitted directly to a Liebherr service technician. They then carry out a fault diagnosis and, ideally, find a solution to the problem.

BOOMING MARKET

The crane and hoist sector is expected to grow from \$26bn in 2021 to \$33bn by 2026, according to a report published by MarketsandMarkets. It is expected to grow at a CAGR of 4.8% from 2021 to 2026, with the key factors driving the growth including significant demand from the construction industry, an expanding mining industry and increased use in shipping industry.

According to the report: "The mobile crane segment held the larger share of the global crane and hoist market in 2020. The growth of the mobile cranes segment is mainly driven by their features such as high mobility, high traveling speed and requirement of less time to set them up on construction sites. The use of mobile cranes in the mining, construction, aerospace and shipping and material handling industries has gained popularity, where lifting and lowering activities require extensive displacements of objects, materials, or equipment."

The hydraulic operations segment held the largest share of the global crane and hoist market in 2020. The growth of the hydraulic-operated cranes market is driven by their increasing demand in construction and material handling activities. The use of hydraulic technology ensures efficient use of energy and reduces the need for power and is widely used for hoisting and moving heavy materials in warehouses and industrial workshops. The use of hydraulic cranes is increasing due to the space constraint in different industries,

such as construction and shipping and material handling, and assembly lines. The covid-19 pandemic has affected the growth of the overall crane market, the report says, which has consequently hampered the growth of the hydraulic-operated crane market.

The Asia Pacific region is expected to hold the largest share of the crane and hoist market and is estimated to witness the highest rate during the forecast period. Asia Pacific is the most rapidly growing market and offers high opportunities for the construction industry, which is driven by the growing population. Construction and material handling industries have grown rapidly and consequently have driven the market for cranes in India, China, and Australia.

The growing awareness related to automation and the increasing emphasis of leading economies such as China and Japan on construction and material handling industries are some of the primary factors contributing to the largest market share in Asia Pacific.

NEXT GENERATION

Konecranes has recently launched its sixth generation of mobile harbour cranes as global trade accelerates and the industry seeks more sustainable lifting solutions to reduce its climate impact.

Generation 6 marks the first comprehensive revamp of Konecranes Gottwald's mobile harbour crane portfolio in 15 years, the company says, and comes as growth in the global bulk and general cargo handling market accelerates.

Research from Drewry Maritime Advisors forecasts the global bulk and general cargo handling market, excluding RoRo and vehicle traffic, to grow 6.8% year-on-year in 2021 to 7.4bn tonnes. Drewry expects growth to continue in coming years, reaching 8.5bn tonnes by 2025, a compound annual growth rate of 3.5%.

Konecranes, which launched the world's first mobile harbour crane in 1956 and is a pioneer in ecolifting, has worked closely with customers around the world while developing the new cranes. The result is a range of

products that can eco-efficiently service essentially any type of vessel and any kind of cargo – containers, general cargo, project cargo and bulk – in any location, either on the quay or on a barge. Sales are now underway.

"Konecranes is a pioneer and leader in high-performance mobile harbour cranes, and the launch underscores that pedigree at a time when growth in the global bulk and cargo handling market gathers pace and customers are seeking more sustainable solutions," says Konecranes president and chief executive Rob Smith.

"These cranes represent the best of Konecranes in terms of technology and durability, and thus also strongly support our commitment to sustainability. The carbon footprint of our customers is just as important as our own, and we aim to reduce it through low-carbon, eco-efficient solutions and by extending product lifecycles in ports, factories and everywhere our products and services are used."

Generation 6 is designed for electrical power use; power can be sourced from an onshore grid, meaning no direct carbon emissions during operation.

Operators can also choose a new battery solution that reduces emissions and gives greater flexibility by permitting crane operation independent from the grid. For quays without a power supply – a common occurrence in developing markets – the cranes come with fuel-saving diesel generators and Konecranes' latest hybrid drives.

"Stevedores globally, big and small, are increasingly focused on reducing the carbon footprint of their operations in the near term. Growing trade and the need to replace old equipment is likely to mean increased demand from ports around the world for more efficient cargo handling equipment to support increases in productivity, reduction of costs and CO₂ emissions," says Dinesh Sharma, director at Drewry Maritime Advisors.

Konecranes has also recently launched its online self-service Product Advisor, which gives customers the chance to configure their own cranes, facilitating the purchasing process at a time when face-to-face meetings – the main way the industry has done business for decades – can be difficult due to the pandemic.



KONECRANES' SIXTH GENERATION OF MOBILE HARBOUR CRANES © KONECRANES

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.

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



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EXTRA EFFICIENT

Suppliers of new ship loading technology are forging ahead with new designs in efforts to improve handling efficiency in ports as pressures have been to move goods faster and cheaper

Bruks Siwertell has now completed the commissioning of a new Siwertell ST 640-M screw-type ship unloader in Texas for owners who have switched from bagged to bulk deliveries of cement and building materials.

“The operator was looking to expand its US operations,” explains Bruks Siwertell contract manager Per Wahlström. “For some time, it has imported bagged deliveries of cement, but bulk imports hold the potential for greater market impact.”

Part of the work involved building a new terminal with the Siwertell unloader being light enough to minimise costs, but deliver the through-ship capacity required.

The new rail-mounted Siwertell unloader offers continuous dust-free cement handling at a rated capacity of 1,500t/h, with a peak capacity of 1,650t/h, discharging vessels up to 80,000dwt. Furthermore, as it is totally enclosed, no dry bulk material is lost through spillage.

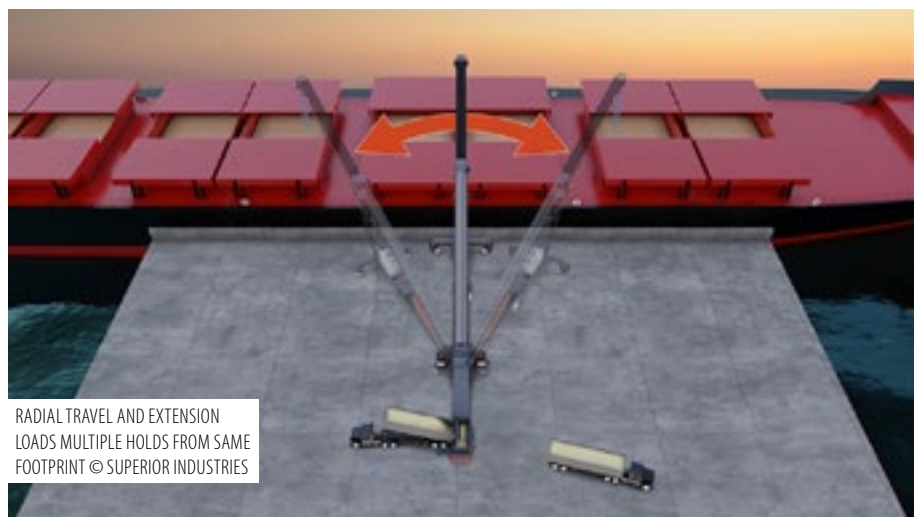
SINGLE MINDED

Bulk material processing and handling supplier Superior Industries has recently completed development of a new model TeleStacker conveyor for loading dry bulk cargo ships. This multi-purpose, highly mobile conveyor incorporates truck unloading and ship loading capabilities into a single machine.

“Since expanding our TeleStacker conveyor to marine-based applications



SIDE UNLOAD MODEL HAS TIGHT FOOTPRINT FOR SMALL SPACES © SUPERIOR INDUSTRIES



RADIAL TRAVEL AND EXTENSION LOADS MULTIPLE HOLDS FROM SAME FOOTPRINT © SUPERIOR INDUSTRIES

in the early 2000s, we've collected hundreds of data points, design preferences and functional requirements from operators and engineers," says Scott Gulan, sales manager at Superior. "We gathered all their feedback and combined it with the knowledge we've gained to produce an impressive, multi-functional ship loading conveyor."

Mobility, says Superior, is one of the most important functions of the new ship loading equipment. All-wheel travel capability means moves are easy throughout confined quays and terminals including carousel, crab, parallel, inline and radial movements.

Adjusting wheel positions takes less than a minute, which means moving from hatch to hatch or from storage to operation is easier and faster than ever. Many movements can take place during active material handling to maintain consistent feeding of the ship.

Another feature is the conveyor's integrated truck unloading system. That means the truck's ramps, hopper and conveyor are all connected to the tail end of the conveyor.

Owners and operators will eliminate costly double-handling and preserve material quality from bed of truck to hold of ship. The incorporated truck unloader is operated by the same power source, which lifts or lowers the undercarriage during transportation or adjustment of the truck target.

"Since the unloading and loading machines are one, they move and operate seamlessly and neatly," says Gulan. "This greatly reduces all the time it takes for operators who historically managed the relocation of several pieces of gear."

Several environmentally-friendly features are incorporated into the design. These include fugitive material reduction and collection systems such as fully-sealed transfer points and load zones, enclosed belting, drip pans, spray bars and dust collection systems.

The mobile conveyors are quiet, compact and finished with corrosion resistant coatings and hardware.

MOBILE FEEDERS

Nakhodka commercial sea port has taken delivery of several customised mobile bulk material handling systems from Edge Innovate.

The port is one of the largest stevedoring companies in the Far East of Russia, with rail connections linking Asia and Europe.

Reducing dust contamination, removing ferrous metals from the cargo and improving loading efficiencies are key considerations at the port.

Edge has supplied two conveyor trains systems, one to be utilised at the port's coal terminal and the second to go online this year at Nakhodka's universal cargo terminal. The conveyor trains are designed for closed transportation of bulk cargo to port warehouses, with a parallel three-stage cleaning system for the removal of ferrous metal.

Edge Innovate has also supplied feed stackers, one telescopic conveyor and a bespoke track-mounted, radial stacker as part of the package.

The two Edge FMS mobile feeders are fitted with vibrating live heads, high capacity overband magnets and dust covers. Loaded directly via large wheel shovels, the FMS mobile feed hoppers ensure a controlled flow of material. The vibrating live heads ensure the delivery of "in-spec" product with the rejection of oversize material. The high-powered, height-adjustable magnet fitted on the FMS provides the first stage of ferrous metal removal from the coal cargo. A bespoke dust cover on the unit's discharge conveyor reduces dust contamination.

Material is transferred on to an Edge MTS140 mobile telescopic conveyor, which has also been enclosed with steel dust covers and spray bars to further reduce dust contamination. The MTS-Series cover 140ft and encompasses two conveyors, an automated stockpiling control system, variable discharge height and is electrically powered.

Cargo transferred by the MTS140 telescopic conveyor is fed into a bespoke cascade feed hopper fitted to an Edge RTS100 to further reduce dust creation. The Edge RTS100 is equipped with

an automatic stockpiling programme allowing it to create a large radial stockpile and to adjust discharge heights automatically.

The third and final clean of the cargo is facilitated by a height-adjustable, high-power magnet found on the RTS100 conveyor. The total capacity of one conveyor train is 900 tonnes per hour.

LOADING COMPUTER

Calculating cargo loads is a vital ingredient of safety planning for vessels and Finnish company NAPA has developed a number of data-led solutions for safety, efficiency and productivity in ship design and operations, including its loading computer software.

As the company points out, the ability to optimise loads while minimising stress and safety risk is a key competitive advantage for shipowners and operators, and the company has completed some 2000 installations onboard. NAPA's Loading Computer safely ensures optimal planning of stowage, cargo and ballast for every ship type. The system covers a wide range of calculations related to hydrostatics, intact stability, damage stability and longitudinal strength.

The bulker version of NAPA Loading Computer is an effective and straightforward tool for defining and planning everyday loading conditions and performing accurate stability and strength calculations.

It covers the needs for different types of bulk carriers, including iron ore, grain and coal.

NAPA's Loading Computer comes with a clear, easy-to-use and dynamic graphical user interface. This includes tools for cargo loading monitoring and damage calculations and the ability to load different kinds of bulk in one cargo hold simultaneously.

The NAPA Loading Computer is 100% compatible with the NAPA ship design software used by the world's leading shipyards and classification societies and is compatible with Lloyd's Register and DNV-GL Emergency Response Services.

ECO-FRIENDLY OPTIONS

From hybrid power to innovative design, self-unloading ship manufacturers are coming up with a range of pioneering vessels to deal with environmental concerns



As operators move towards more eco-friendly shipping, hybrid-powered vessels are just one option to consider. Aasen Shipping is one company that is moving into the hybrid power segment with its newbuildings.

The company says it is one of the first to build hybrid-powered bulk carriers and has ordered two 9,000dwt self-dischargers for delivery at the end of this year.

The ships will be the largest self-dischargers with excavators in the market, Aasen says, and special features will include battery packages to reduce fuel consumption of about 400 tons per year, battery packs that allow the vessels to manoeuvre in port without the use of the main engine and an electric excavators enabling nearly noise-free loading and discharging operations.

The ships will also be able to connect to shore power, which make them emissions-free when in port. Variable

KICK-STARTING AN EFFICIENT OPERATION

COMPANY NEWS

French agri-food group Soufflet in Rouen recently took delivery of the new Neuero Kiko (kick-in kick-out) shiploader, which has a loading capacity of up to 1,200t/h of grain with minimal dust emission. After four successful installations in the region, the Neuero Kiko DSH (dust suppression head) has impressed port operators with its efficient operation and high dust suppression, due to mass flow control.

The shiploader was assembled in Germany and transported using a heavy lift ship to France. The most significant advantage of this means of transport is the short downtime of the terminal. However, such transport is not easy and requires a lot

of planning and preparation. Therefore Neuero and Soufflet already agreed on this shipment method at the beginning of the project so that lifting points and lashing points could be integrated into the machine design.

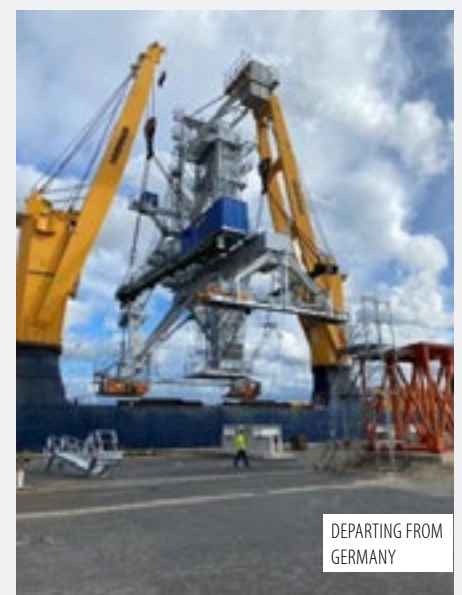
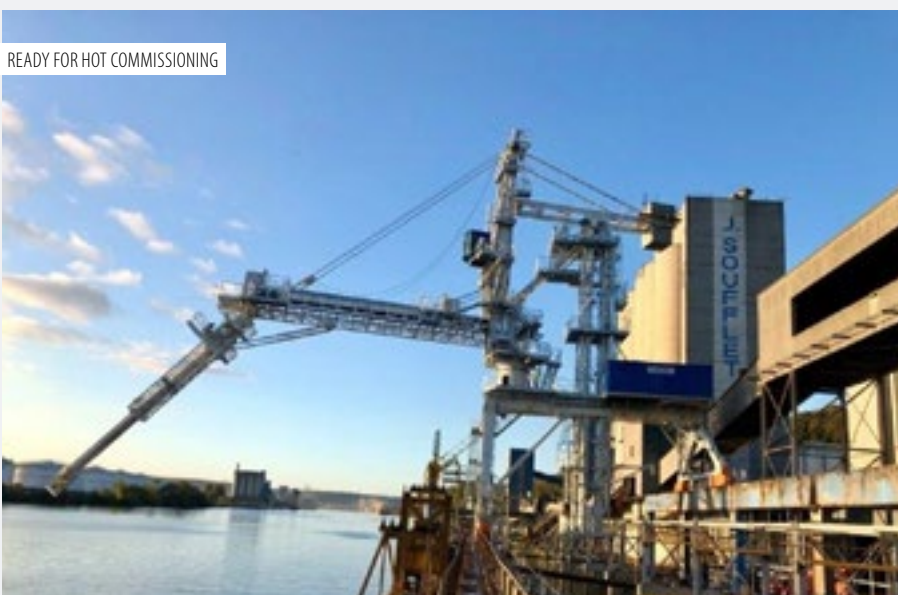
Heavy lift cranes set the shiploader into position at the site and Neuero was able to begin dry testing. The next step was hot commissioning after the site conveyor was ready.

So what is the difference that makes the Kiko DSH operate so efficiently and with the highest environmental standards available today? The answer is a combination of mass flow and pendulum movements. The mass flow allows loading

of the cargo at low speeds, reducing dust emission. The shiploader does not eliminate dust completely, but reduces it significantly, therefore avoiding product segregation and slow material discharge speed. Older systems throw the product at boom height and try to stop it at arrival, especially during hatch trimming work where it is needed to fill all gaps.

The pendulum movement that we call Kiko allows the loading head to move simultaneously with the vertical telescope and enclosed system. Additionally, the slewing movement allows all areas of the hold to be reached, including the corners.

For more information, visit: neuero.de/en



revolution on the main engine means consumption and emissions will be reduced further when vessels are slow steaming. The ships also have an optimised hull design and eco control of the propeller and main engine enabling optimal operations.

ALGOMA NEWBUILD PLANS

Algoma Central Corporation has recently announced plans with Yangzijiang Shipyard in Taicang City, China, to build a new Seaway-Max self-unloading vessel for its domestic dry-bulk fleet.

The as-yet unnamed vessel will be the first of the new Equinox 2.0 Class, a design that builds on the original Equinox Class standards to achieve better fuel efficiency, improved speed at lower engine power and enhanced deadweight capacity.

The new Equinox 2.0 incorporates a number of design changes, including various weight-saving innovations and a reconfigured stern that incorporates a dual-rudder design to increase cargo hold size, resulting in an increase in the capacity of the vessel by approximately 1,440m tonnes.

Other design improvements include an efficiency upgrade to the propeller and changes in the shape of cargo holds to improve the handling of certain “sticky” cargoes.

“We are very excited to exercise one of our options at the Yangzijiang shipyard for the first Equinox 2.0 vessel”, says Gregg Ruhl, Algoma chief executive. “Our in-house design team is relentless in its pursuit of improvements in our vessel designs. Each previous Equinox Class ship incorporated modest improvements over its predecessors, as we learned more about the vessels during construction and as they entered operations.

“The changes made for this vessel were such an improvement over the previous design that we feel adding a version number to the design name makes sense,” Ruhl continues.

The new vessel is scheduled to replace the *Algoma Transport*, one of the oldest vessels in the Algoma dry-bulk fleet. Construction of the ship will begin

in late 2022 and the vessel is expected to join the fleet at the beginning of the 2024 navigation season.

Algoma also recently took delivery of *Captain Henry Jackman*, its new Equinox Class gearless bulk carrier.

Both the *Captain Henry Jackman* and the new Equinox 2.0 ship feature important sustainability advantages that will help Algoma meet its greenhouse gas targets, reducing the amount of emissions per cargo tonne-kilometre.

STATE-OF-THE-ART SHIP

K+S Windsor Salt and Canada Steamship Lines (CSL) have announced a strategic partnership to build a new state-of-the-art self-unloading ship. With a deadweight of 26,000m tons, the ship will chart new waters in safe, sustainable and efficient shipping in the Gulf of St Lawrence and Great Lakes region.

Windsor Salt and CSL began construction of the custom-made vessel in August 2020 after several years of collaborative planning, which included an environmental impact analysis, ship and shore personnel safety reviews, an efficiency evaluation of cargo operations, and navigational optimisation.

The distinctive, purpose-designed vessel was created to service Windsor Salt’s need to deliver de-icing salt from its Mines Seleine salt mine on the Magdalen Islands to stockpiles in Montreal, Quebec City, and other destinations within the provinces of Quebec and Newfoundland.

Windsor Salt’s consistent and timely delivery of de-icing salt helps keep roadways safe during the winter season across Eastern Canada. The new vessel will bring a long-term, safe, sustainable and reliable shipping solution to the region that relies on the Mines Seleine salt mine.

“Through our partnership with CSL, we wanted to prove not only that we could, but we should strive for better because it’s important to challenge the status quo, especially when we have the opportunity to reduce our environmental impact and improve safety while delivering our de-icing salt,”

says Tom Labash, marine distribution manager for Windsor Salt.

Given the shipping route is located in the sensitive marine environment of the Magdalen Islands in the Gulf of St Lawrence, Windsor Salt and CSL worked together to bring several innovations to enhance sustainability and reduce the environmental footprint of the new ship, including diesel-electric tier 3 engines and a unique hull design that will contribute to cutting CO₂ emissions and improve energy efficiency, a ballast water treatment system that is expected to reduce the transfer of invasive species and quieter machinery that will reduce vessel noise to protect the area’s North Atlantic right whales and other marine mammals.

Compared to the previous vessel servicing the same salt routes, the new ship is expected to emit approximately 25% less greenhouse gas emissions and 80% fewer harmful air pollutants. The new ship also features several innovations to enhance efficiency and safety including:

- » A fixed, single point of loading system with a single hopper into which the salt is loaded, combined with a cargo handling system that eliminates the need for the vessel to shift during loading, which will improve the efficiency of cargo operations and the safety of ship and shore personnel.
- » A modern hull design and state-of-the-art propulsion system to enhance the manoeuvrability of the vessel and increase the safety of navigation in the shallow Magdalen Island channel.

“We are honoured to be joining forces with our long-time customer Windsor Salt – a visionary partner willing to make concrete commitments to integrate sustainable and safety-first choices into their supply chain,” says Louis Martel, CSL Group chief executive. “CSL is very excited about leading the design and construction of this pioneering ship and introducing a new level of safety and environmental sustainability in Canadian waters.”

The vessel is expected to commence operations in the Magdalen Islands at the start of the 2022 navigation season.

TELESTACK: EFFECTIVE MOBILE OPERATIONS

COMPANY NEWS

The installation of a TB52 All Wheel Travel shiploader and TL24 Link Conveyor at Masnedo Bulk Terminal in Denmark is a perfect example of how mobile equipment can be used effectively in any multi-cargo operation.

The terminal's main activity is the export of a range of grains (meal, corns and rapeseed) as well as the import of a range of feedstuffs and other dry bulk products. Masnedo Bulk Terminal is part of a quay-side expansion project using a reclaimed green-field site. The notable investment

has made it one of the largest terminals for storage and export of grains in Northern Europe, loading to handymax to panamax vessels on a 24-hour basis.

The introduction of the TB52 All Wheel Travel Shiploader and the TL 24 Link conveyor has proved to be a key piece of the operation, with a throughput capacity of 1,100tph (currently operating at 700-800tph). One of the main achievements of the installation is the seamless and prompt integration of the Telestack unit within the existing grain storage and

handling system. The mobility of the units meant that there was no civil construction or planning permissions required and the initial capital expenditure (CAPEX) was considerably lower, compared to a fixed infrastructure and mobile harbour crane.

The mobile nature of the equipment also increased the flexibility of the operation when handling dry bulk and means that the units can be manoeuvred into position quickly and easily. They can also be moved into storage effortlessly to allow other aspects of the operation to take place.



The All Wheel Travel system also ensures the reduction/elimination of double handling of the material and allows the transfer of material in a safe and efficient manner. The radial telescopic All Wheel Travel Shiploader is fed from silos via a TL 24 Link Conveyor. The radial and telescopic features of the TB52 ensure enhanced trimming of the vessel from a single feed-in point and the All Wheel Travel system significantly reduces hatch change times and production downtime.

This translates into an increase in production rates as well as a significant reduction in the loading time. The luffing feature of the radial telescopic offers the operator flexibility to easily raise or lower the entire conveyor section depending on the freeboard height of the particular vessel to be loaded. An integrated generator also allows for a truly autonomous unit.

The TB52 Shiploader can load vessels up to panamax size with ease and can offer a complete range of mobility, chutes and dust suppression/ extraction options for specific applications and materials. The bespoke shiploading system at Masnedo

was fitted with a range of environmental features to effectively manage the dusty and free-flowing nature of grains. These included 1,400mm-wide oil-resistant chevron belting, dust containment and extraction systems on the feed-in and transfer points, fully retractable dust covers and side plates on inner conveyor and galvanised dust covers on the outer conveyor, plus a 12m telescopic free-fall Telechute with 360° radial trimming ability.

Commenting on the installation, Telestack's international sales manager Carl Donnelly explains: "Masnedo Bulk Terminal is a great example of the flexibility achieved by using Telestack mobile equipment. The mobility of the units allows Masnedo's operation to be adapted very quickly and easily to meet the changing needs of the port, allowing the operator true flexibility throughout the operation without compromising the high productivity and efficiency targets.

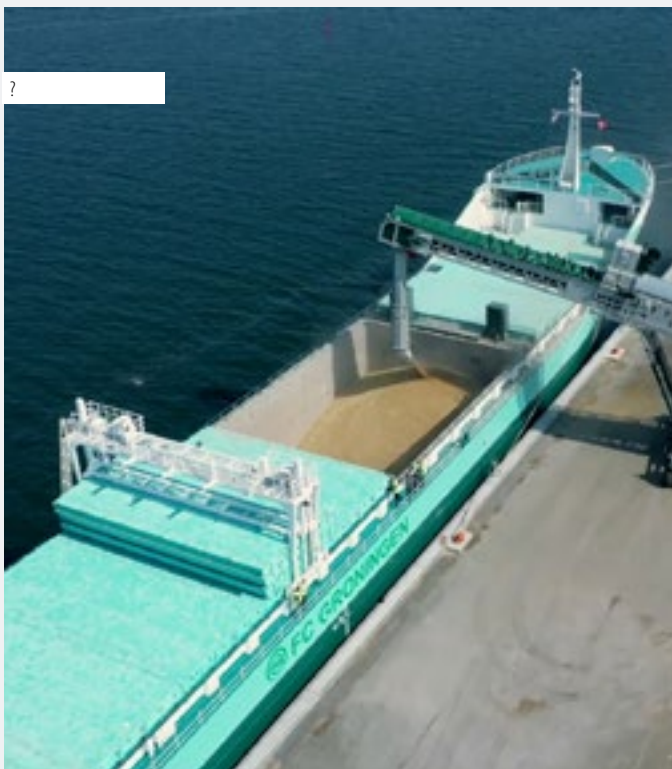
"This was achieved easily within a relatively short lead-time frame and without the initial high investment and infrastructure changes when compared with what may be deemed a more traditional means

of shiploading. Masnedo Bulk Terminals is a smart company and the operational metrics are easily achieved with our equipment. We are delighted that they have found such success with Telestack's mobile technology."

With the voice of the customer at the centre of its business, Telestack enjoys plenty of positive feedback from operators who enjoy the flexibility and ease of use of its equipment. It takes heed of all feedback to ensure it continues to lead the market in mobile and customised bulk material handling systems for inland ports and terminals, aggregates and mining sectors, along the chain of logistics from pit to port, port to plant and pit to plant.

Boasting an enviable portfolio of international installations that span a 35 year history, Telestack's range of equipment encompasses radial telescopic shiploaders, shiploading direct from trucks, direct feed shiploaders, rail mounted shiploaders, cambered boom shiploaders and dockside unloading hoppers.

For more information, contact:
telestack.com



CLOSING THE LID ON HAZARDS

Grain handling can be a hazardous procedure if not dealt with correctly — and dust particles contained in cargoes constitute just one of the hazards that handlers need to contend with when moving grains around the world



Containers have proved to be an increasingly popular means of transporting grain cargoes, according to the TT Club, which has issued some advice on the risks of improper backing of bulk grain in boxes.

Improper packing of bulk grain cargo can lead to the distortion of the container, compromising structural integrity, spillage of contents, contamination and injury to workers when opening container doors.

The TT Club says that “while there are efficiencies in transporting grain in containers, standard general purpose ISO containers are not designed to carry bulk cargoes, meaning additional procedures are required to do so safely”.

According to analysis by the Club, key risks include reduction of structural compressive strength of containers due to distortion. When stacked on board ships or at container terminals there is an increased risk of stack collapse in extreme cases. “Distorted containers can cause damage to a container ship’s cell guides and adjacent units, resulting in delays to cargo operations. Where false bulkheads and labelling have not been utilised, personnel opening and discharging the container may be

crushed as the bulk cargo bursts out of the container upon opening the doors," the Club warns.

Containers may be overweight or overloaded, TT Club continues. Given the dense properties of grain, capacity is restricted by mass rather than volume. The container, when fully packed with the cargo being transported, should not exceed the rated maximum gross mass of the unit (to ensure that it is not overloaded) as well as any intermodal weight restrictions applicable through the entire journey (when the unit would be overweight).

Eccentric load distribution, most commonly caused through inappropriate filling operations and also potentially during rough intermodal movements or handling, can result in vehicle overturns or derailments, the club warns.

Grain cargoes spilt on board ships can also potentially result in significant problems for the ship's bilge system.

In addition, given the nature of the cargo, there is inherent risk of introducing pests into the supply chain. Some pests, such as the Khapra Beetle, can remain hidden in voids within the container for several years.

In the same way, spillage during terminal handling operations or land transport is likely to attract birds and vermin, giving rise to health or injury risks. Contamination of the grain consignment from unclean container units also has to be considered.

Much relies on the expertise of the shipper and packer to ensure that the container is adequately checked, prepared and filled in line with industry guidelines to ensure the integrity of the cargo, the unit itself and general safety through the supply chain, the Club adds.

Working together with its Cargo Integrity Group partners, TT has published *CTU Code – a Quick Guide* to help the broad industry engage more successfully with the CTU Code and assist wider understanding of good packing practices. A key addition to the guide is a Container Packing Checklist providing packers and their supervisors a clear process to ensure safe, secure and

pest free movement of goods. The Club has also developed a Container Packing Game as a simple, fun way to highlight the importance of packing skills.

The TT Club has also provided some tips to assist those transporting grain cargoes. "Shippers should specify a dry bulk container, which then must meet or exceed standards similar to the ISO 1496 Part 4 specifications or equivalent that include additional end wall strength."

They should also check the container to ensure it is free from signs of damage, pest contamination or previous cargo residues, as well as paying attention to the condition of the container doors, floors, side panels and load capacity ratings. "Where possible inspect the base structure. Any defects or concerns with the container should be discussed with the container operator," the Club says.

During packing and filling, even load distribution of the cargo is evidently important. If the cargo does not use the full volume of the container, it is important to ensure that the height of the cargo is kept constant throughout the container, minimising pressure on the side walls and reducing eccentricity, the Club says. Those packing the container also need to ensure that the packing process does not give rise to an opportunity for pests to enter the container and each packed container must be weighed and certified prior to dispatching into intermodal transportation, the Club explains.

At the end of the packing process, units need to be comprehensively checked to ensure "no distortion or leakage is evident or anticipated while in intermodal transportation. Determine that visible parts of both the interior and the exterior of the container, and the cargo, are free from visible infestation by pests." An ISO 17712 compliant seal for international transport also needs to be affixed.

TERMINAL TRANSFORMATION

According to grain handling equipment supplier Bruks Siwertell, the past decade has seen Israel's port facilities undergo a gradual transformation. Terminals are replacing outdated dry bulk

handling equipment and, in its place, modern systems are offering vastly improved efficiencies, reliability and environmental protection.

Israel imports around 5m tonnes of grain annually and around 70% of that passes through Haifa, one of its oldest ports.

In line with a population rise, last year, Haifa set a record of importing some 3.5m tonnes of grain. Over the coming years, it is likely that Ashdod will expand its grain handling capabilities following the completion of bridge works, which will see it directly connected to the quay, making it a port terminal. Until then, the majority of grain imports go through Haifa.

With more than 6,700m of quay length, there are several specialised bulk handlers within the port. Operating in its central main area, which was built in 1933, is the Dagon grain terminal, the only one of its kind in the country. Managed by Dagon Israel Granaries Company and owned by Israel Ports Company (IPC), it handles wheat, milling wheat and seed wheat, maize, corn, barley, rapeseed, sorghum, and soya beans.

The grain terminal is critical to the country's agri-bulk imports and in the past five years, the terminal has gone from unloading 125 to 169 vessels per year. Vessels are discharged and their shipments are transferred via a series of conveyor belts protected by a concrete bridge, to silo storage. Dagon has a storage capacity of around 85,000 tonnes, and about 22,000 tonnes of stored grain can be moved from the silo to railcars or trucks each day. At its peak import volume, the silos undergo about 40 cycles a year.

After many years of service, IPC was looking to replace its locally built, double belt-type unloader and two smaller pneumatic unloaders.

"IPC was having to manage increasing volumes of grain imports," explains Bertil Andersson, sales manager at Bruks Siwertell. "Also, its existing equipment had simply reached the end of its service life and needed replacing. IPC was looking for an equivalent capacity,

but from a single unloading system, which could replace its older systems and one that offered a competitive edge when it came to grain. The company decided to consider Siwertell screw-type unloader technology.

"There were some initial challenges," Andersson continues. "This is an extremely busy port and grain shipments cannot wait. So, these types of installations usually require operations to be ongoing. Also, new equipment contracts like these not only need to fit into existing infrastructure, but have to work seamlessly with downstream conveying systems. All of these add to the complexity of replacing older equipment within existing, hard-working terminals.

"In addition to these factors, IPC was on a tight budget and looking for value-for-money, comparing capacity with costs to find the best solution," he notes.

IPC required any new equipment to have a continuous rated capacity of 1,200t/h and, following a comparison process of other available systems, it decided that a new Siwertell 640 M-type, rail-mounted ship unloader offered the best through-ship capacities on the market.

It was the first time that Bruks Siwertell had installed a high-capacity unloader in Israel and, as with any new delivery, the company had to ensure that it understood and complied with local laws and regulations. One of these was to meet a 20% "local content" commitment in the contract.

Bruks Siwertell delivered its new ship unloader in 2018 and this provides a through-ship capacity of 1,200t/h and can handle vessels up to 73,000 dwt. "The unit was commissioned in 2018, comfortably replacing the capacity of the terminal's old equipment and greatly reducing the number of days that vessels were required to be in port," notes Andersson.

MOBILE UNLOADER

Able to handle materials such as grain, soybean meal, alumina and cement, Bruks Siwertell's port-mobile unloader is based on a standardised design to keep investment, maintenance and wear parts costs as low as possible, the port-mobile

unloader is available as a (grain) 400t/h or a 600t/h unit; the Siwertell 400 PMU and the Siwertell 600 PMU. They are an ideal solution for operators looking for a port-based system and are able to discharge vessels up to 60,000dwt.

One of the greatest advantages when unloading delicate agri-bulk and sensitive powdery cargoes, such as alumina, with Siwertell screw-conveyor technology is low material degradation rates. These are delivered through an efficient, continuous conveying velocity, which avoids collisions between material particles and the inner wall of the conveyor, and therefore reduces the production of powdery fines.

Fines are problematic for many types of cargo and particularly so for grain and alumina, posing some significant financial and safety concerns.

For grain, the presence of fines can mean that the whole shipment is downgraded. They can make it more difficult to aerate, which increases spoilage rates, and they also have to be removed before milling. Furthermore, the greater the number of fines produced, the greater the dust emissions, raising the risk of fire and explosion in storage silos and other confined areas.



TILBURY WORK CONTINUES


Major building work began earlier this year at the UK's largest grain terminal at the Port of Tilbury following a fire in 2020 that damaged its grain silos.

The Tilbury Grain terminal has been in operation for more than 50 years and is a key strategic facility in the South East of the UK for the grain import and export markets, handling more than 2m tonnes of product from around the world. Grain is a key commodity in the UK food supply chain for a number of uses, most notably within the flour milling and bakery industries.

Demolition of the damaged concrete silos is underway and, at the same time, construction of phase one of metal silos is underway with the first three new silos having been constructed. The new silos, both phase one and phase two that will see the reconstruction of the concrete silos, will come online in stages. Phase one is expected to return 20,000 metric tonnes of capacity in early 2022 and the remaining 34,000 metric tonnes of storage will be restored in 2023. These will all be constructed to the highest health and safety standards and will be industry leading.

Peter Ward, commercial director at Tilbury says: "The grain terminal is a vital asset at the Port of Tilbury and plays a major role in supplying businesses with the grain needed to support their brands. Following the fire last summer, we worked hard to ensure there was limited interruption to customer service and now with the new silos being constructed, we can be confident that the new facility will set the highest industry standards for silo construction. In the meantime, we want to extend our thanks to our customer base for the loyalty and support they have shown us through what has been a difficult period."

During these works there will be no interruption to customer service as the terminal remains fully open for import and exports and once complete, the terminal will be restored to its full storage capacity of 135,000 metric tonnes and will continue to benefit from the full multimodal services at the port including river barge transportation into central London.



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.

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- » Ship unloading
- » Biomass potential and possible future trends

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CHINA CAUSES A RALLYING CRY

BY BASIL KARATZAS

After years of betrayed expectations, the iron ore and capesize shipping markets are enjoying some time in the sun



What a difference a year makes – and we are not talking just about the improved health prospects with the covid-19 pandemic since the summer of 2020. We are primarily impressed with the commodities rally and their rejuvenated fortunes, as well as the revitalised prospects of many complimentary industries.

In short, last summer industrial activity globally had collapsed since governments imposed restrictions (“essential employees” only were allowed to be present at work) in order to restrain the spread of the virus. Inventories were depleted and commodities were destocked. All along, consumer patterns shifted and supply chains were adversely affected. As the covid-19 vaccine materialised sooner than expected, countries and whole industries struggled to normalise production. But they had to face several complications.

When thinking of iron ore at a global level, the discussion effectively is about China – it represents three quarters of the world’s consumption, a great deal of it imported. And here is where it gets interesting. China’s iron ore imports exceed 1bn tons per annum, which by itself is an impressive number and a

logistical achievement in its own right; it takes 7,000 modern capesize vessels to hold such an astonishing amount of cargo.

China's iron ore imports are sourced from several countries, but for all practical purposes, Brazil and Australia procure most of China's iron ore imports; in 2020, China imported approximately 760m tons of iron ore from Australia and 240m tons from Brazil (and another 110m tons from South Africa, India, Canada and Peru). And, both Brazil and Australia pose "procurement" concerns from China's point of view.

Brazil, for whatever reasons – political and otherwise – has been one of the countries globally most affected by covid-19, which has affected mining output and also loading and port operations. In 2020, while Chinese iron ore imports increased (year-on-year), Brazil's market share declined as the country could not catch up with demand. Floods and related events have also affected Brazilian iron exports and 2021 so far does not look bright for Brazil (its market share has shrunk materially so far this year).

Australia would appear to be the obvious candidate to pick up Brazil's slack, and Australians would be all too happy to do so. But again, China has been "displeased" with the Australian government's comments on China's record on human rights, and thus, there has been a centralised effort to displace Australian imports to China with imports from other countries. But again, if you are the biggest player in the iron market in the global market by far, there are no quick substitutes.

On the back of China's insatiable demand this year, among other factors, commodities prices have experienced a strong bull market not seen since the days of the super-cycle in 2008. Specifically for iron ore, prices in early summer exceeded \$180 per ton; as a comparison, iron ore was priced at just \$80 per ton in 2020, thus a more than two-fold price increase and a four-fold increase from 2016. Bull markets in the commodities markets often lead to bull markets for the freight markets and

shipping, as buyers and sellers scramble to get their hands on ships to move cargo promptly and lock-in strong prices. Spot freight rates for capesize vessels, the primary transporter of iron ore by seaways shipment, have topped \$40,000 per diem in early summer, while this time last year the market was sustainably below \$10,000 per diem.

And, yet, many analysts and some shipowners have gone on to aver their opinion for a market reaching \$100,000 by year's end. Probably ambitious expectations, but again, in a market where supply chains have marginal room for error, it will not take much to spook the market, at least temporarily.

Demand for iron ore is expected to keep growing in the foreseeable future, which bodes well for the capesize market. China is expected to remain the main driver for such demand, which, in general is favourable for the capesize market, given that additional demand for iron ore is likely to be sourced from overseas.

There are, however, a few underlying themes that a careful student of the markets should pay attention to.

The first of them, and based on China's prior geopolitical behaviour (anyone remembers China's multi-year grudge against Norwegian salmon imports because of its disapproval of the Nobel Committee's certain choice?), China will keep looking for ways to diversify away from Australian ore imports. As Brazil does not seem to have the extra capacity, other global sources will be sought.

The West African country of Guinea seems to be a promising new producer and exporter, and China has definitely done its best to make this country and project part of their "One Belt, One Road" initiative. It will take two to four years for Guinea iron ore mines to come to full fruition (and they will never be able to replace those of Australia), but definitely it would be sufficient to affect the market.

Furthermore, for the freight market, as Guinea is twice as far from China as Australia, this could be considered a favourable development for the capesize market.

But again, what if China were to put more emphasis on its own domestic iron ore mining industry? China is one of the world's richest countries with iron ore deposits, but the quality is rather poor. It is likely to cost twice as much to produce steel from low-quality domestic iron ores and this is before counting the extra carbon emissions to produce it.

There has been a growing pressure in China to go ahead with the local iron ore mining industry, and damned be the costs and emissions; as with any other Chinese riddle, it would be hard to decipher on time, but the potential negative impact on the iron ore trade, including shipping, cannot be ignored.

One has to keep in mind that the current rally in the iron ore market was partially induced from supply chain disruptions due to environmental concerns, as steel mills at the city of Tangshan, China's top steelmaking city, were ordered to partially shut down due to heightened local pollution levels, shutdowns that drove a steel price rally, which in turn, made steel mills in other areas of China to increase production and benefit from higher steel prices.

Like anything else in the current market, the iron ore rally (and the dry bulk and capesize freight market rally) are welcome news. However, it's hard to allocate the rally to structural demand, pent-up demand due to a bouncing economy, and demand due to inefficient supply chains (that have been disrupted or try to cope with new patterns).

For sure, miners and shipowners have been benefiting handsomely at the moment and we are glad to see them doing so after many long years of losses. But, irrespective the true causes of the current rally, demand for iron ore is expected to keep growing in the foreseeable future, given demand for steel. Any shifts to trading patterns, production and consumption are likely to amplify the positive effect on the market.

Basil M Karatzas is the Founder and CEO of Karatzas Marine Advisors & Co in New York. For more information, please visit: karatzas.auction

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TIME TO PUT SEAFARERS FIRST

The mental and physical health of seafarers continues to be of vital importance in the current climate. In recent weeks, the International Chamber of Shipping, among other organisations, has been calling for governments to prioritise them for vaccinations



Esbén Poulsson, chairman of the board at the International Chamber of Shipping (ICS), said that governments needed to respond to the dire situation of seafarers as a matter of urgency.

“In my 50 years in the maritime industry, the crew change crisis has been unprecedented in the devastating impact it has had on seafarers around the world”, he said, following the conclusion of ICS’s quarterly board meeting.

“We cannot continue to turn a blind eye to the plight of hundreds of thousands of seafarers. All nations have benefited from their sacrifice throughout the pandemic. Those same nations have a duty to prioritise seafarers for vaccinations and keep their word to allow crew changes.

“We will be feeling the ripple effects of this crisis for years to come, but today, governments have a chance to take meaningful action to protect seafarers and global trade. They must seize it. Seafarers cannot survive on platitudes. The ships sounding their horns today are letting national governments know that the world is watching.”

ICS recently released a video spotlighting seafarers affected by

the crisis. In it, they urgently call on governments to recognise them as key workers, in line with UN recommendations.

Some 200,000 seafarers are currently affected by restrictions that prohibit them from leaving their ships. According to the latest data from the Global Maritime Forum, the crisis is worsening: the number of seafarers working over their contracts has grown from 5.8% in May 2021 to 7.4% in June.

ICS estimates that 900,000 seafarers are from developing nations with limited vaccine supplies. At present, 12 countries are prioritising seafarers for the vaccine and ports across the US, Belgium and the Netherlands are vaccinating crews delivering goods in their ports, regardless of nationality.

ICS has published a *Seafarer Vaccination Roadmap*, which outlines clear steps for how countries around the world can quickly and effectively create seafarer vaccine hubs in their ports.

WELLNESS AT SEA

More than 50 shipping companies are participating in the Sailors' Society's Wellness at Sea Awareness programme, giving their crews, their families and shore staff vital wellness training and support to help them physically and mentally cope with the stresses of the pandemic.

The 27-week programme started recently, providing a series of resources and advice about staying well across the main areas of life — from relationships to mental health, physical fitness to spiritual wellbeing.

Sara Baade, chief executive of the

Sailors' Society, says: "We're delighted that so many companies are getting on board with Wellness at Sea and recognising just how important good physical and mental wellbeing is for the people that power the shipping industry."

"This has never been more important than now, as the pandemic continues to surge through crew supply countries, causing even more uncertainties and anxieties over job security and length of contracts.

"There is a real risk of a mental health pandemic that will far outlast the virus — but if we work together to give seafarers, their families and shore staff this advice and support, we can help turn the tide on this crisis, protecting the future of our industry and the people it relies on."

The free programme, which ran last year in response to the pandemic, has now expanded to include advice and support for seafarers' families and shore staff, as well as the crews themselves.

Chris South, senior underwriter at West of England P&I Club says: "Crew mental wellbeing has often been overlooked when compared with the attention given to physical safety. West is proud to sponsor Sailors' Society's Wellness at Sea programme.

"We are pleased to see that focus has shifted throughout the pandemic, with more seafarers gaining access to help with programmes such as Wellness at Sea, but more still needs to be done. Along with Sailors' Society, we hope to engage owners, managers and wider stakeholders in the shipping industry, all of whom rely on seafarers for the safe and efficient operation of their crew

and vessels."

The Wellness at Sea Awareness programme will provide a variety of materials, from posters to podcasts, which have been specially developed for crews, their families and shore staff.

They will also be given the opportunity to join peer support groups and invited to take advantage of Sailors' Society's helpline, which offers free help for those struggling with their mental health — or who would just benefit from someone to talk to.

Peter Langslow, managing director of Swire Pacific Offshore Operations, adds: "As a shipowner and long term partner of Sailors' Society, Swire Pacific Offshore (SPO) recognises the strong support to seafarers and their families that the charity has always provided.

"Since 2019, we have adopted the Wellness at Sea programme, aiming to equip our seafarers with the best resources and tools to cope with the heightened stresses caused by the pandemic. With the structured wellness programme and access to Sailors' Society's confidential helpline, our seafarers are empowered to take charge of their own mental wellbeing as well as to be more mindful of the wellbeing of their co-workers.

"The feedback from our seafarers has been positive, and we have recently extended the helpline and chat function to our seafarers' families, and also conducted online Wellness at Work workshops for shore-based employees."

The awareness campaign is just one of the resources on offer as part of Sailors' Society's Wellness at Sea campaign — from training to chaplaincy support and arranging counselling for those who need it.

The charity has also announced that it is updating its Wellness at Sea e-learning platform in response to the pandemic and will be making it free for all seafarers when it launches later in the year.

Sailors' Society's emergency helpline offers free advice and support to any seafarer and can be reached on +1 938 222 8181 or wellnessatsea.org/helpline.



DRONE INSPECTIONS

Mitsui OSK Lines (MOL) and Autonomous Control Systems Laboratory (ACSL) have been conducting demonstration tests using a flying drone to inspect the hold of an MOL-operated coal carrier in May.

Given the depth of holds, human access for inspection purposes is problematic and the use of drones has the potential to address this issue. Many drones use Global Navigation Satellite Systems, which are difficult to access for enclosed spaces such as inside cargo holds when the hatch cover is closed. They therefore have to be operated manually on board.

MOL and ACSL completed a successful autonomous flight of an ACSL drone, ACSL-PF2 equipped with LiDAR SLAM technology, which can estimate its own position in holds with the hatch cover closed. MOL and ACSL also succeeded in shooting high-definition inspection images, even in dark areas, using a high resolution camera.

PUTTING A STOP TO PIRACY

The round table of shipowners' associations and Oil Companies International Marine Forum (OCIMF) have expressed their full support for the launch of Nigeria's Deep Blue Project.

Nigeria has recently announced a significant investment in military and law enforcement infrastructure to secure its maritime domain as part of a stepping up of actions to address the ongoing piracy issue in the Gulf of Guinea.

Managed by the Nigerian Maritime Safety Agency (NIMASA), the multi-agency project will significantly increase maritime security in the region, an area blighted by piracy, armed robbery, and other maritime crimes.

A central command and control centre based in Lagos will oversee a network of integrated assets including two special mission vessels, two special mission long-range aircraft, 17 fast-response vessels capable of speeds of 50 knots, three helicopters, and four airborne drones, providing 24/7 cover for the region. These complement the Yaounde ICC structure offering real

capability to both Nigeria and the region.

It is the hope of the industry organisations that Deep Blue, co-ordinated with other navies and programmes through the mechanism of the Gulf of Guinea Maritime Collaboration Forum/SHADE, will seriously impact on the ability of pirate groups to prey on merchant shipping.

Guy Platten, International Chamber of Shipping secretary general, says: "The Deep Blue Project can be a game-changer in the fight against piracy in the Gulf of Guinea and we congratulate Nigeria in launching the project despite the significant difficulties presented by covid-19."

"We look forward to continuing our close co-operation with NIMASA and the Nigerian Navy to realise our shared vision of a region free from the threat of piracy and armed robbery."

David Loosley, BIMCO secretary general, says: "Deep Blue becoming operational represents a significant opportunity to expand law and order at sea in co-operation with international forces in the area. We look forward to seeing Nigeria make the best of these assets to the benefit of Nigeria, its citizens and economy and, of course, the

seafarers from all over the world going about their daily business in the Gulf of Guinea."

Kostas Gkonis, secretary general of Intercargo, comments: "Along with our sincere congratulations to the Nigerian authorities on the launch of this important initiative, on behalf of the dry bulk shipping sector, we very much anticipate that the Deep Blue Project will make a significant impact in reducing piracy and armed robbery, protecting seafarers, ships and the essential trade that serves the peoples of countries in the region."

Robert Drysdale, managing director of OCIMF, says: "The launch of the Deep Blue Project marks a milestone of delivering state of the art, multi-faceted, maritime capability. It presents a great opportunity to protect seafarers and the maritime domain. The collaborative approach by all stakeholders to deliver Deep Blue is commendable and proves what can be achieved when all work together. OCIMF congratulates the Nigerian authorities and welcomes this historical moment."

"Deep Blue will benefit Nigeria, the region and all those who trade in the Gulf of Guinea waters."



ADDRESSING CYBER THREATS

Cybersecurity continues to be a major consideration as the industry remains vulnerable to hacking.

HudsonCyber has launched its PortLogix application, an innovative cybersecurity programme management system specifically designed for ports, port facilities and terminal operators. PortLogix helps port stakeholders assess their cybersecurity capabilities, discover gaps, identify and prioritise solutions, benchmark progress, and demonstrate cybersecurity capability maturity.

As in many industries across the globe, cyber attacks in the maritime industry are on the rise. Since the start of the covid-19 pandemic, the maritime industry as a whole has seen an unprecedented increase in the quantity and variety of cyber attacks. Prominent port and maritime organisations, including the International Maritime Organization, have suffered cyber attacks. Accordingly, ports, port facilities and terminal operators are increasingly

recognising the urgency of addressing the challenge of cyber threats.

"We are proud to have developed an approach that enables ports, port facilities and terminal operators to meet the difficult cybersecurity challenges facing them today," says Cynthia Hudson, chief executive of HudsonAnalytix. "Our PortLogix platform and methodology will provide them with a roadmap of recommendations to support their journey toward more sustainable cyber risk management and make informed decisions on how best to protect their valuable systems and data that underlie modern global logistics."

Piloted in seven ports in the US and the Dominican Republic, PortLogix users have employed the program to establish where and how they can most efficiently allocate precious resources, enabling them to benchmark their cybersecurity capability progress over time, helping them sustain their long-term cyber risk management efforts.

SAFE MOORING

Cavotec's MoorMaster technology has been selected for installation at a roll-on/roll-off berth in a key market in the Far East. This is the first installation of the mooring system in Asia.

The MoorMaster system will moor a 180m-long roll-on/roll-off vessel. The aim is to create a safer and less stressful work environment for employees on board the vessel and ashore. It will also contribute to greater berth availability due to reduced vessel motion.

MoorMaster eliminates the need for conventional mooring lines by replacing them with automated vacuum pads that moor and release vessels in seconds. Its patent-protected Active Control technology minimises vessel motion, thereby drastically improving port productivity.

First introduced 20 years ago, MoorMaster is the only proven and widely used vacuum mooring technology, according to Cavotec.

SEA OF DISTRACTIONS

Chirp Maritime's latest safety initiative, the *Sea of Distractions* video aims to alert industry players to the dangers of being distracted by mobile phones and other personal equipment when working.

This safety initiative is centred on the misuse of personal devices (such as mobile phones, mp4 players, tablets) while on duty in the workplace, which may cause distraction with potentially serious safety implications. Essentially this is "texting while driving", the company says

While the context of the video is the maritime industry, the science and lessons contained within are clearly transferrable to other industries. Watch the video at: [youtube.com/watch?v=7JcDNVIXE](https://www.youtube.com/watch?v=7JcDNVIXE)



MEETING TARGETS

Decarbonisation and digitalisation are just two of the challenges currently facing the industry, topping the agenda at recent meetings both at the International Maritime Organization and the International Association of Classification Societies

At the recent meeting of the International Association of Classification Societies (IACS) Council, it was recognised that the industry is under pressure to act swiftly to address the challenges of decarbonisation and digitalisation. Classification societies need to maintain the pace as far as their parallel role of maintaining safety is concerned.

At this 83rd session, the IACS council agreed to speed up its existing work programme to ensure it could provide maximum assistance to owners and shipbuilders aiming to meet the new demands.

One plan is to set up an expert group on the safety of new technologies and zero or very low carbon fuels to develop positions on these issues, as well as to ensure that measures agreed in IMO can be effectively implemented at a global level. IACS is also moving forward with recommendations on remote surveys and work on modernising SOLAS and other regulations that need to keep pace with new technologies.

Noting that digitalisation can only be successful if cyber systems are secure, the Council meeting also welcomed the progress toward the development

of requirements for cyber resilience of on-board systems and equipment, and work to incorporate this into regulation. There will also be further discussions with industry on new proposals to IMO following the completion of its regulatory scoping exercise on Marine Autonomous Surface Ships.

“ There is a need for an even louder voice from IACS during this decade of rapid change

Speaking at the council meeting, IACS' new chairman, Nick Brown – the chief executive of Lloyd's Register was elected in April and officially took up his position for what will be a two-and-a-half years term – highlighted “the need for an even louder voice from IACS during this decade of rapid change as

new technologies and new fuels need to be thoroughly understood and risks of adoption mitigated against”.

Noting the increasing calls for IACS to be more responsive, more visible and more openly and proactively engaged on the big topics facing the industry, Brown continued: “There is lots for IACS to do and collaboration with all industry stakeholders will be key to our mutual success.” In this context, he paid tribute to outgoing chairman Koichi Fujiwara's achievements in delivering the significant governance changes necessary to ensure IACS maintains its unique ability to both contribute to and harmonise diverse work streams and to also give institutional effect to new ideas and practices.

As he handed over the chairmanship, Koichi Fujiwara said: “IACS response to the covid-19 pandemic and its rapid expansion of remote surveys was vital in ensuring business continuity in shipping, while maintaining high safety standards. I hope that the agility displayed in this instance will be replicated elsewhere as the new governance changes start to take effect. I am proud to leave IACS well-positioned to assist industry and regulators in meeting the many challenges ahead.”

NO COMPROMISE ON SAFETY

Following on from the International Maritime Organization's (IMO) Marine Environmental Protection Committee meeting recently, Intercargo emphasised there would be no compromise on safety as the industry seeks to introduce technical and operational measures aimed at reducing greenhouse gases in the shipping segment.

Chairman of Intercargo Dimitris Fafalios said: "We note the measures adopted by IMO thus far, but must remind the industry that bulk carriers are highly efficient and already operate within very tightly defined technical and operational parameters. Bulk operators are faced with the very real dilemma of determining exactly how to further improve the operational performance of already efficient ships, especially following adoption of the technological solutions currently available.

"Imposing further technical and operational constraints beyond given limits that cannot be overridden in practice inevitably brings forward safety considerations that cannot be ignored. Intercargo will be closely looking into these safety dimensions associated with shipping's decarbonisation and will bring them forward to IMO's Committees as needed for their due consideration."

Intercargo says the world bulk carrier fleet has made significant contributions to the reduction of greenhouse gasses. "It has already achieved approximately 30% or 40% reductions in carbon intensity (compared to 2008) depending on the method of calculation. Further cuts will be challenging and potential effects on safety will need to be closely monitored."

For calculating a vessel's Energy Efficiency Index (EEXI), the use of 83% MCR limited as the power of main engines may have significant safety consequences. Initial calculations indicate that some bulkers may have to limit their power by 40%. Although the power limitation can be overridden, Intercargo has concerns on how this will work in practice, especially when minimum safe power, crew, vessel and cargo safety are considered.

DECARBONISATION NOTATIONS

DNV has released the latest updates to its rules for ship classification, with a raft of new class notations designed to enable the maritime industry to tackle the decarbonisation challenge.

The new updates include "Fuel Ready", a class notation that offers shipowners the option to prepare for a later conversion to multiple different alternative fuel options, and "Gas-fuelled ammonia" for ammonia-fuelled vessels, to stay ahead of shipping's ever tightening carbon reduction requirements.

DNV's annual report on the energy transition in shipping – *Maritime Forecast to 2050* – has identified fuel choice as the most critical decision facing shipowners and operators today. Maintaining flexibility in the choice of fuel, especially when the bunkering environment is in flux, can minimise the risk of stranded assets and maintain a vessel's lifetime competitiveness.

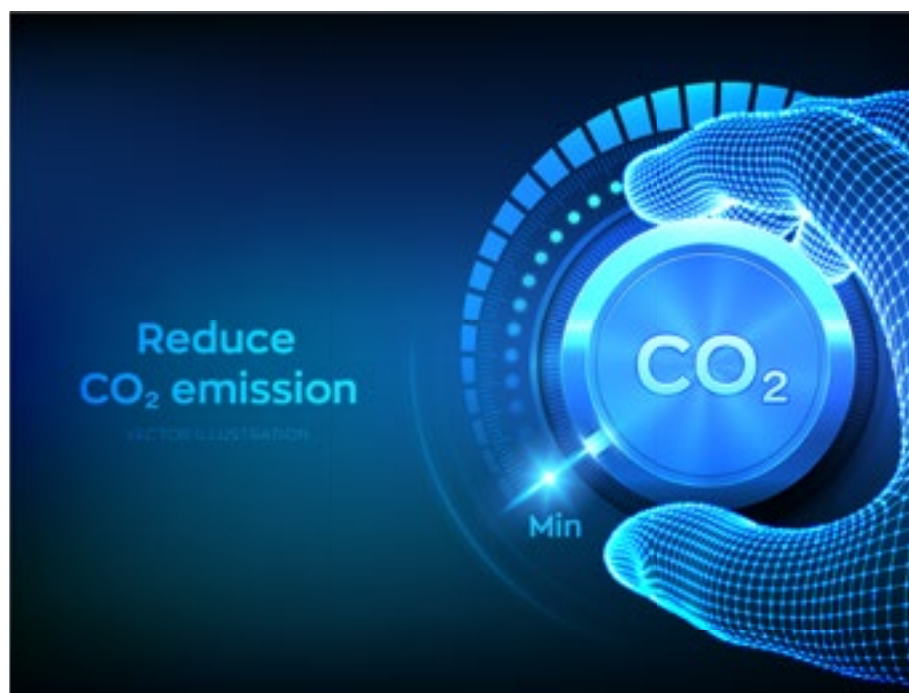
"The whole maritime industry, in particular shipowners and operators, is facing a great deal of uncertainty around their choice of future fuel," says Knut Ørbeck-Nilssen, chief executive of DNV Maritime. "With the industry under pressure to bend the carbon

curve towards zero, inaction is not an option, but picking a future winner in a complicated fuel landscape is a significant challenge. "Fuel Ready" gives owners the option to tailor their future conversion with more than one fuel in mind, while "Gas-fuelled ammonia" provides a practical path for owners who are looking to move towards a zero-carbon fuel option with their next newbuilding."

The "Fuel Ready" notation is applicable for ammonia, LNG, LPG and LFL (methanol) as a ship fuel – either individually or for more than one fuel at the same time.

DNV has also updated some of its signature class notations that focus on reducing shipping's overall environmental impact, including: Fuel cell installations, "LFL fuelled" for low-flashpoint, liquid-fuelled engines, the "Silent(E)" notation for underwater noise, and "Quiet" for external airborne noise emissions.

The new notations and rules updates were launched on 1 July, 2021 and enter into force 1 January, 2022. A full description of the rules and links can be found at [dnv.com/news/rules-for-classification-of-ships-july-2021-edition-203529](https://www.dnv.com/news/rules-for-classification-of-ships-july-2021-edition-203529).





LR SALE TO GOLDMAN SACHS

Lloyd's Register (LR) has announced the sale of its Business Assurance and Inspection Services division, including cybersecurity business Nettitude, to Goldman Sachs Asset Management.

The transaction is a key milestone in LR's strategy to become the go-to partner and adviser on compliance, performance and sustainability to the maritime industry and broader ocean economy. The deal is expected to complete during the second half of 2021, following customary antitrust and regulatory approvals.

The transaction will enable LR to better support its clients to respond to the regulatory, economic and societal pressures to digitalise and decarbonise within challenging timeframes. In particular, the divestment will allow accelerated investment in LR's maritime service offering, both organically and through acquisitions.

Chief executive of Lloyd's Register Group Nick Brown says: "We believe this will unlock significant growth potential for both companies. For LR, it comes at a time when there is a pressing need

for specialist maritime advisers to guide clients through fundamental change and to help support their digitalisation and decarbonisation ambitions. This transaction builds on our 260-year heritage in the maritime industry and will strengthen our ability to take our compliance offering to the next level, expand our risk and advisory services and develop industry-leading digital solutions.

"It will also provide greater focus to build LR's role as a leading industry advisor for maritime supply chain safety, resilience, efficiency and performance."

Under its new ownership, Lloyd's Register's Business Assurance & Inspection Services division will adopt the brand name LRQA.

COMPLIANCE PLATFORM

Bureau Veritas has introduced an online platform, VeriSTAR Green, to enable all shipowners to assess their compliance with Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII) regulations. This tool is accessible from Bureau Veritas Marine & Offshore website.

In line with the 2050 International Maritime Organization's ambition to take action to combat climate change and its impacts, new amendments to cut the carbon intensity of existing ships have been adopted by the IMO's Marine Environment Protection Committee. These measures require ships to combine a technical and an operational approach to reduce their carbon intensity.

The set of amendments include the technical requirement to reduce carbon intensity, based on a new EEXI. The EEXI is to be applied for same type of vessels as the EEDI (merchant vessels of 400GT and above) with specific targets for each vessel type and size.

Amendments also include operational carbon intensity reduction requirements, based on a new operational CII. Vessels will be rated on a five-tiered scale (from A to E) with corrective measures required for ratings D & E. CII will be applicable to merchant vessels of 5000 GT and above.

Shipowners can now access VeriSTAR Green to check a vessel's required EEXI and either request verification or any technical advisory support from Bureau Veritas Solutions M&O, the technical advisory component of Bureau Veritas Group. Additionally, they will soon be able to self-calculate the attained EEXI for each type of ship, as Bureau Veritas will continue to expand VeriSTAR Green with new user-friendly functionalities, in line with MEPC 76 outcomes.

Upcoming features will include a calculation of the carbon intensity index (CII) and the associated rating based on the requirements adopted by the MEPC.

HYDROGEN HANDBOOK

A consortium of 26 leading companies and associations, led by DNV, has launched the *Handbook for Hydrogen-fuelled Vessels* to address the uncertainties surrounding hydrogen as ship fuel. The MarHySafe joint development project (JDP) aims to create a knowledge base for safe hydrogen operations in shipping.

Green hydrogen could play a crucial role in the maritime industry's journey towards decarbonisation. Many in shipping recognise hydrogen's potential as a fuel, but the barriers to realising this potential are substantial. Led by DNV, a consortium of 26 partners and observers have come together in the MarHySafe JDP to examine these challenges.

The *Handbook for Hydrogen-fuelled Vessels* offers a road map towards safe hydrogen operations using proton exchange membrane fuel cells (PEMFC).

It details how to navigate the complex requirements for design and construction, and it covers the most important aspects of hydrogen operations, such as safety and risk mitigation, engineering details for hydrogen systems and implementation phases for maritime applications.

"Green hydrogen is one of the zero carbon fuels that could be vital to meeting the IMO GHG goals but, as with other new fuels, there are still significant challenges regarding its safe and wide-spread implementation," says Knut Ørbeck-Nilssen, CEO DNV Maritime.

Some of the main challenges for hydrogen operations in shipping include the current regulatory framework – which is open to interpretation by different stakeholders – existing knowledge gaps on the safe handling, storing and bunkering of hydrogen, as well as the unique properties of hydrogen that make it challenging to work with.

Download the full report at: dnv.com/maritime/publications/handbook-for-hydrogen-fuelled-vessels-download.html

SURVEY ON FUEL QUALITY

With the International Maritime Organization's 2020 global sulphur limit for marine fuel oil in force for more than a year, BIMCO, The International Chamber of Shipping, Intercargo and Intertanko are now calling on fleet managers, vessel managers, technical superintendents, masters and chief engineers to share their insight and experiences with marine fuels in a new survey aimed at identifying potential quality and quantity issues.

Following on from the industry survey conducted in the first quarter of 2020 that showed the switch to low-sulphur fuel has not been without problems, the four organisations are launching a new survey, this time with the aim to get an even greater understanding of issues encountered by the industry, particularly issues related to the bunkering and use of marine fuel oil.

This survey will run for a year until 1 May 2022 and the information gathered will help identify specific areas in the fuel supply and management chain that need improvement.

The survey comprises two different sections which can be submitted separately:

- Section 1 contains questions related to fuel oil quality and is aimed only at ships using compliant fuel oil i.e., VLSFO and ULSFO.
- Section 2 contains questions related to fuel oil quantity and is for ships using both compliant fuel oil and HSFO with a sulphur content exceeding 0.50% m/m in combination with scrubbers.

For more information visit: bimco.org/news/priority-news/20210506-new-fuel-oil-survey

CALCULATING EMISSIONS

Astrup Fearnley and Veracity by DNV (Veracity) have signed a Memorandum of Understanding to jointly deploy an Emissions Prediction Calculator to the shipping industry. The Calculator will provide shipbrokers, owners, and charterers with quality assured emissions data predictions over the Veracity platform.

The partners will deploy the Emissions Prediction Calculator together. "We have identified common interests – in shipping and ocean industries, reducing emissions and developing technology to create a data-driven transformation in this sector – and we want to collaborate for a more sustainable future," says Søren Greve, chief executive in Fearnleys, the shipbroker business of the Astrup Fearnley group. DNV and Astrup Fearnley will work together to introduce it to the market.

"This is an important sustainability project to us, combining commercial expertise with industrial data and modern technology. With the purpose of supporting decarbonisation in ocean industries, we will work to contribute to the ongoing processes towards energy transition," Greve states.



ASTRUP FEARNLEY AND DNV SIGNING MEMORANDUM OF UNDERSTANDING.

PLANNING AHEAD

As the Indian sub-continent continues to grapple with the coronavirus outbreak, work has been pressing ahead with the development of a national plan for the maritime sector, including a new Indian port bill

Union minister for ports, shipping and waterways Shri Mansukh Mandaviya recently chaired a meeting of the Maritime State Development Council (MSDC) at which he stressed the need to develop a national plan for the development of the maritime sector aimed at the adoption of best practices for the segment.

Underlining the need for the Indian Port Bill 2021, the minister requested state governments to see the Indian Port Bill as a development issue and not as a political issue. He highlighted that the Indian Port Bill 2021 will facilitate optimum management and utilisation of the coastline with participation by both the Union Government and maritime states and union territories. He assured the states that the Ministry of Ports, Shipping and Waterways will welcome all the suggestions of the states to develop a comprehensive port bill.

The minister said the meeting had discussed very significant issues relating to the overall progress of the maritime sector. "Both central government and state governments will jointly work on the development of the maritime sector including several non-functional ports. Our growth aspiration, as envisioned

by our prime minister, need collective actions in a time-bound manner and MSDC is an active platform to discuss these matters".

The key items discussed during the meeting were the Indian Port Bill 2021, the National Maritime Heritage Museum, rail and road connectivity with ports, floating jetties for marine operations and sea plane operations, Sagarmala projects and national infrastructure pipeline projects.

The Indian Port Bill 2021 has the objective of consolidating and amending the law relating to ports, for the safety and security, prevention and containment of pollution at ports, to ensure compliance with the country's obligation under the maritime treaties and international instruments to which India is a party.

Other objectives include taking measures for the conservation of ports; empowering and establishing state maritime boards for effective administration, control and management of non-major ports in India, as well as providing for adjudicatory mechanisms for redressal of port-related disputes and a national council for fostering structured growth and development of the port sector. Optimum utilisation

of the coastline of India is also part of the mix.

In the 2020 financial year, the traffic handled at Indian ports was about 1.2bn tonnes, which is expected to increase to 2.5bn tonnes by 2030. On the other hand, only a few ports in India have draughts deep enough to handle capesize vessels.

In addition, there are around 100 non-functional ports distributed across the coast of India. The ever-increasing size of ships mandated to have deeper draught ports and indeed mega ports need to be developed. Similarly, the non-functional ports also need to be prioritised and developed.

The upgrade of port connectivity is one of the critical enablers for ports, and the ministry through its key initiative Sagarmala Programme emphasises port connectivity. The ministry is undertaking 98 port-road connectivity projects worth ₹45,051 crore, of which 13 projects are completed and 85 projects are in various stages of development and implementation. Similarly, 91 port-rail connectivity projects worth ₹75,213 crore are underway, of which 28 projects are completed and 63 projects are in various stages of development and implementation. Other projects

under consideration include the use of floating jetties.

Speaking at the meeting, the minister emphasised the urgent need for infrastructure development, be it port augmentation, multi-modal connectivity through rail/road infrastructure and various project initiatives undertaken through the Sagarmala, National Infrastructure Pipeline and Sagartat Samridhi Yojana.

PUTTING SEAFARERS FIRST

Union Minister of State for Ports, Shipping and Waterways Shri Mansukh Mandaviya has also been reviewing the status of vaccination of seafarers. Shri Mandaviya suggested that the seafaring industry should not be hampered due to non-vaccination and emphasised that all efforts should be made to get seafarers vaccinated before they joined ships.

India plays a very significant role in the global seafarer industry. There have been demands from many quarters to accord priority to seafarers in the vaccination drive in view of the nature of their work. The Ministry of Ports, Shipping and Waterways (PS&W) also co-ordinated actively with the Ministry of Health and Family Welfare to give priority to seafarers for the covid vaccination.

Major ports have now opened vaccination centres, including Mumbai Port Trust, Cochin Port Trust, Chennai Port Trust, Visakhapatnam Port Trust, Kolkata Port Trust and Tuticorin Port Trust, which have all started vaccinating seafarers at their port hospitals. In addition, a private hospital in Kerala has also been used for vaccinating seafarers.

In view of the excessive requirement of oxygen and related equipment in the country, directions were issued in April under the Major Port Trust Act, 1963 that all major ports, including Kamarajar Port shall waive charges levied by major port trusts, including vessel related charges and storage charges.

There are also plans in place to accord highest priority in the berthing sequence to the vessels carrying consignments of medical grade oxygen,

oxygen tanks, bottles and generators as well as oxygen concentrators, steel pipes for manufacturing oxygen cylinders and associated equipment for three months, or until further notice.

GROWTH ON THE UP

Quarterly growth in exports not only shows the resilience of the exports sector, but also the strength of the Indian economy, according to Dr A Sakthivel, president of the Federation of Indian Export Organisations.

Responding to the trade data for the first quarter of the 2021-22 financial year, Dr Sakthivel said that the highest-ever quarterly growth in exports of 85 % with US\$95bn over the 2020-21 financial year and by 18% over the 2019-20 figures not only shows the resilience of the exports sector, but also the strength of the Indian economy.

Dr Sakthivel also stressed his faith in the exporting community, who in these challenging times have continuously been able to perform. Exports for June, 2021, which for the fourth time in a row, have shown a very impressive growth of 47%, which is also positive for the overall foreign trade sector of the country, he adds.

Dr Sakthivel reiterated that the top sectors during the first quarter of the 2021-22 financial year were iron ore, rice, yarn, engineering goods, plastics and linoleum, organic and inorganic chemicals, electronic goods, petroleum products, marine products and drugs and pharmaceuticals

RISING RICE DEMAND

Essar Shipping, part of Essar Global Fund's services and technology portfolio, recently said two of its handysize vessels *Tvisha* and *Tuhina* weighing 13,000dwt, have been engaged in exports of rice from India to Bangladesh in accordance with the recent bilateral trade agreement signed between the two neighbouring countries.

According to the terms of the agreement, Bangladesh is set to buy 150,000 tonnes of rice from India. It would be first such bilateral deal in the past three years. Speaking on

this development, Ranjit Singh, chief executive of Essar Shipping said: "We are glad to extend our support and services to meet Bangladesh's rising demand for rice. With India's five years pulses import deal with Myanmar, we have bagged a shipment contract for these vessels which is to begin operations in July.

"As new export deals are slated to be signed with the neighbouring nations in the coming months, our vessels will also be engaged in trade in continuation within this region. Also, as we witness the covid wave cooling off across nations, we are hopeful to make the most of this opportunity and capitalise on this trade."

Both the vessels have been continuously employed in back-to-back business to export rice since March 2021.

India saw a surge in farm exports in the 2021 financial year. The surge was driven by record-high sales of rice — 13.9m tonnes of non-basmati and 4.6m tonnes of basmati — and sales of 2.08m tonnes of wheat, a six-year high. In fact, growing demand for rice overseas is expected to be a big win for exporters of the commodity in India.

Bangladesh, the world's third-biggest rice producer with an output of almost 35m tonnes a year, relies on imports from time to time to cope with shortages caused by natural disasters such as floods or drought.

Essar Shipping is India's second largest private-sector shipping company, which has the youngest fleet in the country with a combined deadweight tonnage of 1.12m. This capacity is deployed through both spot market and long-term contracts and contracts of affreightment.

The business has invested in sustainable technologies such as paperless navigation, fitting scrubbers on-board to make vessel emissions International Maritime Organization-compliant, and Green Passports. It is also the first and only Indian shipping company to be certified by the American Bureau of Shipping for compliance with the ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 standards for the operation of its bulk carriers and tankers.

NEW PLANS GIVE PORTS A BOOST

Ambitious plans are afoot to upgrade the South African port of Durban at an estimated cost of \$7bn as the government seeks to boost its performance, while projects are also underway in other South African ports to improve facilities.

According to South African president Cyril Ramaphosa, the government is looking for private sector involvement in the plans to expand the port of Durban, with the aim of promoting it as a driver of economic growth for southern Africa.

Getting involvement from the private sector is seen as key in attracting new investment, upgrading technology and modernising port equipment and infrastructure. A private sector company is expected to be involved in a build-and-operate scheme for a new terminal at the port.

Port projects are expected to include dragging the Maydon Wharf channel in order to accommodate larger vessels. Congestion at the port has been an issue in recent times, leading to delays in getting ships alongside the berth, as well as equipment maintenance issues.

In June, President Ramaphosa announced the incorporation of the Transnet National Ports Authority (TNPA) as an independent subsidiary of state-owned Transnet SOC.

As local law firm Bowmans explains: "The National Ports Act of 2005

envisages an independent national ports authority, as landlord of South Africa's commercial shipping ports and responsible for providing port services and facilities. Until now, however, TNPA has been operated as a division of Transnet contrary to the provisions of the Act, which required TNPA to be corporatised 'as soon as [the Act] takes effect'."

This has led to difficulties in interpreting certain sections of the Act, public perceptions of bias by TNPA in favour of other divisions of Transnet and challenges for organisations such as the Ports Regulator of South Africa to carry out its mandate, the law firm said recently.

"This change represents an important step forward in ensuring South Africa's commercial ports continue to provide globally competitive services and facilities," says Andrew Pike, head of Bowmans' Ports, Transport and Logistics Sector.

"We hope that these reforms will enhance port efficiency, competition, turnaround times and provide a better commercial experience for all port users, including shipowners and charterers."

RICHARDS BAY REVAMP

Meanwhile, the Port of Richards Bay is to undergo a transformation with a number of dry bulk and LNG operations set to relocate from Durban.

The Richards Bay port plan seeks to generate thousands of jobs in the energy and shipping sectors over the next 10-year period as the government seeks to position Durban as a container hub for the region.

By transferring dry bulk and LNG activity to Richards Bay, the government is hoping to free up space in Durban for container activity.

Richards Bay is set to be used to support Transnet's natural gas strategy going forward, by providing storage and import facilities.

The port of Richards Bay, which lies 160km north of the port of Durban, is a strategic industrial port, responsible for exporting commodities such as coal, chrome and magnetite and has been identified as a promising centre for the relocation of liquid bulk business.

Richards Bay is already a key port for coal exports from South Africa. Transnet has said that it plans to maintain coal export targets as it works to shift its

operations to becoming carbon neutral. Plans are also afoot to increase chrome ore and magnetite handling at the port.

The port enjoys a strategic relationship with the Richards Bay Industrial Development Zone, which is situated close to the port, a prime industrial business and trade hub, attracting export-orientated investors as one of the leading Special Economic Zones.

Richards Bay has been known principally as a coal shipment port, but now plans to diversify into a hub for a range of dry bulk cargo.

Given the huge gas fields being developed in Mozambique, Richards Bay is also geographically well placed to profit from the expansion of activity in this area and Transnet plans to expand the area as an energy hub.

Draft indications show that the Bayvue Precinct will be converted into a break bulk zone, increasing the available break bulk land area by 95 hectares. There will be space provided there for two additional berths, while the dry bulk land area will increase by an additional five hectares for additional storage capacity.

NGQURA FACILITY UNDERWAY

In addition, TNPA has made great strides in its efforts to accelerate delivery of the Port of Ngqura Liquid Bulk Terminal. The construction programme will be delivered by Coega Development Corporation (CDC), which has been appointed as an implementation agent for TNPA for a period of two years.

The aim is for the terminal to be operational before the closure of the Port of Port Elizabeth liquid bulk facility, which is scheduled for 31 December 2021. In November 2020, the successful bidder to build, operate and transfer the Port of Ngqura liquid bulk facility decided to halt construction, saying the proposed project was not commercially viable.

The successful bidder's decision meant potentially significant delays in construction of the Ngqura facility, to which the liquid bulk operation is planned to relocate. Furthermore, delays

in the readiness of the Ngqura facility would result in road haulage of liquid bulk products from port import facilities in East London and Mossel Bay as an alternative supply solution, which is not sustainable due to the risk of road infrastructure deterioration as well as safety, health and environmental risks, Transnet says.

The current location of the PE Tank Farm forms part of phase 2 of the waterfront development, a much anticipated development in the Nelson Mandela Bay Municipality.

The CDC is currently responsible for the implementation of the planning, design and construction of similar tanks at the Coega Special Economic Zone, to create a liquid bulk storage solution for a current customer due to be impacted by the pending closure of the liquid bulk facility.

The agreement with CDC will see TNPA also receive technical support, delivery services and systems for the overall delivery of port infrastructure on an assignment by assignment basis.

The agreement is confined to a period of two years, effective from 26 February 2021, to allow TNPA to rebuild its internal capacity, and to ensure that future projects of this nature can be delivered by TNPA as the authority, in accordance with the provisions of the Ports Act.

RAIL CAPACITY INCREASE

Transnet Freight Rail (TFR) has doubled rail capacity for export grain farmers in the Bethlehem area in the Free State province, as the export grain season gets underway.

Through integrated demand planning with farmers, TFR plans to move 550,000 tons of export grain, a 133% increase from 235,826 tons in the previous season.

The 550,000 tons is equivalent to approximately 16,100 trucks off the road, which will have a material impact in easing road congestion in the Port of Durban precinct.

The Western Cape Government has submitted detailed comments to the

Port Consultative Committee regarding challenges affecting operational performance at the Port of Cape Town,

“Central to our submission is the fact that Port of Cape Town users are currently being charged excessive costs that are 146% higher than the global sample average, yet our poor operational performance puts the Port of Cape Town at the bottom of global rankings. This impacts considerably on the global competitiveness of the port of Cape Town which is a key enabler of the economy in the Western Cape,” it says.

The government says it welcomes plans by Transnet Port Terminals (TPT) to seek global operators to invest in port operations and “request that this initiative is incorporated into the official planning as a bold step that will ensure competitive and world-class ports in South Africa.

“We acknowledge that the last year has been a particularly difficult period for the Port of Cape Town, compounded by the covid-19 pandemic, however much of this could have been avoided had there been ongoing investment and maintenance of infrastructure over previous years.

“Major underspending of capital by Transnet Port Authority (TNPA) in the last financial year is very concerning, and it is now critical that this is addressed so that the larger capital budgets for the new financial year are spent as quickly as possible to address the current inefficiencies.

“The under-utilisation of the multi-purpose terminal (MPT) remains a concern, where the operational availability of the two old mobile harbour cranes is a considerable constraint. And so, we welcome the recent delivery of five straddle carriers this week, which will go a long way to improving the efficiency of container handling on the land side in MPT.

“The Port of Cape Town is an important channel for exports and imports, and a major economic gateway for Cape Town, the Western Cape and South Africa.”

CALLS FOR URGENT INVESTMENT

The American Association of Port Authorities (AAPA) is urging Congress to make an immediate and substantial investment in ports as part of the Biden administration's American Jobs Plan

According to port industry leaders, investment is urgently needed to strengthen and modernise US maritime infrastructure and ensure that American ports remain competitive worldwide.

"The consequences of decades-long under-investment in maritime infrastructure are playing out in real time in the form of supply chain disruptions and delays that have been exacerbated by the pandemic," said Chris Connor, American Association of Port Authorities (AAPA) president and chief executive recently.

"Current disruptions will diminish over time, but with global trade volumes forecasted to increase, now is the time for significant and sustained federal investment in a stronger and more resilient port infrastructure."

Consensus for swift port investment spans political parties and a growing number of advocacy groups. American farmers, dockworkers and retailers agree the time for significant infrastructure upgrades is now.

AAPA recently outlined the need for immediate port investment in a letter to President Biden. In addition, port leaders have testified before Congress and joined coalitions to urge action on federal funding. With trillions of dollars

in new spending proposed, AAPA will continue advocating for the greatest amount possible for port investment.

"Spending one dollar on maritime infrastructure returns two to three dollars to the national economy in terms of jobs, growth and productivity," said Connor. "Port funding yields a strong return on investment for American workers and will continue to help drive the nation's recovery. Congress must act now."

TALKING TIME SLOTS

Recent research on port congestion by a group of industry specialists, including Mikael Lind of Research Institutes of Sweden (RISE) and Chalmers University of Technology, has concentrated on the benefits of time slot management for ship departures and arrivals, with reference to experience in West Coast US ports.

According to the research, Improving port congestion with time slot management for ship arrivals and departures, port infrastructures are finite resources that, when used at their limits, become easily disrupted.

Recently, at the US West Coast ports of Long Beach, Los Angeles and Oakland, vessel waiting times reached extraordinary levels, with some of the largest ships waiting nearly three weeks

to get a berth, the report suggests. "Globally, congestion in capacity-constrained ports will continue to occur. The disruption in the container port system in southern China, like in the US West Coast ports, is another example.

"Due to the fundamental nature of global maritime trade, congestion travels across intercontinental supply chains, where for example the congestion on the US West Coast will be relieved by the emerging congestion at South China ports, but will bounce back to the US when the Chinese ports are operating at full capacity again. Record high freight rates reflect the current situation in the maritime sector.

"This is a call for an expansion of the just-in time (JIT) arrival approach to incorporate a slot management concept that includes a dynamic view and management of JIT arrivals and departures."

The report suggests that during the congestion in Oakland, a large number of ships waiting to berth have been steaming in circles outside the port. The port rotations covering Long Beach and Oakland with a usual travelling distance of around 385 nautical miles between the two ports peaked at an average voyage distance for the larger container vessels of more than 1,600 miles.

"The maritime sector is putting increasing focus on seeking opportunities from digitalisation that can enhance co-ordination and synchronisation in the self-organised ecosystem of the maritime supply chain network. One promising initiative is the introduction of virtual vessel arrival and standardised data exchange for JIT arrival promoted by numerous stakeholders associated with the maritime industry.] However, JIT limits itself to a port to ship interface and could result in a one-sided port view which may cause concern for shipping lines particularly during times of port congestion.

"To overcome this and provide a more open management environment, we propose an expansion of the JIT arrival concept to incorporate a slot management concept that includes a dynamic view and management of JIT arrivals and departures. This would rely on shared data providing a common situational awareness for all involved actors of up-to-date progress and planning information on queues and waiting times associated with ports as maritime chokepoints. Such data sharing between all the actors involved in the port call process is already underway through the initiatives of Port Collaborative Decision Making (PortCDM) and Port Call Optimisation.

"Introducing slot management underpinned by data sharing means that ships and ports can continuously share information on anticipated arrival and departure times. This is the basis for improving the management of delays and congestion along the maritime supply chain. It provides an open, data sharing environment where all parties can share a common situational awareness, make their plans accordingly and understand the impact on others. This is something that does not appear to occur regularly at present.

"The maritime industry will benefit from managing uncertainties as they come with high costs for the entire supply chain network as the current surge in ocean container freight rates demonstrates. Acknowledging both the predictability of arrival and departure times will help the industry to move

from the sequencing based on physical presence to virtual coordination to make an important step into an increasingly managed future."

For the full article see: maritimeinformatics.org/wp-content/uploads/2021/06/Improving-a-congested-maritime-supply-chain-with-time-slot-management-for-port-calls_final.pdf

BIMCO CLAUSE

In a bid to encourage wider adoption of just-in-time (JIT) arrival principles in the bulk sector, BIMCO published a new clause for voyage charter parties earlier this year to promote more efficient shipping procedures and as a result, help reduce CO₂ emissions.

The new clause creates a contractual framework to overcome the primary obstacle to just in time arrivals; the obligation on shipowners to proceed with due or utmost despatch and without deviation. This is a critical aspect of making JIT arrivals work. Removing this obstacle will allow ships to optimise their speed and thereby arrive at a port at an optimal time and avoid delays without breaching their usual voyage charter obligations.

BIMCO believes that the widespread adoption of JIT arrivals in the bulk sector will bring many benefits including reductions in fuel consumption, emissions and waiting times in ports and at anchorage. In addition, the concept will make shipping more efficient and improve vessel utilisation. From a charterers' perspective, the JIT scheme should help foster a greater focus on setting more accurate laycans. Currently, charterers often agree laycans that have ships hurrying to arrive at ports to meet a cancelling date only to end up waiting for lengthy periods at anchorage before berthing.

BIMCO's "Just In Time Arrivals Clause for Voyage Charter Parties" gives charterers the right to ask owners to optimise the ship's speed to meet a specified arrival time. If the ship is on its way to a loading port, charterers must in return agree a revised cancelling date. The safety of the ship remains paramount, and any speed adjustment request must fall within the ship's safe

operational limits. The clause also requires charterers to incorporate wording into bills of lading and waybills stating that owners' compliance with charterers' request to reduce speed will not be a breach of the contract of carriage and that charterers.

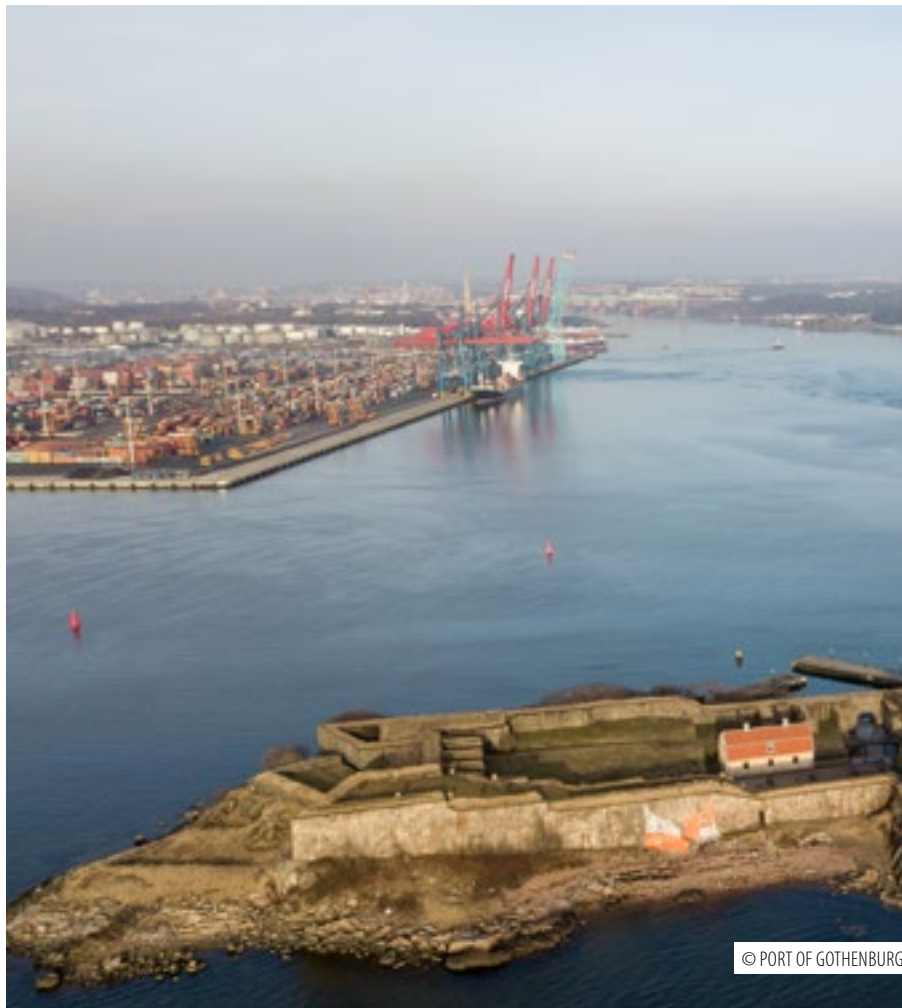
Applying the JIT arrival principle does not normally shorten the overall length of a voyage. It converts what would have been waiting time at a port into extra time spent at sea. The difference is that the extra time at a reduced speed decreases fuel consumption as well as reducing emissions, helping to minimise congestion at ports and anchorages.

The BIMCO clause defines the "extra time" as the difference between the ship's original estimated time of arrival before charterers' request to adjust the speed, and the actual time the ship arrives at its destination. The mechanism for sharing potential bunker savings has been made simple and straightforward. Owners and charterers can simply agree that each takes whatever benefit there may be from the adjusted arrival time - or they can agree that charterers will pay owners a daily compensation amount that takes into account that owners are benefiting from reduced bunker costs. Equally, owners and charterers can, if they wish, agree to apply other compensation mechanisms to suit their needs.

JIT arrival schemes have been successfully implemented in the container sector and BIMCO believes that the bulk sector could also benefit. The bulk sector is not as vertically integrated as the liner trades and has many more "players". As a result, implementing just in time arrival schemes in the bulk sector will require a determined and coordinated effort between owners, charterers and other key stakeholders. Some operators are already using just in time arrival schemes and BIMCO believes that the bulk sector as a whole should actively investigate a more widespread adoption as pressure grows to optimise ships and ports. *Copies of the BIMCO "Just in Time Arrivals Clause for Voyage Charter Parties" can be downloaded from BIMCO's website at [bimco.org](https://www.bimco.org)*

CREATING THE CUTTING EDGE

Digitalisation is definitely a buzz word these days and innovative solutions that make ports more efficient and cost effective continue apace in Scandinavia



© PORT OF GOTHENBURG

A new digital tool is being introduced at the port of Gothenburg, which aims to make calls at the port more time-efficient, cost-effective and environmentally smart.

Berth Planner, developed by the Gothenburg Port Authority in partnership with the Finnish company Awake.AI, is due to be launched shortly. It is hoped that the initiative will provide shipbrokers, pilots and mooring personnel with an easy-to-use tool.

Some 6000 ships call at the Port of Gothenburg every year. With new technology, port calls will be taken to the next level, the port authority says.

"We're working on several fronts to digitalise the port, not only to make calls more efficient, but also to visualise freight flows. Berth Planner is just one of a series of investments that we are making to propel the port of Gothenburg into the future," says Martin Johannesson, IT manager at the port.

"Port of Gothenburg aims to be one of the world's most competitive ports. We are excited to be part of their digitalisation journey and provide Port of Gothenburg with an integrated, smart and user-friendly berth planning tool that will optimise port calls and improve

collaboration between all port actors," says Simo Salminen, vice president of product at Awake.AI.

Berth Planner offers two-way integration – for in-house use by berth planning personnel at the port and for external use by the various parties involved in port calls.

"Berth Planner is more powerful and more comprehensive than anything that is currently available," says Fredrik Rauer, traffic co-ordinator at the Gothenburg Port Authority. "Traffic co-ordinators at port control, safety and security coordinators at the Energy Terminal, and the port's production planners will now have a schematic overview at their disposal.

"It is similar in many ways to a traditional school timetable, where we can see which ships are moored at the different berths," he continues. "Using the map service, we can choose from a list of time slots for each berth. This allows us to see which vessel is due to moor at a particular berth at a particular time. The positioned vessels at berths that have GPS bollards can be seen on the map."

Rapid, accurate information is fundamental in an efficient port call process. A vital element in this process is satisfying the need for a status overview in the planning system. Berth Planner provides access to rapid, relevant status information for external parties, including the pilots, personnel mooring company, and ship's agents, all of whom have a key role to play in the process. The system ensures greater accuracy and predictability, making it more time-efficient, cost-effective and environmentally smart.

"It is important that the call status is transparent and can be communicated clearly to external parties," Rauer continues. "At present, we receive vessel notification from the agent 24 hours before arrival. We then examine the safety and security parameters to determine if the vessel can moor at a particular berth. Co-ordination with the terminal reveals whether this is possible or not. There could be two or three vessels that overlap. From an external point of view, there would appear to be

a risk of conflicting arrival and departure times. With Berth Planner we can allocate a status that has already been coordinated with the terminal and by doing so we can see those vessels that have been confirmed and those that are pending."

Berth Planner enables faster turnaround times and, with more advanced call scheduling, the port is hoping for both time savings and improved efficiency. It will also, it is hoped, help with improving performance and therefore reducing carbon emissions.

POWERING UP

As the attraction of providing shoreside power continues to grow, Gothenburg will be introducing this in its energy port – a move that it hopes will reduce carbon emissions from vessels by 1,800 tonnes per year.

Quays 519, 520 and 521 are some of the busiest at the port and will offer shoreside power starting in 2023. The port has set itself the ambitious target of reducing carbon emissions by 70% through to 2030, including vessels. Shipping also generates local emissions of sulphur dioxide, nitric oxide and particulate matter as well as noise pollution.

"We are about to take the next crucial step by connecting tankers to shoreside power points," said Jörgen Wrennfors, production development engineer at Gothenburg Port Authority. "Doing so in an explosive environment is more complicated, and the Port of Gothenburg looks as if it will become the first port in the world to offer this option. The hope is that other ports will follow suit, creating a basis for a shoreside power standard in explosive environments. Many of the shipping



© PORT OF GÖTHENBURG

companies have commissioned new vessels, and the current development has come at the right time.”

The investment in shoreside power at the Port of Gothenburg Energy Port is partly financed by Klimatklivet, an investment support initiative for local and regional measures that reduce emissions of carbon dioxide and other climate affecting gases. The project has been granted SEK10.7m.

The port is also introducing the first open-access facility in the Nordic region for electric charging and hydrogen gas for heavy goods vehicles, will become operational in 2022.

The station will be located at Vädertorget at the Port of Gothenburg, which is strategically located beside the main roads leading into and out of the port. The fuel company Circle K will run the station, which will offer charging points, hydrogen gas pumps, and bio-based liquefied fuels.

With the port's aim of reducing carbon emissions from transport to and from the port by 70% through to 2030, on the land side carbon emissions in the Gothenburg area will need to be cut by 23,000 tonnes if this goal is to be achieved.

“Overall, the transition is not moving quickly enough for us to meet our target,” says Elvir Dzanic, Gothenburg Port Authority chief executive. “Despite an abundance of ambitions and laudable strategies in the transport sector, what is required is greater co-operation if we are to put into effect the across-the-board approach that will be required to accelerate the transition. We embarked on the Tranzero Initiative to do just that.

“We have highlighted flows that are particularly suited to the transition process. These are mainly flows that are highly repetitive, involve short distances, and include overnight parking at a depot. By the first half of 2022, we will see electrically powered transport flows in the port area.”

The Tranzero Initiative is a joint emission-mitigation project run by the Port of Gothenburg, the Volvo Group, Scania, and Stena Line. The aim is to speed up the transition in the transport

sector to fossil-free fuel alternatives, and in doing so reduce carbon emissions. The focus will be on the one million truck movements at the port each year although the initiative also includes electrification of sea transport.

Within the Tranzero Initiative, a whole series of measures have been employed to transform the transport system. These will be put into effect in the next couple of years, followed by further measures further down the line. These measures will be presented in detail as and when they are ready to be rolled out.

“In the immediate future, there will be a series of incentives at the terminals to promote fossil-free transport, and also measures where hauliers, forwarders, goods owners, as well as the government and the region are important partners. We have established a fruitful dialogue with all parties concerned regarding their roles,” Dzanic adds.

Charging points and hydrogen filling facilities will be developed in stages and will be available in 2022 and 2023/24 respectively. The system will then be expanded with the addition of more locations and increased capacity to keep pace with demand.

INNOVATIVE CARGO PORT

The Port of Bergen plans a new cargo port at Ågotnes, and aims to build what will become a world-leader in innovative and eco-friendly solutions. Backed by the Maritime Cleantech cluster and VTT Technical Research Centre of Finland, Port of Bergen is in the process of applying for an EU grant of some €25m in order to develop a cutting-edge cargo port at Ågotnes.

The goal is to create a hub for zero-emission distribution of goods and services. “What prompted us to start this application process is the planned move of the cargo terminal from Dokken to Ågotnes,” says Even Husby, head of environment at the Port of Bergen. “We are building a state-of-the-art goods cargo port that is ultra-modern, innovative, and eco-friendly.”

EU funding has been made available as part of the Horizon 2020 research and innovation programme. It supports the Green Deal political project, where the goal is to reduce emissions from the transport sector – an initiative in which green ports form an important part. Two European projects may receive funding of up to €25m. “This aligns perfectly with our new cargo-port development, says Husby

Supported by partners such as BKK, Equinor, ABB, and Kongsberg Maritime as well as the Port of London Authority and Port of Reykjavik, “we make a strong team”, says Husby.

POSITIVE OUTCOME

Despite the pandemic, cargo levels have increased substantially at the Danish port of Frederikshavn. An increased amount of cargo – a result of the expansion of the port's warehouses and water depth in Frederikshavn, which allows a larger range of vessel types – has been one of the positive developments in an otherwise difficult time, where the effects of the pandemic have had negative impact and caused insecurity in a number of areas.

“More cargo shows that the conventional port industry is developing as desired,” says chief executive Mikkel Seedorff Sørensen, who explains that the conventional port industry is one of four business areas in focus. The other three business areas are ferry traffic, the environment and recycling industry and maritime services.

There has inevitably been a significant reduction in ferry passengers because of the pandemic and the expansion of facilities in this respect at the port have been delayed because of shutdowns.

Outcomes for the year remain to be seen given the shutdowns. Mikkel Seedorff Sørensen says: “Obviously, it all depends on when the restrictions are relaxed. However, there is no doubt that we – as well as most others – will be affected by a continued pandemic.”

TERMINAL TALES

GOING GREEN THEME

As all parts of the maritime industry seek to grapple with the issue of improving their green performance, "New technologies for greener shipping" has been chosen as the International Maritime Organization's (IMO) World Maritime theme for 2022, with the aim of supporting the maritime sector's move into a sustainable future, while making sure that nobody falls by the wayside.

IMO Secretary-General Kitack Lim said recently: "IMO actively supports a greener transition of the shipping sector into a sustainable future and showcases maritime innovation, research and development, and the demonstration and deployment of new technologies. In order to achieve these objectives, partnerships are key, as they allow all parties involved to share and distribute information on best practices and to access resources and general know-how in support of the transition of the maritime sector into a greener and more sustainable future".

CLEAN INCENTIVES

Those who bring the greenest ships into the Port of Long Beach, California, can now earn what the port says are the most generous sustainable vessel financial incentives.

The Long Beach Board of Harbor Commissioners recently approved changes centred around incorporating the international Environmental Ship Index (ESI) into the Port's Green Ship Incentive Program, which began in 2012. A voluntary system, the ESI identifies seagoing ships exceeding the current emission standards of the International Maritime Organization.

The Green Ship Incentive Program has helped improve air quality, encouraging shipping lines to send their newest, cleanest ocean-going vessels to the Port of Long Beach. More than \$1.7m in incentives was paid to participants in 2020.

SING FOR SEAFARERS

Law firm Ince has released its global virtual choir's recording of Rod Stewart's famed single *Sailing* to raise funds for four of the world's leading maritime charities: The Mission to Seafarers, Stella Maris, Sailors' Society and the Seafarers' Charity.

The members of the international choir have joined from all four corners of the world, aiming to give voice to the unsung heroes of the pandemic and raise awareness of their situation and their crucial role in the global supply chain.

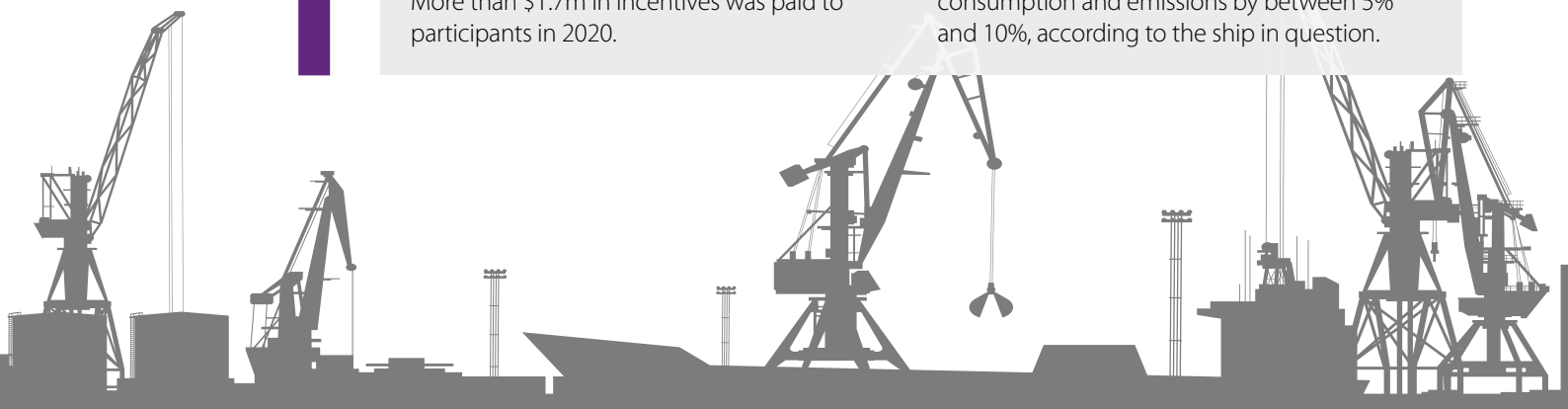
Ince says it is keen to raise as much awareness and money for seafarers as possible, with the net proceeds for the single split equally among the four charities. It can be purchased from all main media platforms and you can also donate and support all four charities through the company's Virgin Money Giving page, uk.virginmoneygiving.com

BOOK OF EXPERIENCE

Those who are interested in hearing about the complex ports environment should take a look at Captain Bill Chalmers' new book on the industry: *A Guide to Port and Terminal Management*. A veteran of both the shipping and port sectors, Chalmers' book covers the role of ports, ships and their cargoes, specialist terminals and equipment, and the challenges ports have to face to keep up with new developments in ship design. The book is published by Brown Son & Ferguson and details can be found at skipper.co.uk

BLOWING BUBBLES

Silverstream Technologies is trying something a bit different in its quest for cleaner shipping: bubbles. In a first for any VLOC, it has installed air lubrication technology on a Vale-chartered ore carrier. The system creates a carpet of microbubbles between the hull and the water and Silverstream says this can reduce fuel consumption and emissions by between 5% and 10%, according to the ship in question.



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