

# BULK TERMINALS

SUMMER 2022

*international*

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

## GREEN LIGHT

How are classification societies coping with new environmental rules?

## SMART SOLUTIONS

State-of-the-art cranes and grabs that are shaking up the industry

## TRANSFER MARKET

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# HOPE ON THE HORIZON

BY SANDRA SPEARES

The industry is facing tumultuous times, but there are reasons to be optimistic about the future

**A**lthough companies are continuing to grapple with the backlash of the pandemic and struggle with logistical difficulties arising from the conflict in Ukraine, there have been some positive messages about the outlook for industry.

In its recent analysis, trade association BIMCO was reasonably upbeat about the prospects for supply and demand over the coming year on the basis that new environmental regulations coming into force may well encourage slow steaming to save energy and meet decarbonisation requirements. That said, slow steaming brings with it its own raft of requirements and challenges.

Environmental challenges continue to dominate the agenda for ships, although recent political shifts as far as fuel supplies are concerned have been impacted by the Russia/Ukraine situation and sanctions on Russia imposed by the big trading blocs. This has led to a shift in supply-and-demand patterns and the emergence of new trading partnerships.

As U-Ming pointed out as it announced the launch of its new post panamax eco-friendly bulk carrier, the

covid-19 pandemic and the Ukraine/Russia situation have pushed many countries worldwide into looking for alternative sources to secure their internal supply, thus changing global supply chains and pushing up freight rates. The company, which placed an order for 12 eco-friendly bulkers and one cement carrier in 2020, says it has made savings of the order of 20% when compared with current market prices.

Coming up with eco-friendly solutions in the run-up to the arrival of new environmental regulations has been a key component of industry moves, as has the increasing application of electronic and web-based solutions to many of the challenges faced by the industry.

While a concentration on web or screen-based solutions may from one perspective raise concerns that crew members may stop looking out the window and thus get involved in accidents that might have been avoided, there is no doubt some innovations will ensure that crew members are sheltered from dangerous scenarios by the use of drones, for example, to explore at-risk enclosed spaces.

With new rules such as the upcoming International Maritime Organization's Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII) in January 2023, shipowners will need to ensure they are prepared – not just to meet the requirements, but also to ensure they are not just following a “tick box” approach to the new rules. For those ships that cannot comply, the only solution is the scrap yard – and obtaining slots for new vessels is a tough and expensive process in the current environment.

However, there are plenty of new designs and innovations to be explored as owners, operators and ports seek to improve efficiency and cut down overheads. While the remote imperative resulting from the pandemic may not be as important as it has been in the past couple of years, these practices are set to continue to some degree, alongside face-to-face activities. Vessel inspections are a good example of this.

We hope you enjoy this edition of *Bulk Terminals International* and look forward to face-to-face meetings as the year progresses.



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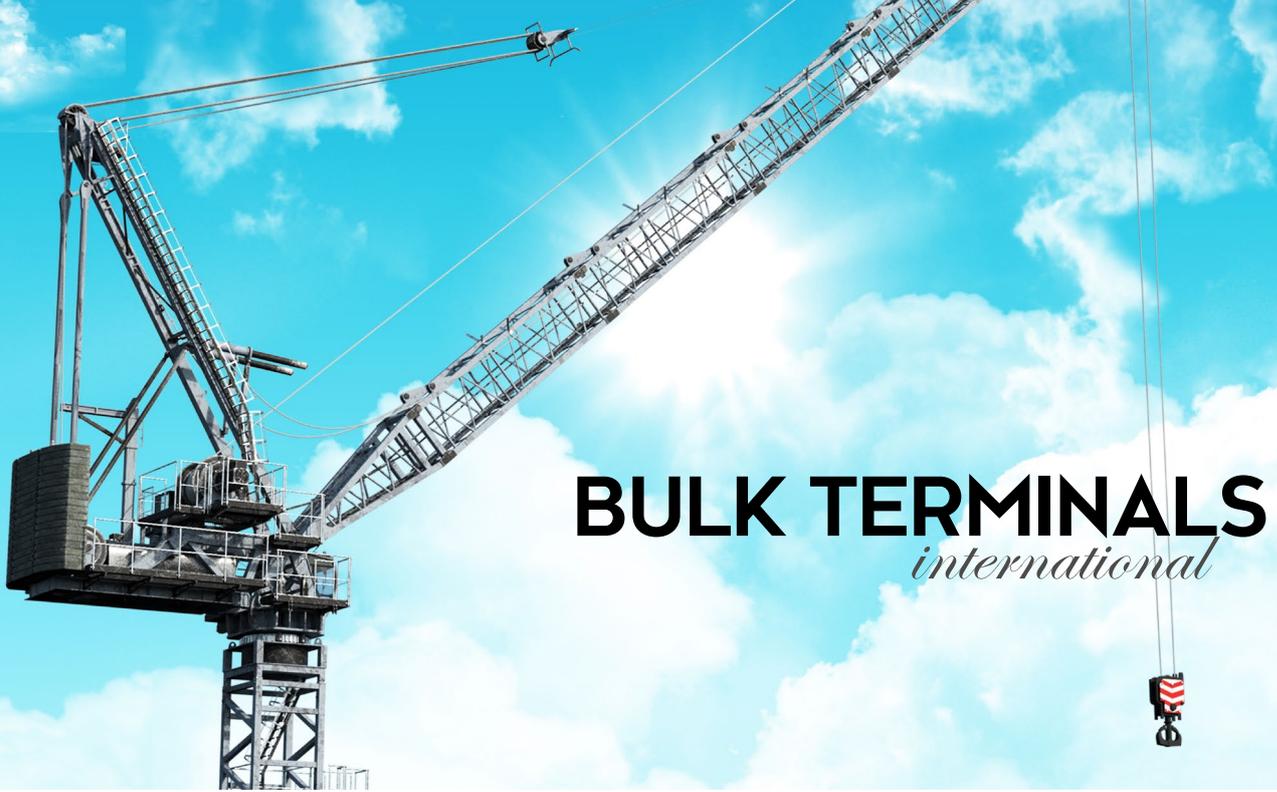
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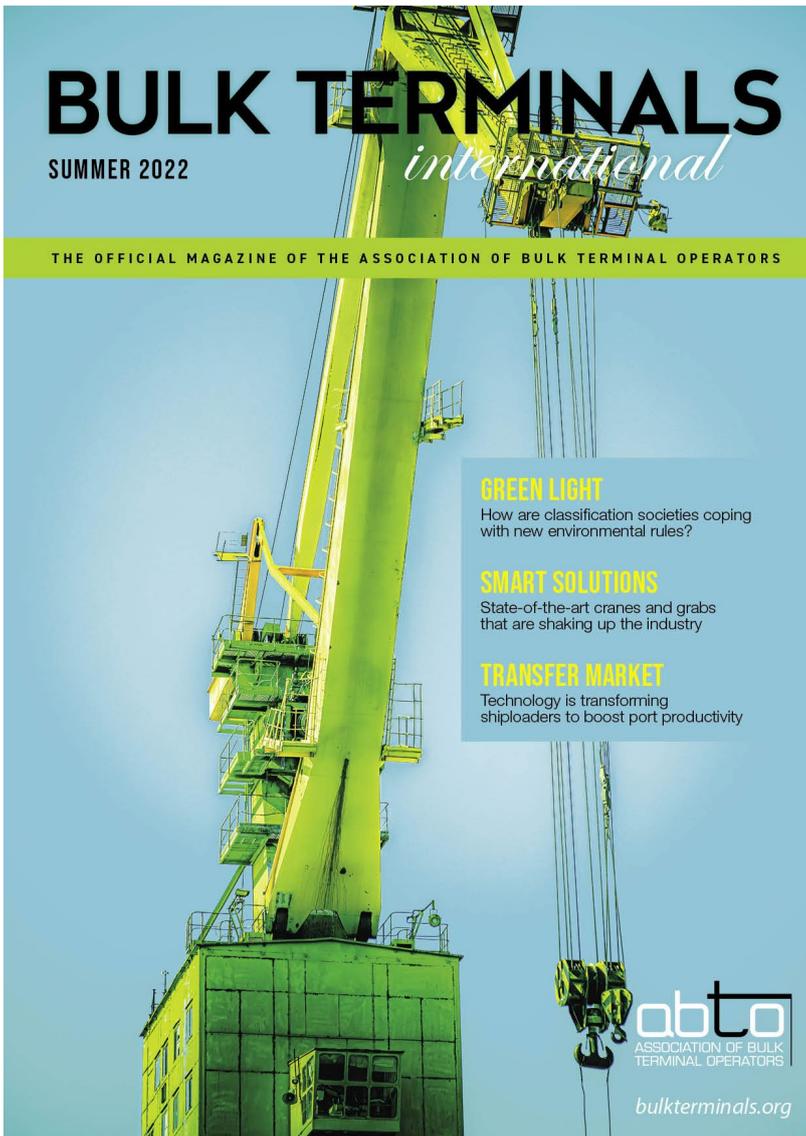


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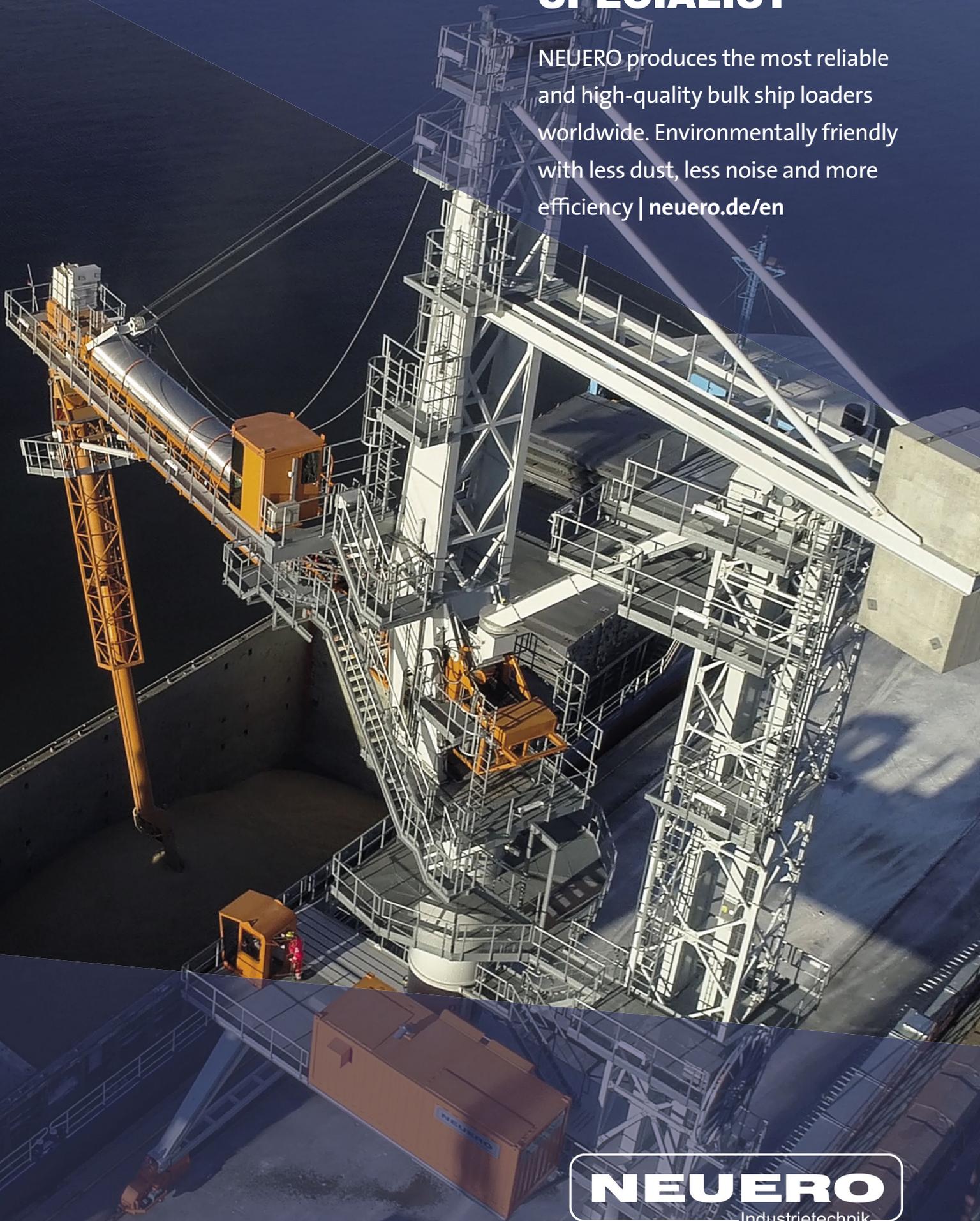
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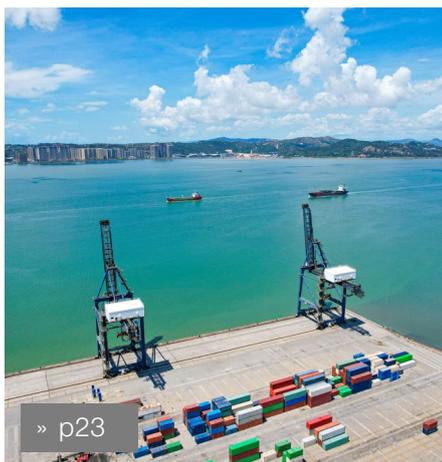
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# EFFECTS OF WAR ARE FAR REACHING

The ongoing conflict in Ukraine continues to dominate everyone's thoughts

**T**he war in Ukraine shows few signs of ending anytime soon. Despite Russian gains in the east and south of the country, there are indications that the tide could eventually turn.

This would auger well for Ukraine's ability to recover its position as the major exporter of grain it previously was.

In the meantime, as *Bulk Terminals International* goes to press, Turkey and the United Nations have said that Russia and Ukraine have signed a deal to reopen Ukrainian Black Sea ports for grain exports – releasing dozens of stranded ships and some 20m tonnes of grain stuck in silos at Odesa.

The war will be not be far from our thoughts as we meet in Latvia from 11-12 October as guests of our host port, the Freeport of Riga Authority and local organiser Rīgas Brīvostas Padome – Association of Stevedores in the Port of Riga. The high-value programmes for the annual ABTO Bulk Terminals Conference are designed for all those involved in the transportation, storage and handling of bulk commodities.

The conference always sets the scene with an analysis of bulk

markets. It continues with a full programme focused on the concerns of operators, each year offering sound practical solutions for improving safety, streamlining operations and ensuring environmental protection. Digitalisation, the cyber threat, development opportunities and, naturally, the ongoing effect of covid-19 on bulk terminal operations will also be covered.

Given the importance to Latvian and other Baltic ports of transit cargoes, rail and transport connectivity will be covered as well in *Bulk Terminals Riga 2022* – especially given the impact the Russian invasion of Ukraine has had. In June, Lithuania – implementing sanctions imposed by the EU – has banned the transit of coal, metals, construction materials and advanced technology through its territory from Russia to the Kaliningrad enclave.

Similarly, China's dispute with Lithuania has regional and EU implications. China – as we know from its issues with Australia – is prepared to use its massive clout when it comes to trade and commodities in pursuance of political objectives.

Beijing has denied ordering a trade boycott, but the European Commission says it has evidence that China is refusing to clear Lithuanian goods through customs, rejecting import applications and pressuring EU companies to remove Lithuanian inputs from their supply chains. In January, the EU launched a case at the World Trade Organisation, which could take some time to resolve.

Time will tell what outcome of the war in Ukraine and trade disputes with China will be. *Bulk Terminals Riga 2022* will examine the fallout, regionally and internationally. A not-to-be-missed panel will debate "conflict and the effect the pursuit of political objectives has on bulk trades – international, regional and EU implications".

## A WARM WELCOME

As well as terminals and ports, we welcome equipment and service suppliers, professional advisors and academics to the conference. Indeed, ABTO feels strongly it is only through the interaction with others that bulk terminals will achieve increased operational efficiencies, together with safety and environmental compliance.

In addition to the conference presentations, cases studies and panels – as well as a first night reception courtesy of our hosts – the Freeport of Riga Authority has also arranged a boat tour of Riga Harbour with lunch on board, and a visit to the Vessel Traffic Services Centre, which controls the operational management of ship traffic and maritime safety in the port water area.

Due to popular demand, this year there will be a terminal visit as guests of Rīgas Universālais Termināls – Riga Universal Terminal (RUT). Like the port, RUT is ideally situated on the Baltic Sea to serve as a key crossroad for trade between the East and West.

## RIGA RECONSTRUCTION

Founded in 2001, RUT today handles more than 3m tons of cargo annually and is a leading player in the handling of wood products and frozen food cargoes. As well as bulk cargoes, RUT's multi-purpose terminal operation also includes the loading and unloading of containers and general cargoes, cold storage and rail transport. RUT has a certified quality, environment protection and working safety management system and complies with ISPS code regulations.

The Freeport of Riga is the largest port in Latvia and the second largest in the Baltic States. Much has been happening, both in terms of its governance and development, with the reconstruction of both port piers deepening and expanding the port access channel.

It handles 22% of the total cargo volume of the major Baltic ports in 2019. Approximately 200 private merchants operate there, including 35 stevedoring companies – freight terminals, which together provide around 5,000 jobs.

In 2019, it was announced that the government would take control of Riga and Ventspils Freeports and a new company has now been established. The port has started significant upgrading works to reduce its environmental impact and improve the quality of life in local neighbourhoods.

Over the past few years, several important developments have taken place at the port, including the unveiling

of state-of-the-art terminals in Krievu sala to cut coal handling in the centre of the city. This was the largest investment and infrastructure project ever implemented at the port.

It included construction of several berths and roads, a railway station and an enormous wind barrier, as well as installation of state-of-the-art handling technologies. Port operators have also contributed to the development of port infrastructure and the improvement of its general competitiveness.

Rīgas Universālais Terminālis started receiving ships at its reconstructed berth at the beginning of 2020 following investment of €5m. Executive Director Jānis Kasalis – who will welcome our delegates to the terminal – says: “We understood that if we failed to invest in the development of our company – namely, a longer and deeper berth – the volume of cargo handled by us in the future would decrease and we would not be able to grow as we had planned to.”

Other projects include drainage of the Kundziņsala residential area. Due to rapid development of the port and the construction of new infrastructure and terminals, the level of groundwater had increased in this part of Riga.

The objective of the project was to prevent flooding of residential areas and mitigate the effect of port activities for local people. Another project is the construction of Kundziņsala overpass, reducing the cargo flow through the centre of Riga.

Along with plans to develop Riga further as a logistics hub, the port has also embraced the smart-port concept, with a number of advanced technology and e-commerce projects. In one such project carried out in co-operation with LMT, test flights of 5G environmental monitoring drones were carried out.

If you have the opportunity to stay a little longer in Riga after the conference, then there is much to see in this beautiful city. One of the most cosmopolitan of the Baltic capitals, Riga is a modern city with a historical heart that offers a variety of natural, tasty, cultural and spectacular charms. Take a look at [liveriga.com](http://liveriga.com) to find out more.

## JOIN OUR COURSES

Following the conference, in collaboration with our friends at the Wolfson Centre for Bulk Solids Handling Technology and the Solids Handling and Processing Association, we will be holding a course on 26 and 27 October on “Understanding the Total Cost of Ownership”.

The course will show terminal operators and equipment manufacturers alike what should be specified, on the one side, and on the other supplied – avoiding future disputes, down-time, maintenance costs and loss of business.

You can go online to see Professor Mike Bradley's introduction to the subject at *Bulk Terminals 2021*. Just go to: [bulkterminals.org/events/previous-conferences](http://bulkterminals.org/events/previous-conferences), and click on the link that reads “Please click here to see recordings of the conference”. Scroll 30 minutes through to view his presentation.

If you are a terminal in the market for new equipment or a supplier of bulk solids handling equipment, then don't miss this well-received online short course.

To register an interest in attending any of ABTO's events or short training courses, please contact: [events@bulkterminals.org](mailto:events@bulkterminals.org) or call +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 and, especially in today's world, stay safe.

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On top of the continuing effects of covid, the war in Ukraine will create massive changes in bulk trade flows.

*Bulk Terminals 2022 Riga* will fully examine the impact of the conflict on bulk terminal operations – both short term and in the future.

To discuss speaking and sponsorship opportunities please call **Simon Gutteridge +33 (0)321 47 72 19** or email [events@bulkterminals.org](mailto:events@bulkterminals.org)

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# WORLD NEWS ROUND-UP

**New environmental initiatives have been broadly welcomed by industry groups, although there are calls for governments to act on funding**

## **BIMCO STAYS OPTIMISTIC**

Although many risks to the global economy and demand for bulk commodities remain, BIMCO is optimistic that demand growth in 2022 will match or not be far behind the organisation's estimated supply growth.

A potential rest-of-year increase in average tonne miles for coal and grains and a resurgence in China could add to demand. For 2023, BIMCO currently estimates higher demand growth as commodity prices and inflation are expected to moderate. BIMCO's Chief shipping analyst, Niels Rasmussen.

In 2023, the supply/demand balance will be further assisted by decarbonisation regulation, which is likely to reduce average sailing speeds. BIMCO therefore expects the supply/demand balance to move in favour of owners, he says in an analysis of the market on BIMCO's website.

"In both years, a shift in congestion either up or downwards could have a major impact on market conditions. Risks to cargo demand are also plenty which, if they materialise, could lead to an adverse development in both the supply/demand balance and rates and prices," Rasmussen says.

"A drop-off in grain shipments following the closure of Ukrainian ports and a low level of shipments into China has been a drain on demand, whereas a

renewed interest in coal in the European Union has provided new support.

"Congestion has remained an issue and so far this year, more ships have consistently been stuck for longer than in 2021. This naturally adds inefficiency to the supply chain and reduces effective supply, thereby tightening the supply/demand balance in favour of owners and operators."

Developments in China, which accounts for around 35% of global cargo demand, have been a concern following the strict implementation of a zero-covid policy leading to extended lockdowns. This has naturally caused a reduction in both activity and demand for coal and iron ore, Rasmussen says.

Forecasts for GDP growth in China have been lowered for this year and next year, the analysis says.

## **UK PORTS CALL FOR FUNDING**

The UK ports sector has called on the government to supercharge the delivery of energy network infrastructure to ports with a new research and a transformational funding programme.

Energy connectivity is a key enabler for ports if they are to act as hubs for the decarbonisation of freight transport on land and water. The call came as the sector's trade associations, the British Ports Association and the UK Major Ports Group, released a summary

of data produced by The Centre for Economics and Business Research (CEBR) that demonstrates the huge positive impact ports have on boosting jobs and prosperity around the UK's coast.

CEBR's report reveals that 125,000 people are employed in ports around the UK. These are highly productive and well-paid jobs – on average 51% more productive and 40% better paid than UK-wide averages. For each direct job in ports, there are more than six jobs created in wider supply chains and coastal communities. Such communities are all too often among the poorest in the UK.

The sector contributes £10.8bn in value to the UK economy – more than air, rail, warehousing, and storage. This is underpinned by consistent high investment – port operators and their owners invest an average of £600m every year into their facilities and estates. This is on top of the crucial enabling role ports play for the whole economy as the gateways for 95% of UK global trade.

## **ENERGISING THE MARKET**

The European Sea Ports Organisation (ESPO) and the European Federation of Inland Ports (EFIP) study on the implications of the changing energy landscape on Europe's ports was released and presented at ESPO's Annual Conference in Valencia in June.

The aim of the study is to draw a

comprehensive picture of the impact of the energy transition on Europe's ports, in particular in terms of spatial planning and infrastructure needs, as well as on the role of the port managing bodies. The report comprehensively analyses the impact of the different studied developments with regards to the linked supply chains, connectivity needs and capacity requirements.

The study includes different scenarios, including ports as new entrants in the energy business and or as conventional energy ports which faces different challenges to convert into a green energy hub. Taking into account the wide diversity of ports, the port analyses the best profiles for each possible pathway or port development.

With this study, ESPO and EFIP aim to increase knowledge and awareness of the various impacts that the energy transition has on ports and the different roles port managing bodies can take up.

The study assessed the impact of the energy transition on ports and port managing bodies through 17 factsheets on specific aspects of the energy transition. The fact sheets are divided over three layers. The first layer contains the measures aimed at reducing carbon emissions within the port. These include operations under the responsibility of the port managing body, but also operations of shipping lines and terminal operators.

The second layer focuses on the energy transition in the wider port area. This entails activities closely linked to the port: industrial clusters, linkages between the port and nearby urban areas, and connected offshore activities. The third layer considers the significance of ports in the energy transition for the wider economy and community.

"With this study we hope to assist ports in finding their individual pathway", says ESPO chairwoman Annaleena Mäkilä. "We also consider this study to be a helpful tool for policymakers who want to understand the role of ports in the energy transition, as well as its implications on ports. We hope this study serves as a basis for further thinking and discussion among ESPO members, the larger port community and policymakers.

"Inland ports are committed to playing their part in achieving the green energy

transition. This study comprehensively maps and identifies the challenges and opportunities that ports will be facing. Such an overview is needed to effectively plan and implement infrastructure, new business models and much more. It will be a corner stone in realising the European green energy and logistics network," comments Antoin Berbain, EFIP president.

ESPO has also commented on the European Parliament's position on the EU Emission Trading System (EU ETS), which includes an expansion of the ETS to include shipping emissions.

ESPO welcomes an ambitious and robust ETS that includes measures to address, and if possible, avoid carbon and business leakage. ESPO also welcomes that the EP position includes earmarking of revenues for investments in ports and maritime.

ESPO says that in order for a regional ETS in the EU to be effective and aligned with the polluter pays principle, carbon leakage through rerouting of ships outside of the ETS scope must be avoided at all costs. If this is not addressed in the final legislation, the ETS would fail to effectively reduce emissions from ships whilst also producing a negative impact on the European port business.

European ports therefore strongly support the measures adopted by EP making it less attractive for ships to change their routes, divert calls, or engage in other evasive behaviours in order to avoid paying into the EU ETS.

ESPO believes that the EP position provides a good basis to address carbon and business leakage in the ETS. The preventative measures included in the EP position should be included in the final ETS to be agreed between the EP and EU Member States.

## ANTI-PIRACY ALLIANCE

The Government of Nigeria and a coalition of global shipping stakeholders have launched a new strategy to end piracy, armed robbery, and kidnapping in the Gulf of Guinea (GoG).

The strategy establishes a mechanism to periodically assess the effectiveness of country-piracy initiatives and commitments in the GoG. Targeted at all stakeholders operating in the region, it

will identify areas of improvement and reinforcement in order to eliminate piracy.

The plan is split into two mutually supportive sections: (1) actions which can be overseen by the Nigerian Industry Working Group (NIWG) (2) actions that require engagement with other regional and international partners.

The strategic ambition of the coalition is to eliminate piracy in the GoG, to secure trade routes, reassure traversing crews and support local communities.

In May, the UN Security Council condemned the GoG as the world's piracy hotspot. Despite the International Maritime Bureau's Piracy Reporting Center tracking an overall drop in global piracy during 2021, threat levels in the region remain high.

Piracy activity in the GoG has posed a severe threat to seafarers and local communities for over a decade. In 2020, 40% of piracy attacks and 95% of crew kidnappings occurred in the region. However, attacks decreased by nearly 60% in 2021, following the establishment of Deep Blue, the Nigerian Navy and Nigerian Maritime Safety Agency (NIMASA) anti-piracy project, and increased international counter-piracy operations in the GoG.

The newly launched strategy was developed by the International Chamber of Shipping, BIMCO, Intertanko, Intercargo, Oil Companies International Marine Forum, and representatives of the Nigerian Navy and NIMASA.

## SHIPPING POLICY PRINCIPLES

The International Chamber of Shipping (ICS) has launched *Shipping Policy Principles for Pandemic Recovery*, setting out calls to action to governments as national economies seek to recover from the covid-19 pandemic.

The new *Shipping Policy Principles* strengthen the shipping industry's commitment to the maintenance of a rules-based global trading system and a global regulatory framework which embraces open markets and fair competition; plus strict adherence to internationally adopted standards.

ICS outlines 10 "Policy Priorities" and complementary calls to action by governments in critical policy areas, to help support efficiency of the global maritime transport system, which carries

about 90% of world trade, the majority which now serves the economies of developing countries.

## PISR RISES UP THE RANKS

The Palau International Ship Registry (PISR) has registered a significant rise in its ranking within the Paris Memorandum of Understanding (PMoU) Flag State performance list in the first half of 2022. As of 1 July 2022, PISR lies at the top third tier of the Grey List of flag states.

Panos Kirnidis, chief executive of the PISR, says: "Our rate of progress is a testament to the combination of our own unique technology, our staff and the way they blend together. Within the past five years, PISR has achieved the most improvement within all the Flags in Paris MOU in record time, reaching Grey Listing in both the Paris and Tokyo MOUs."

## GREEN GROUP WARNING

The EU's environment ministers have pushed through ambitious proposals on key files of the Fit for 55 package relating to the carbon market, effort sharing between member states and a social climate fund.

However, green group Transport & Environment (T&E) warns that if exemptions are not removed from the deal, the bloc could miss its 2030 climate target.

Carlos Calvo Ambel, senior director at T&E, says: "We welcome member states' decision to green-light the first ever carbon market on international shipping. But the outcome of the council meeting is a step back for European aviation, as they continue to exempt huge chunks of emissions in this industry. The French Presidency fell short on tackling aviation's climate problem."

According to T&E for shipping, environment ministers endorsed the Commission proposal to include international shipping in the EU ETS, but they also introduced unnecessary exemptions, which could undermine the effectiveness of the carbon market and create an unlevel playing field in the market.

In particular, the exemptions for ferries to islands with under 200,000 inhabitants will only increase air pollution for those islands and reduce incentives to clean up those vessels.

"While member states agreed to start monitoring methane and nitrous oxides – two potent climate warming gases – from ships, these would not be automatically included in the carbon market yet. It was also positive that ministers agreed to already monitor emissions of some smaller cargo ships; the upcoming negotiations with the European Parliament will be an opportunity to extend this coverage to all vessels between 400 and 5,000 gross tonnage."

Calvo Ambel says: "Despite resisting the carbon market for road transport for many months over social concerns, the Council failed to include the two main things that would fix that: spending all the revenues on transition support for low-income households and transferring half of the carbon price on to 'big oil'. Unless that is fixed, it could prove an historic mistake."

## PORT PARTNERSHIP

PortsDirect has announced a landmark partnership with Svitzer, a global towage operator and part of AP Moller-Maersk.

PortsDirect manages the structured procurement of discounted rate agreements with quality port services providers for the benefit of its customers. The collaboration will give PortsDirect's 250 ship-owning and operating customers the ability to choose Svitzer's new carbon-neutral EcoTow service.

Svitzer's 10 EcoTow tugs powered by marine biofuel in London and Medway operate entirely on Hydrogenated Vegetable Oil (HVO) – an ISSC and RSB-certified sustainable second-generation biofuel produced by using waste material such as used cooking oil as feedstocks. The biofuel reduces carbon emissions by 100% on a tank-to-wake basis and 90% on a well-to-wake basis compared to marine diesel.

By choosing to use EcoTow, PortsDirect's customers will be able to lower their Scope 3 emissions, which make up the majority of a company's carbon footprint and improve the sustainability of their supply chains.

Commenting on the partnership, Kenny Bjergstad, PortsDirect's managing director, says: "Our customers recognise the importance of reducing their CO<sub>2</sub> emissions and supporting the rest of the industry in meeting shipping's

decarbonisation pathway and targets.

"The entire supply chain is under scrutiny for where efficiency gains can be made and our partnership with Svitzer provides our customers with the opportunity to address and further improve their Scope 3 emissions within the port environment, improving their sustainability, but also their competitiveness in the eyes of counterparties."

## BUNKER DELIVERIES

Data collected by marine and energy consultancy Blue Insight has indicated that a significant number of bunker fuel deliveries made in the major marine fuel hubs of Rotterdam and Fujairah are being made below a financial breakeven point, indicating that fuel buyers are not receiving the volume of bunkers they are paying for.

The findings – which will prompt renewed calls for mass flow meters as a universal standard – indicate that short bunker supplies cost buyers, owners and charterers an estimated \$100m in Fujairah and \$150m in Rotterdam throughout 2021. These estimates are based on the delivery economics of very low sulphur fuel oil (VLSFO), but the research supports similar patterns of losses for high sulphur fuel oil (HSFO) and even greater losses for marine gas oil (MGO).

'Short delivery' malpractices, where suppliers deliver less product than appears on the bunker receipt, has been an age-old tactic for many years within the bunkering sector. In 2017, Singapore, the world's largest bunkering port, mandated the use of mass flow meters to ensure the accurate measurement of delivered fuel, a law that has been considered universally successful. However, other ports have not followed suit, and short deliveries have remained a challenge for the industry.

Commenting on the findings, Adrian Tolson, director of Blue Insight says: "Our data suggests that the evidence is clear; buyers of fuel are disadvantaged and are not receiving the volume of bunkers they are being billed for.

"This challenge cannot be entirely explained by supplier generated volumetric shortages, but we do believe that the introduction of properly certified mass flow meters in

combination with a robust licensing process will do much to eliminate the issues. They removed short deliveries of bunkers from the supply picture and saved buyers in Singapore about \$1.7bn in fuel costs in less than four years."

Tolson says that as carbon regulations tighten, initially through the International Maritime Organization's Energy Efficiency Existing Ship Index and Carbon Intensity Indicator, and as carbon taxes and levies are introduced, fuel delivery volume discrepancies are likely to have major compliance implications. Inaccurate and higher fuel delivery volumes will overstate emissions and lead to penalties and higher operating costs for owners and operators.

"Having the right bunkering regulations in place is critical to managing fuel consumption and emissions. As the market evolves, it is important that port authorities, governments, and customer measurement authorities help to create an environment where better control is exerted over the supply chain.

"It starts with getting the right technology mandated and supporting this with standards, regulation and licensing. This includes the global introduction of mass flow meters in ports, or other appropriate metering technology for future fuels, and then making an attitudinal shift so that the approach is right for when fuels become more complex and expensive."

Blue Insight will publish a report later in the year once a global analysis has been completed on the true extent of this problem and the continuing challenge it poses to the sector's reputation.

### SAND AGREEMENT

Associated British Ports has concluded a new, long-term agreement with the UK's largest independent producer of sand and gravel, Brett Aggregates, at the Port of Ipswich.

Brett Aggregates already has a well-established depot at the West Bank Terminal within the docks. The new agreement will mean an increased footprint at the port to support their growth plans.

The aggregates arrive by ship at the Port of Ipswich and are then stored and processed for use in on site concrete manufacture and delivered by road or rail to other construction projects in and around the south east.

Attracted by the port's strategic location to support its existing customer base and potential new ones, Brett Aggregates has seen record-breaking tonnage levels of product at the Port of Ipswich in recent years.

### UK FREIGHT PLAN

The British Ports Association has welcomed the UK government's new Freight Plan, as well as the launch of a new campaign to encourage the next generation of workers into the sector.

The Department for Transport's Freight Plan gives renewed focus on a sector that kept the country supplied during the pandemic.

It also highlights the critical role that ports play as well as talking up the prospects of modal shift to help meet the government's sustainability aspirations.



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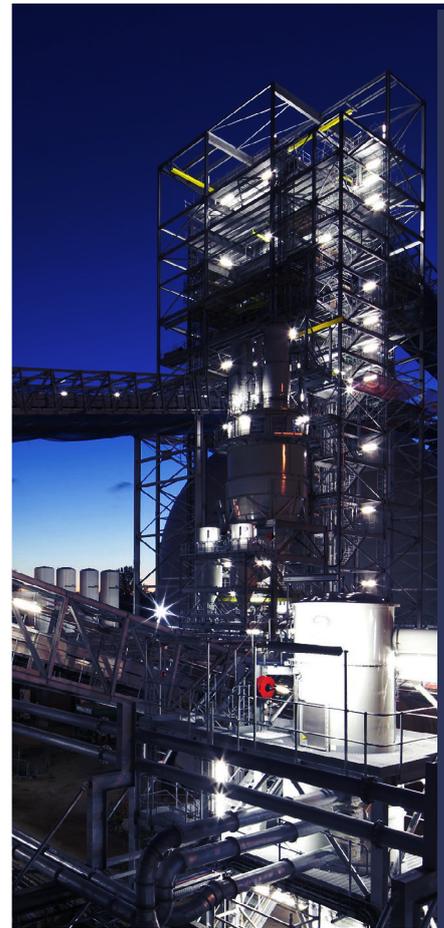
# UNDERSTANDING THE TOTAL COST OF OWNERSHIP

HOW TO AVOID FUTURE PROBLEMS AND BUY BULK SOLIDS HANDLING EQUIPMENT INTELLIGENTLY

The OBJECTIVE OF THE COURSE is to raise awareness amongst 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.

KEY TAKAWAYS: The course will give both terminal operators and equipment manufacturers an insight into what should be on the one side be specified, and on the other side supplied.

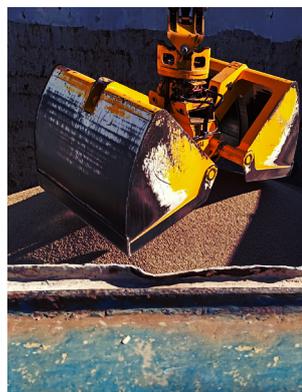
The course will be delivered through EXPERT PRESENTATIONS, CASE STUDIES and GROUP WORKING facilitated by The Wolfson Centre for Bulk Solids Handling Technology and the Solids Handling & Processing Association (SHAPA).



26-27 OCTOBER 2022

## SUBJECTS COVERED INCLUDE:

- » Nature of the problem
- » The Hall of Shame – examples of projects that have gone off the rails to greater or lesser degree
- » Quantifying how high the risk is – a review of the Rand Report findings
- » Understanding why technical risk is so high with bulk solids handling projects
- » Know your enemy – materials for design and for controlling technical risk
- » Practical approach to design to accommodate material characteristics
- » The virtue of the bespoke suit over prêt-à-porter
- » A project management approach is not enough – understanding the true cost of a bulk solids handling system to a business
- » CASE STUDIES: Risk management in solids handling projects – examples of good practice in bulk handling project procurement and some projects that managed significant risks effectively
- » DISCUSSION GROUPS – delegates break into groups under the supervision of the course tutors to discuss how well they currently apply best practice, what they can improve for the future and the difficulties to be overcome



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We are pleased to offer delegates to **CHoPS 2022** the same discounted rate as **ABTO** and **SHAPA** members. Please use the discount code **CHoPS22** on the course registration form.

# SAMSON: NEW POSSIBILITIES

## COMPANY NEWS

**Samson's Stormajor® 2.0 offers a flexible, cost-effective, long-term mobile solution for radial stockpiling, barge and rail wagon loading. Re-engineered by Aumund Group, the Stormajor®2.0 is a more robust machine, offering up to-date technology and the ability to handle more material. This is something Samson and Aumund are proud of as it highlights the engineering capabilities and vision of our engineering teams, including the group's focus on innovation.**

The Samson mobile Stormajor® opens up new possibilities for stockpiling, barge loading and rail-car loading. As well as featuring a radial outloading boom on a single chassis, it has the unique benefit of total mobility, providing universal applications and ultra-high performance. It has the flexibility to receive a wide range of materials directly from tipping trucks, shovels or even articulated dump trucks. The Samson Stormajor® is a compact and versatile piece of equipment that offers the performance of a fixed-load system without the need for a permanent infrastructure. Power and travel options, boom size, hopper reception unit and dust control features can all be tailored to suit the material and application.

The Stormajor® 2.0 also received the project of the year award at the Materials Handling Engineers Association (MHEA) 2021/2022 award ceremony.

## FUNCTIONS AND CHARACTERISTICS

- » Samson material feeder combined with a radial and luffing outloading boom conveyor in a single mobile machine
- » Available as a tracked or wheeled unit
- » Tracked version 15 and 20m boom
- » Wheeled version boom length up to 30m
- » 3 different capacity ranges: 450m<sup>3</sup>/h, 750m<sup>3</sup>/h and 1250m<sup>3</sup>/h
- » Dust control features include enclosures and sealing rings
- » Shiploading applications with optional chute systems and cambered boom design
- » Choice of drive systems, diesel, electric or diesel/electric



We offer long term, eco-friendly sustainable investments for various industries worldwide

## BENEFITS

- » Flexibility in stockpiling and shiploading
- » High stockpile capacity
- » Fast ship or barge loading
- » Buffer allows for even faster truck unloading, as a high average rate can be maintained, even when changing vehicles
- » Effective dust control
- » Shiploading options improve trimming capacity and increase overall loading rate
- » Easily transportable to site and immediately operational
- » Accepts a large variety of trucks and loading options
- » Flexibility in controlling material flow

## ABOUT SAMSON MATERIALS HANDLING

Samson Materials Handling offers an extensive, internationally proven range of mobile loading and unloading systems for handling bulk materials in different applications in a variety of industries.

Since the mid-1960s, Samson Materials Handling has been recognised as a specialist in mobile solutions for the handling of bulk materials. The company is located in Ely, Cambridgeshire, in the UK and has been contributing to an enhancement of the product portfolio of the Aumund Group since 2002. Samson has gained an excellent reputation internationally, not

only in ports and terminals, but also in the cement, steel, iron and aluminium industry, in quarries and processing, in power plants and in the handling of alternative fuels.

Sales activities are carried out directly from Ely, as well as through the international subsidiaries of the Aumund Group, in addition to a large network of local agents, who are constantly in direct contact with customers.

Samson Materials Handling has developed a wide range of reliable mobile material feeders that are used for receiving, storage and onward loading of various bulk materials. Flexibility, dependability, quality, safety and performance are at the core of every product concept, whether for the

reception of bulk materials from trucks, rail wagons or ships, or for discharging, for example onto existing belt conveyors in quarries.

## OUR VISION

Our purpose in Samson Materials Handling is to make change happen.

**How?** By selling something more than just equipment – we sell tailor-made solutions.

**Why?** Because we ask ourselves “Who do we want our customers to become?” We want our customers to become who they seek to be. We help create an environment that our customers want to see happen.

We offer long term, eco-friendly sustainable investments for various industries worldwide. We do what we do with purpose. We stand by it and we are responsible for our actions.

We sell solutions!

# SAMSON

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For more information, visit  
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## NEW GENERATION SAMSON STORMAJOR® 2.0

- Complete on-site mobility
- Fully sealed feed-in / transfer and discharge points to eliminate spillage
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- Lower capital investment than fixed installations
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# 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 30m<sup>3</sup> 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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# SEIZING THE ADVANTAGE

Investment in crane and grab systems has continued this year with an emphasis on putting in place equipment that will be eco-friendly as well as efficient

**A**ssociated British Ports (ABP) will further reduce its carbon emissions, as two of the very first fully mains-electric powered hydraulic cranes arrive at the Port of Ipswich. These cranes are among the first of their kind in the UK and are the latest in a series of bold investments in sustainable measures from ABP that have contributed to a 36% decrease in greenhouse gas emissions since 2014.

The cranes, Mantsinen model 95ER, have been configured around specific workings of the operations at the Port of Ipswich to optimise efficiencies and further reduce energy consumption. It is estimated that these two electric cranes will save up to 5,275 tonnes of CO<sub>2</sub> over their lifetime. To provide perspective, one tonne of CO<sub>2</sub> is equivalent to driving a car once around the world (circa 23,000 miles).

ABP has partnered with provider Cooper Specialised Handling in this pioneering agreement to invest in these multi-million-pound, state-of-the-art cranes that can be powered by the solar energy generated at the port itself. The port already has 4,000 solar rooftop solar arrays and has invested in an onsite sub-station to futureproof

sustainable portside operations that can accommodate up to four electric powered cranes. The port has also invested in electric vans to minimise the impact of port operations on the environment.

The two cranes will be able to manage a range of material received in the East Anglian port, which handles more than two million tonnes of cargo each year and is the UK's leading grain export port.

Not only will this initiative improve ABP's green credentials, reducing the port's CO<sub>2</sub> emissions and decreasing energy consumption by up to 40%, but will also allow for quieter operations and improved air quality.

Paul Ager, divisional port manager says: "ABP is really committed to reducing the greenhouse gas emissions arising from port activity. This £4m investment at the port is the latest development in ABP's carbon reduction goals tailored to its operations.

"The transition to electric machines will not only improve ABP's cargo handling service to its customers but will also feed into ABP's wider policy to reduce CO<sub>2</sub> emissions all the way down to zero."

## LIEBHERR'S HIGHER LEVEL

French crane contractor Soliman has taken delivery of a new Liebherr LTM 1230-5.1 mobile crane. The higher lifting capacities of the powerful, versatile five-axle crane compared with other models in the same crane class, together with its particularly long boom, were just some of the criteria that made up the company's mind to buy the new crane.



HANDOVER OF THE LTM 1230-5.1 TO SOLIMAN  
LEFT TO RIGHT: ENZO GIGANTE, GIUSEPPE GIGANTE (BOTH FROM SOLIMAN) AND GUILLAUME GAENG (LIEBHERR GRUES MOBILES).

One of the factors that persuaded the company to buy the Liebherr 5-axle model was its high resale value on the secondhand market. Soliman is also impressed with the reliability of Liebherr cranes: "We chose Liebherr when we decided to develop our fleet as a result of the reliability of Liebherr cranes and

the fact that they often deliver higher lifting capacities compared with others in the same crane class," explains Enzo Gigante, commercial manager at Soliman. "We decided on the LTM 1230-5.1 from Liebherr because of its great boom length, versatility and high performance."

The 230 tonne model features a very long 75m telescopic boom. This can also be combined with a 43m fixed jib. That makes high radii possible, for example for hoisting loads over buildings. Its maximum hoist height is 111m. In addition, there is a wide range of auxiliary boom systems available for this crane model, which can be adjusted hydraulically as an option.

The crane's VarioBase® and VarioBallast® features ensure that it is also ideal for working in constricted conditions. The LTM 1230-5.1 was the very first crane to feature an asymmetrical support system, known as VarioBase® Plus. This combines trapezoidal support with VarioBase® technology. It means that even higher lifting capacities are possible, particularly over the crane's rear outriggers.

The new LTM 1230-5.1 joins the higher lifting capacity segment within the Soliman crane fleet. "The crane fits perfectly in the heavy load cranes within our fleet", adds Gigante.

"We work in every sector where a crane is required, such as construction and general industry."

Meanwhile, Liebherr is unveiling fibre cranes for particularly challenging hook heights and hoists.

When it launched its pioneering fibre rope over three years ago, Liebherr also unveiled its first fibre cranes in its popular EC-B series. Flat-top cranes featuring a high-tensile fibre rope, which is the result of 10 years of development work by Liebherr and rope manufacturer Teufelberger, are now showing what they can do every day on sites around the world.

For the very first time, HC-L and EC-H series cranes will now be available in fibre versions – the crane for special projects, the 1188 EC-H 40 Fibre, and the luffing jib crane, the 258 HC L 10/18

Fibre. The high-tensile fibre rope for large cranes has a diameter of 25mm (previous versions measured 20mm and 22mm in diameter). The significant weight difference between a 25mm steel rope and a fibre rope of the same thickness means that the new fibre cranes can be used to build skyscrapers and industrial plants with even greater efficiency.

The latest "Tough Guys" from the EC-B series, the 370 EC-B 16 Fibre and the 520 EC-B 20 Fibre, also feature the 25mm fibre rope.



THE 258 HC-L 10/18 FIBRE CRANE NOW ALSO FEATURES THE 25MM FIBRE ROPE FROM LIEBHERR.

The lighter fibre rope is particularly noticeable on specialist cranes for great hook heights, the HC-L cranes. This is because every metre of additional hook height means that the benefits of this significantly lower rope weight increase. The use of the fibre rope enables the lifting capacities at the jib head to be increased by up to 20% compared with the steel rope versions.

In addition, the fibre rope delivers a significantly longer service life than a steel rope. As the fibre rope only weighs around one-fifth of a steel rope, it is also significantly easier to handle for erection engineers when reeving the hoist rope. Furthermore, the fibre rope is easier to maintain as it does not require

lubrication. That also means that the downtimes of the crane are reduced.

What is more, safety during crane operations is palpably increased – the various components of the cover wear at different rates, and the crane operator can see at a glance that the rope has to be replaced at the latest when the red layer under the cover fabric appears.

In addition, fibre ropes deliver another method of reducing an ecological footprint. This is due both to the rope material and the fact that it makes it possible to use a lighter crane construction.



HOISTING WORK CAN BE COMPLETED QUICKLY AND SAFELY USING THE NEW 258 HC-L 10/18 FIBRE (FRONT LEFT) FROM LIEBHERR.

Liebherr has also unveiled its first hydraulic luffing jib crane. The 195 HC-LH 6/12 can hoist up to 2550 kilograms at the jib head at its maximum radius. The hydraulic luffing jib crane achieves these fantastic values when combined with the climbable 16 EC tower system, whose dimensions of 1.6 x 1.6m mean it has a very small footprint and can be transported easily to the site by truck or container.

Slimline tower systems, great hook heights, high performance and climbable – Liebherr claims this complete package makes its hydraulic luffing jib crane unique.

In addition, the hydraulic luffing jib crane also particularly stands out from the crowd due to the fact that it is easy to erect and very simple to transport.

It also has state-of-the-art features that include a very small out-of-operation setting and the facility to control it using the popular Litronic assistance systems such as Micromove, the operating-range limiting system and level luffing.



THE TC-OS SMART CONTROL INTERFACE IS ALREADY AVAILABLE. LIEBHERR IS DEVELOPING MORE

The construction site of the future not only requires powerful machines but also smart digital solutions for crane operations. Liebherr will provide an insight into new planning and analysis tools, such as 3D models for planning a site in detail. A digital site diary helps to analyse the efficiency of the construction machinery in retrospect.

Furthermore, Liebherr is working on solutions to improve crane operating even more – first of all in the form of the new intuitive TC-OS control interface and, second, by remote control for tower cranes. The new control interface, which is already in use in many cranes, enables crane operators and service engineers to navigate through a practical menu structure using a touchscreen. The remote control enables the crane operator to control the crane from outside the cab. This means greater flexibility in structuring the working day.

Another focus is the development of new assistance systems that support crane operators using intelligent sensors and algorithms and therefore make a major contribution to enhancing safety on site.

## PORT QASIM PURCHASE

Port Muhammad Bin Qasim has purchased two grab unloaders to help with its handling of dry bulk cargo.

The DM25T-43M grabs are designed and manufactured by Nanjing Port-Machinery & Heavy-Industry Manufacture Company (NPHMC), China.

The system includes a hopper, fully closed belt and dust control system, which is energy-efficient and environmentally friendly.

Its design facilitates fast loading times and it is also cost competitive when compared with European manufactured machines, the company says.

## ROUGH TERRAIN

Tadano has announced its plans to commercialise the world's first electric rough terrain crane.

Currently in development, the crane will be able to drive to the job site and complete all lifting operations using battery/electric, rather than diesel power, to deliver zero-emissions operation.

Beyond its environmentally friendly operation, the crane's electric motor emits lower noise levels when operating. This will result in significant

advantages for customers when working in congested urban areas with noise ordinances, completing lift projects at night and operating indoors.

Tadano is currently working with a variety of industry suppliers and partners and targets commercialisation of the new electric rough terrain crane in late 2023.

In April 2021, Tadano Group announced long-term environmental targets, which include a 25% reduction in CO<sub>2</sub> emissions from business activities and a 35% reduction in CO<sub>2</sub> emissions from product use by 2030, as well as achieving net-zero carbon emissions by 2050.

The company has gathered all of its sustainable solutions under the name Tadano Green Solutions (TGS). Combined with lifting technology, the innovations introduced under TGS will contribute not only to sustainability, but also to operating safety, quality and efficiency.

Introducing the world's first electric powered rough terrain crane is the next evolutionary step in meeting the company's environmental targets.

Most of the crane equipment on the market today consumes diesel fuel to operate, Tadano says. For many models, the engine and drivetrain are required to both propel the crane to the jobsite and power the hydraulics used to lift loads. Diesel fuel is burned in the process, generating CO<sub>2</sub> emissions.

Under the TGS banner, electrification of the rough terrain crane product line is one of the key efforts for lowering product emissions.

"We have set aggressive goals for lowering both operational and product emissions and we will partner with industry leading companies to attain those goals," says Toshiaki Ujiie, president, CEO and representative director of Tadano.

"In conjunction with previous product innovations to lower CO<sub>2</sub> emissions, we are excited to introduce the first battery/electric rough terrain crane, which will be a key driver for our goal of 35% reduction in product CO<sub>2</sub> emissions by 2030."

# FUCHS: VERSATILITY IS KEY

## COMPANY NEWS

**Hydraulic material handlers in ports have proved their efficiency and versatility over the past few decades. The reputation of these machines precede them; they have become the equipment of choice for both sea and river ports, as well as smaller bulk stand-alone terminals that deal in the loading and unloading of vessels.**

Fuchs machines, in particular, have been used in port applications with great success. Fuchs material handlers work in ports worldwide, meeting and exceeding needs in the most demanding of applications and environments. At the request of

our customers, Fuchs has developed new designs and machines that fit port applications to fully meet customer needs, to successfully work in and around ports.

One of the recent additions to the Fuchs range – which was driven by demand in the ports segment – is a crawler mobile hydraulic material handler with a gantry undercarriage, the RHL390F Gantry.

The gantry undercarriage allows the rail wagons or lorries carrying bulk to drive through the machine, which means that customers can optimise traffic on site, save space and handle the materials even

more efficiently than with a standard gantry crane. Gantry material handlers such as this will also be more productive when working alone in loading/unloading from under the machine, in comparison to the more typical 180° rotation handling of other machines. Another advantage is view height – the gantry portal legs lift the cab to a higher position, allowing the operator a much clearer overview.

Optionally, the machine can be equipped with additional cameras providing a full 360° view for the operator, which drastically improves safety in and around the machine.



Another challenge often faced on port sites is range of reach, and due to the RHL390F Gantry having the gantry unit with a reach of over three tracks, this challenge is eliminated. The gantry portal legs lift the machine, upgrading the possibilities of the area of operation for the machine and it's reach possibilities. An example of such an issue is operating over the middle rail track on a port site that is occupied by wagons. With the addition of the gantry portal legs, it enables this machine to operate on the middle rail tracks – saving time in the loading/unloading process and also saving time having to move/remove rail wagons from one track to another.

At the same time, the reliable construction of Fuchs machines allows using a machine in HD mode over the multiple rail tracks. Currently one of the RHL390F Gantries is working in a dusty environment with 24/7 shifts and high density loads of up to 2,500-3,500kg/m<sup>3</sup>.

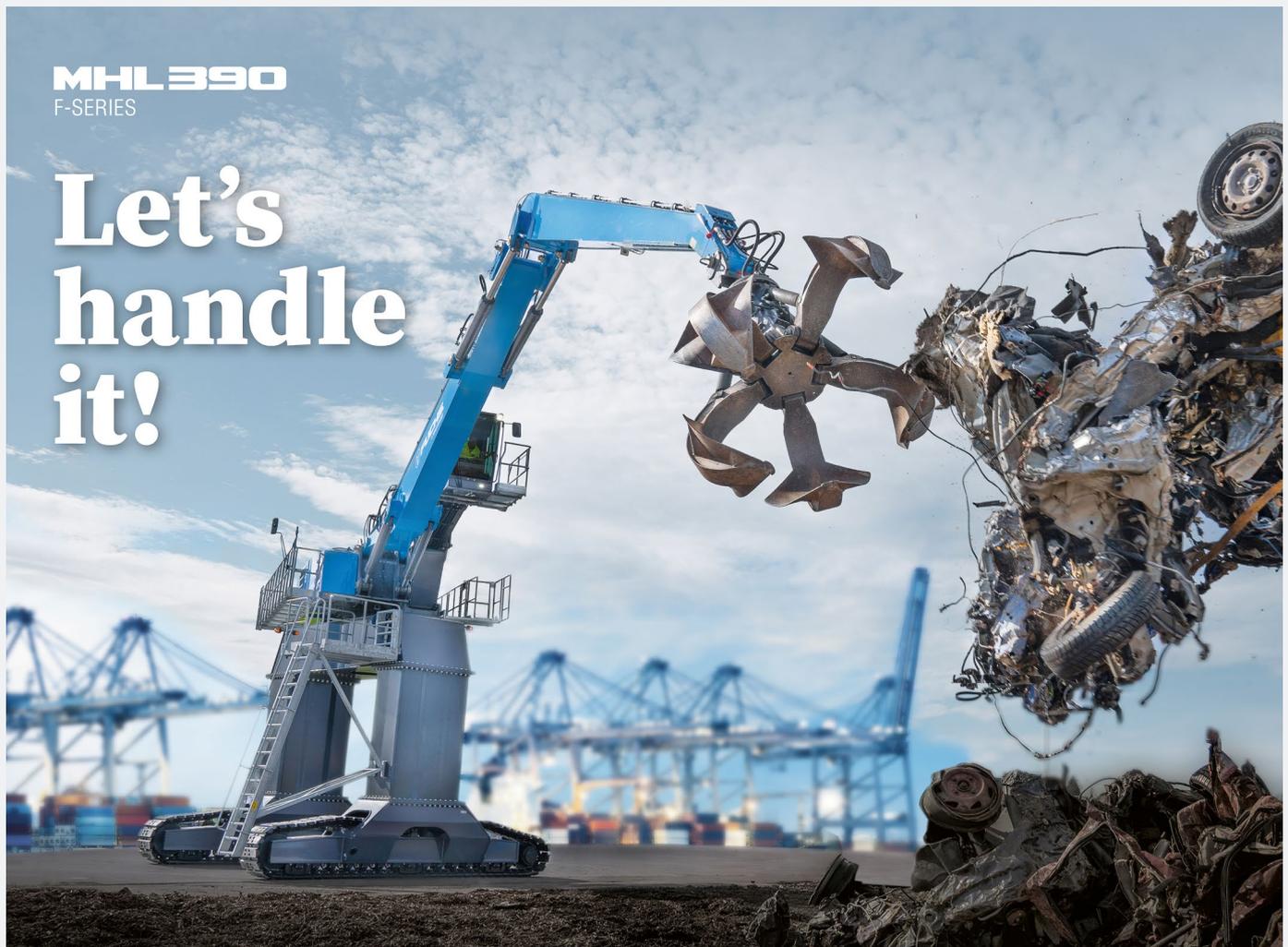
The RHL390F Gantry machine can be also used in conventional loading/unloading/ sorting operations both on the quayside and in the rear areas of the port.

The Fuchs gantry unit has all the advantages that Fuchs has across the range:

- » safe and easy access to major components via the Fuchs service platform
- » double-bearing system of the slewing ring for smooth loading cycles
- » separated high-performance coolers
- » dual pins on the boom and stick
- » metal hydraulic pipelines on the boom and stick
- » Full set of options for ports application
- » Possibility to build every machine with an electric drive
- » Five years telematics as a standard option.

The name Fuchs has stood for innovative loading machine concepts for more than 130 years. Unique design features make our devices real all-rounders in material handling. Whether at the scrap yard, in recycling, in the sawmill industry or for use in ports, Fuchs machines stand for maximum productivity and economy everywhere.

**For more information, contact:**  
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**MHL390**  
F-SERIES

**Let's  
handle  
it!**

# NEUERO: KICK-STARTING INNOVATION

## 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.

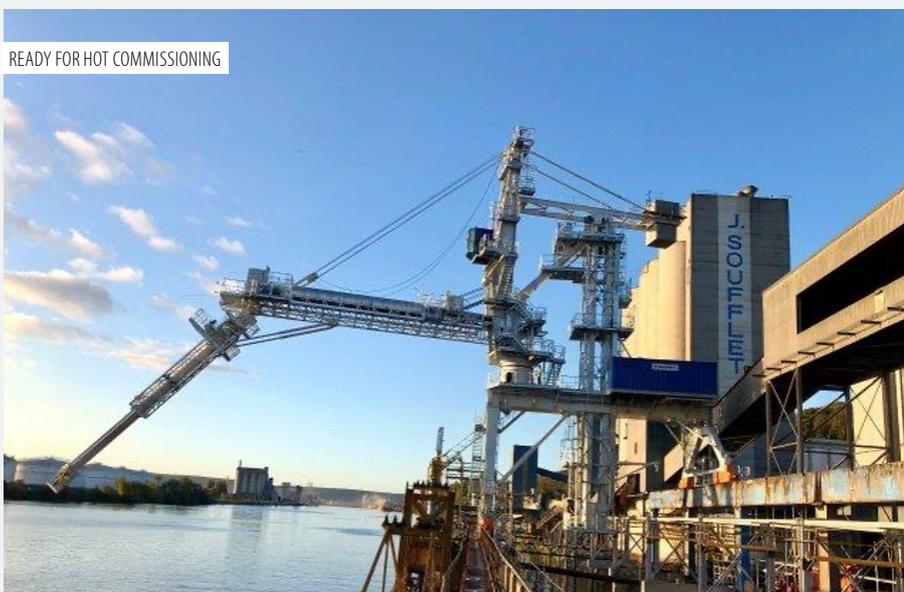
Heavy lift cranes set the shiploader into position at the site and Neuero was able to begin dry testing. The next step was hot commissioning after the site conveyor was ready.

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](https://neuero.de/en)**



# PLAIN SAILING

Technology has a key role to play in boosting productivity in ports and ensuring that every part of the supply chain works effectively



**T**echnology supplier Bruks Siwertell has highlighted the role that technology has to play in port modernisation, with specific reference to the Canadian market. While Canadian ports continue to handle hundreds of million tonnes of cargo every year, the authorities have recently been taking a closer look at supply chains and port modernisation – both areas where technology has a strong role to play.

Canada first launched its ports modernisation review four years ago. One example of how modern technology can be used in reaching port targets is to be found at the Canadian port of Saguenay.

As Bruks Siwertell explains, the port is a gateway to northern Québec, and is home to the Grande-Anse marine terminal. Used primarily for the transshipment of general cargoes, dry bulk and bulk liquids, the terminal is also fed material via innovative air-cushion conveying technology from Bruks Siwertell.

According to Bruks Siwertell: “The conveyors were brought online in 2020 for forestry industry operator Barrette-Chapais. They are a feature at its 210,000 tonnes/year wood pellet production

plant, Granule 777, located near to the port. The facility converts processed wood offcuts and residuals from its sawmills into biomass pellets, which are then used as a renewable energy source, offsetting the use of fossil fuels at power stations.

"Integral to Granule 777's operation is its air-supported conveyor system. With a rated capacity of 800 tonnes/hour for carrying wood pellets, it comprises a 100m-long Bruks belt conveyor and a 250m-long tubulator.

"The belt conveyor carries material from the facility's two pellet storage domes, before transferring it to the tubulator system, which feeds it to the dock where the pellets are loaded on to bulk carriers bound for Europe.

"Both conveyor types do not use idlers under the belt, instead they rely on pressurised air to deliver low-friction, high-capacity conveying with minimal equipment wear and very low operating costs."

Part of the technical mix as far as the tabulator is concerned is the use of suspension cable tower technology, which helps to reduce construction costs Bruks Siwertell says.

"Transporting biomass pellets over long distances can be difficult without causing material degradation. The belt conveyor and tubulator minimise this and also, as they are enclosed, control any dust emissions. They are proving to be an ideal solution for Barrette-Chapais and secure efficient and environment-friendly material transfer to the port."

Meanwhile, on the shores of Lake Ontario, the port of Oshawa, accessed from the Gulf of St Lawrence through the St Lawrence Seaway, handles dry and liquid bulks, and project and break bulk cargo; the largest, by a considerable margin, is dry bulk, including grain and salt.

The terminal unloads material from smaller vessels from various sources to storage and then loads combined shipments on to larger vessels for export. Handling a significant proportion of the grain transfers for the port's export facility is an air-supported conveyor system from Bruks Siwertell.

Grain is a particularly delicate cargo, prone to degradation if not handled carefully. The belt conveyor, installed in 2021, is able to preserve the quality of grain shipments, transferring grain from storage silos to the ship loading system.

Like the system in Saguenay, it delivers highly efficient material transfers, with very low operating and maintenance costs.

"Many ports in Canada still unload bulk material with grab cranes," explains Joanne Turnell, Bruks Siwertell's Canadian representative. "These have a cargo spillage rate of up to 3%, leading to huge material losses and increasingly unacceptable levels of

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environmental impact.

“It is no surprise then that I am receiving a lot of interest in Siwertell screw conveyor ship unloading technology,” she adds.

Bruks Siwertell’s enclosed high-capacity Siwertell screw-type unloaders reduce unloading times and vessel costs, but also save all the material losses from spillage and keep the jetty clean and dust-free. Furthermore, the shorter the unloading time, the greater the possibility for the terminal to increase its annual through-put and by that, also increase its profitability, the company points out.

All Siwertell ship unloaders champion environmental credentials, the company says. They have a totally enclosed conveying line from the hold, where the inlet feeder draws material into the vertical screw conveyor from beneath the surface, to the receiving facility, offering close-to-zero dust emissions and eliminating any wasteful spillage.

“This is essential for environmental protection, and particularly

advantageous for systems that operate within urban environments,” notes Turnell.

The company has also been supplying wood processing systems to serve Canada’s timber trade which is growing steadily, with wood production exports expected to increase in particular as far as the US and China are concerned.

And when it comes to the world’s ever-changing climates and operational landscapes, the company offers dry bulk handling equipment that is able to perform on a global stage.

Equipment has to be able to withstand extreme temperatures. Bruks Siwertell’s dry bulk handling systems can be adapted to perform in temperatures from as low as -45°C up to +55°C, the company says.

The highest grades of steel have to be used in the extreme cold, along with specially-adapted cabling and hydraulics, and all components, such as electric motors, have to be protected from both the cold and the sun.

For example, the Yara fertiliser plant in Glomfjord, within the Arctic Circle,

has a Siwertell unloader that is able to discharge vessels of up to 20,000 dwt. The unloader is equipped with a dust-suppression system and an advanced electrical control unit, including the Siwertell monitoring system, known as SiMon.

Brought online in 2019, the unloader handles demanding dry bulk materials such as various rock phosphates and potash fertiliser at a continuous rated capacity of 600t/h, with a peak capacity of 700t/h. It meets strict environmental criteria, managing high prevailing winds and operating successfully in exceedingly cold conditions.



At the other extreme, Bruks Siwertell customer Kuwait Portland Cement has been operating an ST 490-F rail-mounted Siwertell unloader for more than two decades in Shuaiba Port, Kuwait City. Its new ship unloader, due for delivery in 2023, will be installed on an existing jetty next to the operator’s older unloader.

Both the new and the old unloader are adapted to operate in Kuwait’s extreme climate. To accommodate predicted temperature rises in the region, the latest unit is designed to withstand ambient summertime temperatures of up to 55°C.

As well as ambient temperatures, other climatic conditions also need





consideration. For example, the Yara unloader in the Arctic Circle not only has to withstand the extreme cold, but very strong prevailing winds as well. Other considerations include high humidity conditions and whether the equipment is sufficiently robust to withstand a lightning strike or an earthquake.

Siwertell screw-type ship unloaders and loaders are also totally enclosed, preventing dust emissions and spillage. However, some installations require the next step up in dust prevention with the company incorporating new dust mitigation designs and the use of special high-efficiency particulate air (HEPA) filters.

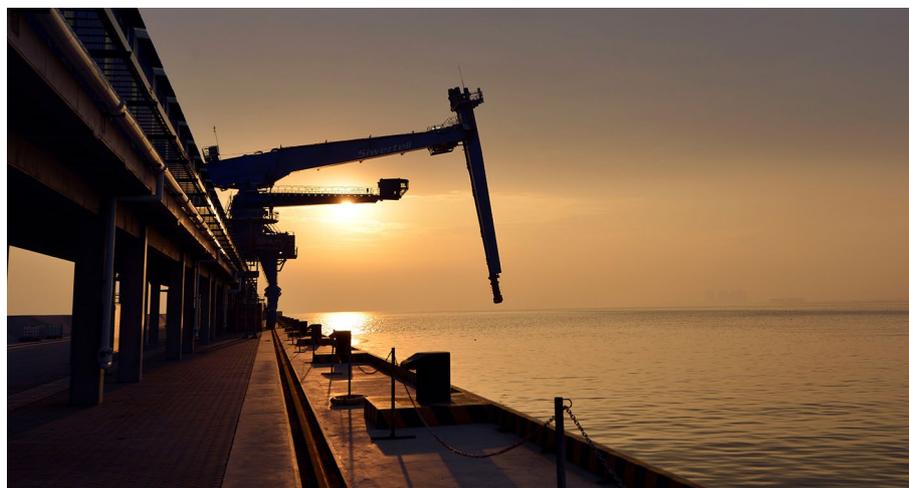
For example, Swedish company Boliden required a unique material handling solution for its new Boliden Tara Mines terminal in Dublin, Ireland. The ship loading system needed to handle zinc and lead, both are extremely hazardous, and a number

of key prerequisites had to be met, including environmental and architectural restrictions.

The installation is located near a popular docklands area and cruise ship port; therefore close-to-zero dust emissions were stipulated in the

contract, and very low noise levels.

The Boliden system is one example of a highly tailored dust prevention approach; other strategies ensure that all downstream conveyors are covered and have dust mitigation systems at material transfer points.



## VESSEL REPORTING

Technology company ZeroNorth has revealed its new open Vessel Reporting Platform, which will improve transparency and data quality, enable emissions reductions and lower manual work at sea and on shore.

ZeroNorth has designed the new open Vessel Reporting Platform to help underpin decarbonisation efforts within the shipping industry. The platform is aimed at solving key challenges associated with gathering accurate data from vessels and will boost data transparency.

The new platform will enable masters to ensure data is accurate and complete before reports are sent to shore. It will help to ensure that gathered vessel data offers a true representation of vessel performance, in turn providing the industry's optimisation solutions with more robust inputs. This will lead to more accurate and powerful fuel and emissions savings recommendations from these types of software.

The web-based platform offers a means of seamless user experience for data entry, saving crew time and cutting onboarding requirements. It will ensure quality data is gathered on the vessel and also enable owners and operators to easily share standardised data across the supply chain.

It works online and offline and can be used simultaneously across different devices, allowing crew to complete and submit vessel reports that are then shared to all stakeholders, avoiding duplication of effort.

The platform's more than 200 in-platform data validation points will ensure data is entered accurately and completely. For example, the platform will check that data has been entered in the right format or sits within plausible boundaries for normal operations of a given vessel, based on sailing conditions and vessel-specific parameters.

The new Vessel Reporting Platform is open to the industry and is available as a standalone solution that requires minimal system setup. For ZeroNorth customers, the new tool is fully integrated into the ZeroNorth platform to further power up the voyage, vessel, bunker and emissions optimisations

generated by the software.

The issue of improving data quality around vessel reports was recently raised by Impact Today, the decarbonisation working group founded by ZeroNorth and other maritime leaders. The working group's recent Vessel Reporting and Data Quality White Paper called for the maritime sector to create a new data standard aimed at evolving noon reports into holistic vessel reports to support vessel and voyage optimisation – and therefore the industry's decarbonisation ambitions.

Jesper Bo Hansen, chief revenue officer, ZeroNorth says: "With our launch of our Vessel Reporting Platform, we are taking a big step to solve the key issue of data quality and transparency that is currently acting as a barrier to industry decarbonisation.

"We know how time-intensive vessel reporting can be and understand how critical these reports are for owners and charterers alike. Vessel reports remain one of the best sources of information on ship and fuel performance, so it is only right that we try to find ways to improve and validate data being supplied from ship to shore.

"Our new Vessel Reporting Platform sets out to solve these challenges, providing crew and shoreside staff with a clear, standardised, and easy way to improve reporting so they become more transparent and accountable to counterparties, and, ultimately, are better able to propel their decarbonisation efforts."

## WORLD FIRST FOR SUPERIOR

Superior Industries, a US-based manufacturer and global supplier of bulk material processing and handling systems, recently completed design and manufacturing work on what it claims to be the world's largest telescopic radial stacking conveyor.

The new TeleStacker Conveyor model is a 1,220mm x 64m telescoping conveyor, capable of building 425,000 ton stockpiles. Superior says the record-breaking stacker will be used to unload dry bulk ships along the Atlantic Coast in Florida.

Operators at the port will take

advantage of the TeleStacker Conveyor's PilePro Automation. This system automatically controls the stacker's actions while building partially or fully-desegregated stockpiles. Some features include pile volume reporting, maintenance triggers and diagnostics screens.

## SHIP TRANSFERS STUDY

The Oil Companies International Marine Forum (OCIMF) has published a new study analysing ship-to-ship transfers under varying environmental conditions.

Ship-to-ship (STS) transfer operations take place across different geographies and under varying environmental conditions, adding to the complexity and risks associated with such transfers. Despite best efforts, mooring line failures are still a leading cause of incidents, potentially causing harm to people and the environment thus jeopardising the integrity of such transfers.

This information paper, *Mooring Load Analysis during Ship to Ship Transfer Operations*, aims to support relevant stakeholders in making their own assessments to determine suitable weather criteria and ascertain an appropriate weather window for STS operations.

The study supports KPIs listed under element five of the *Ship-to-Ship Service Provider Management Self Assessment, 2nd edition (2020)*. Previous editions of OCIMF's STS guide included similar outputs. The current study used advanced mooring line load simulation technology for enhanced assessment of mooring line loads under varying environmental conditions for a variety of ship-type combinations, including liquefied petroleum gas and liquefied natural gas carriers.

**Download the study for free at:**  
[ocimf.org](https://www.ocimf.org)

## AIR SYSTEM SIGN UP

Clean technology company Silverstream Technologies has reached an agreement with Klaveness Combination Carriers (KCC) to install an innovative new version of its air lubrication system, the Silverstream System, on up to 11 vessels, including three CABU II class and eight CLEANBU class vessels.



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The Silverstream System uses a series of air release units (ARUs) in the vessel's flat bottom to generate a uniform carpet of microbubbles that travel the full length of the hull, reducing friction between the hull and the water and substantially reducing fuel consumption and carbon emissions as a result. Silverstream's patented technology maximises these net efficiency gains through the system's low power consumption and highly effective delivery of microbubbles into the boundary layer.

The retrofit installations will commence in early 2023 and take two years to complete.

The collaboration between Klaveness and Silverstream Technologies has resulted in a pioneering solution suitable for any standard tanker and bulk carrier of this size. The deal enables KCC to further enhance the already market-leading environmental performance of its combination carrier fleet. With its

capability to carry both types of cargo and other design improvements, KCC's vessels emit up to 40% less CO<sub>2</sub> per ton-mile compared to standard tanker or bulk carriers in similar trading patterns – a high performance benchmark that will be boosted by the installation of the Silverstream System.

Noah Silberschmidt, chief executive of Silverstream Technologies, says: "We are delighted to sign this deal with KCC and begin work to retrofit our technology across its fleet. KCC has a strong and well-deserved reputation for being a sustainability leader and a genuinely green-minded innovator, and we are confident that our system will help to boost these credentials even further.

"The deal also proves Silverstream's ability to take on complex retrofit projects and again underlines the attractiveness of our unique technology to a wide range of shipping segments and vessel operations. It also strengthens our ability to be able to serve unique

vessel types and positions us perfectly to scale up adoption of our solution in both dry bulk and tanker shipping.

"Shipping has precious little time to act on its environmental footprint and proven clean technologies like the Silverstream System are one of the only ways that owners and operators can get ahead of the curve. We look forward to further scaling our technology across a range of vessel types and fleet sizes in the near future."

Engebret Dahm, chief executive of KCC, adds: "Maximising the energy efficiency of our fleet is a top priority for KCC. It is a prerequisite for reaching our decarbonisation targets and succeeding with the future energy transition. We are pleased to conclude the deal with Silverstream and to start the installation of Silverstream's innovative and proven air lubrication system on two of vessels in 2023, with the intention to roll out the system on a further nine vessels during 2024-25."



# N.M. HEILIG: ENSURING A SMOOTH OPERATION

## COMPANY NEWS



THE BRIDGE SECTION WAS TRANSPORTED BY ROAD AND ARRIVED IN THE MIDDLE OF THE NIGHT

**When a 200m long quay that was more than 100 years old and the loading system on it were in urgent need of replacement, Netherlands-based Walhout Maritime called on N.M. Heilig to ensure everything went smoothly.**

Walhout Maritime specialises in keeping storage and transshipment companies operational by realising or maintaining mooring facilities during quay construction and maintenance. Since these components are the lifeblood of these companies, an integrated approach is necessary.

N.M. Heilig – part of Heilig Group – worked on a new loading portal for fertiliser manufacturer Rosier Nederland at the quay in Sas van Gent, collaborating on the ideal solution for loading and unloading facilities and working out the entire process from design and choice of materials to implementation.

The challenge was that Rosier's storage and transshipment activities had to continue during the 10-month quay replacement. During this time, eight temporary mooring facilities were used so that construction could continue while ships were loaded.

Once the main construction of the quay was completed with the old shiploader retained, everything was set in motion to dismantle the old loader and install and commission the new loader within two weeks.

In order to carry out the replacement of the loading portal as efficiently as possible, N.M. Heilig constructed a parallel workflow, beginning the construction of the new shiploader as work began on the quay repair. With its large workshop, N.M. Heilig was able to assemble, mount and prepare the whole bridge section for transport.

During the design, the maximum dimensions of the bridge section were taken into account, so that it could be transported on the public highway with the necessary transport guidance.

After four hours, the more than 36m-long, 4.5m-wide and 110,000kg heavy bridge section arrived in Sas van Gent in the middle of the night, where it was lifted and placed the next day using two telescopic cranes.

Rosier has been making high-quality fertilisers for 140 years and is active in 120 countries, contributing to sustainable and efficient global food production. The new shiploader loads ships quickly and efficiently for fertiliser distribution and is retractable, extendable and therefore mobile, allowing even or angled loading across the vessel at a speed of 300 tonnes per hour. A special bellows function has been applied to reduce dust formation, which can go over a 6m ship railing, so it is suitable for both barge and coaster. The control cabin, meanwhile, is fully executed by Beemster Electrical Solutions, also part of the Heilig Group.

By making use of several companies within the Heilig Group, a smooth-running process with little disruption to the companies involved was ensured. After two years, it is an impressive final result.

N.M. Heilig designs, builds and installs bulk handling and recycling systems, both single machines and complete turnkey installations. Let's see how we can help you design and produce a system that meets your exact standards and requirements.



**For more information, contact:**

**N.M. Heilig B.V.**

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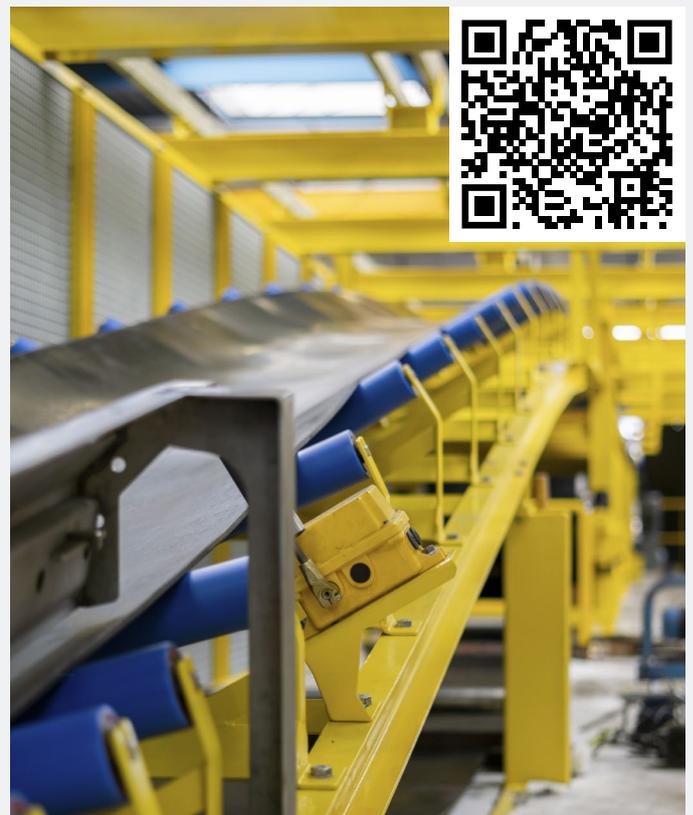
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N.M. HEILIG CONSTRUCTED A PARALLEL WORKFLOW, BEGINNING WITH THE CONSTRUCTION OF A NEW SHIPLOADER



# TELESTACK: A MORE MOBILE APPROACH

## COMPANY NEWS

**The operational success achieved within the mobile sector has gone a long way to highlight the rigidity and limitations of traditional “fixed” operations. The ability to achieve flexibility, efficiency and compliance within any given multi-cargo port along with the ability to meet all the necessary operational metrics with ease, has prompted a definitive global trend towards mobile equipment in the port.**

The introduction of the Telestack All-Wheel Travel direct “truck-to-ship” ship-loading system has transformed the flexibility and rapidity given to operators, not only in terms of speed (achieved by faster loading rates), but also the agility achieved through the ability to operate and move large scale shiploaders within the limited space on current jetty/docks.

The surge in demand for this type of system encouraged Telestack to develop this concept further with the introduction of a high-rise chassis that enables the unloading truck to drive under the system, opening up a host of options for jetties that are restricted in width (<25m-wide jetty/dock). The demand for such a system is particularly strong in regions with a developed infrastructure that would not allow for expansion, but where the desire to “move to mobile” exists, based on the level of success achieved by fellow multi-purpose ports.

Telestack International sales manager Carl Donnelly, explains: “Before the development of the ‘high-rise’ system, mobile solutions would not be a viable option for those operations loading handymax

or panamax-type vessels. This would render the operator’s equipment selection limited to typical fixed conveyor systems or grab/mobile harbour crane systems. In modern developed ports around the world, where space is such a commodity, certain infrastructures could only consider fixed systems as there was not enough space to allow for mobile operating systems, until the high-rise design eliminated this issue.

“The TB range of radial telescopic shiploaders from Telestack offers a range of mobility features including in-line, parallel travel, radial and steering. This results in the most mobile all-wheel travel system in the market ensuring the unit can move with speed, ease and accuracy from ‘hold to hold’ during the loading operation. The high-rise design allows the unloading truck to drive underneath the shiploader chassis with ease marking a host of options for the compromised jetty.”

These all-wheel travel high-rise mobile ship-loading systems represent a new generation of mobile solutions, offering the performance of traditional systems, but with the added benefits of mobility, flexibility and, ultimately, a lower cost per tonne achieved by increased production rates, reduced cycle times and reduced labour costs – now within a restricted jetty. The added ability to truly customise the product to the specific needs of the customer, the locality, the commodity and the quayside is yet another reason why the sector was so keen to push for a mobile solution within the restricted jetty.

Telestack offers a level of customisation that is relatively unmatched in the business and it is this level of personalisation that makes it so successful in this area. The ability to incorporate a host of dust containment / extraction options to meet the needs of the local and regional environmental regulations, while ensuring that it can work with



THE INTRODUCTION OF THE TELESTACK ALL-WHEEL TRAVEL DIRECT “TRUCK TO SHIP” SHIPLADING SYSTEM HAS TRANSFORMED THE FLEXIBILITY AND RAPIDITY GIVEN TO OPERATORS, NOT ONLY IN TERMS OF SPEED (ACHIEVED BY FASTER LOADING RATES), BUT ALSO THE AGILITY ACHIEVED THROUGH THE ABILITY TO OPERATE AND MOVE LARGE SCALE SHIPLADERS WITHIN THE LIMITED SPACE ON CURRENT JETTY/ DOCKS

more than one material (taking into consideration their differing weights, densities and flow) has meant a truly tailored solution is offered to the customer.

In a recent installation of the high-rise design in South America, the unit was designed with double-sealed dust covers, fully sealed transfer points, dust extraction filters at transfer points, undertrays to prevent any spillage on the jetty, and a 20m telescopic discharge chute to allow controlled trimming of the hold during the loading process. This level of customisation ensures that the system is fully tailored to the environmental needs of the operation.

Telestack is also at the leading edge of electrical sophistication and has a growing and highly skilled electrical team dedicated to ensuring that any Telestack unit can fully integrate into the port's operating system successfully. In the same installation in South America, the unit was fitted with a customised IP 66-rated diagnostic control panel complete with easy-to-use touch screen. For the operator, who will have to manage several different elements of the shiploading process, the Telestack solution offers the ability to monitor and control the plant from a single location using radio remote control. The integrated generator manages all functions of the shiploader resulting in an autonomous and independent unit with the ability to switch to shore power as and when required.

Telestack's electrical engineering team is one of the fastest growing departments within the business and the company is continually invested in working with clients to meet their electrical needs. This level of personalisation can also extend to guarding, handrails, dust containment and more.

The need for flexibility to adapt to differing operational needs in the handling of any dry bulk in pit to port, pit to plant or port to plant is important. One of the main reasons for the growth within the mobile sector is the ability to use the same equipment along several parts of the logistics chain. The mobility factor ensures that a company can use the equipment as required in one area of the operation and move to another area with ease and speed,

or, indeed, move the units to storage areas, as and when required. This is flexibility that simply cannot be achieved by a traditional fixed infrastructure.

In the current climate where the nature of any given business may have to change in response to changing commodity demands, mobile equipment allows the owner to react quickly. The smart design means that the unit can be easily dismantled, packed into containers and relocated to another site or country as required. The versatility and multi-faceted use in a variety of global applications (sea ports, river terminals, mines, quarries, power plants, cement plants, steel mills, and so on) coupled with excellent resale values ensures there is always a high demand for mobile products.

Mobile equipment often helps reduce initial capex as they are typically significantly cheaper to buy than mobile harbour cranes and stationary systems. Such equipment also means there are significantly lower civil engineering and infrastructure costs, and it can easily link into existing material-handling systems. Customers can be generating revenue streams very quickly.

Typically designed to not require any onsite welding, a standard shiploading unit can be transported in several 12m containers and be operational within a few weeks – all with limited/no planning requirements or restrictions as found with stationary solutions. Moreover, the operating costs are significantly less than traditional systems.

The ease of use means that all machines are simple to operate, maintain and troubleshoot as there are no complicated electrics/electronics to manage, and hydraulics can be kept to a minimum.

With more than 35 years of experience under its belt and thousands of global installs, Telestack has earned its reputation in the international marketplace for well-designed and no-nonsense mobile bulk material handling equipment. This reputation as the innovator within the industry is a result of its long history of bringing real solutions to problems that have long-plagued the industry. As Telestack is part of Astec Industries Group, its customers in South America can rely on local support from Astec-owned facilities in Chile (Santiago) and Brazil (Minas Gerais), as well as a growing network of experienced material handling agents that are focused on supporting the sea ports and river terminals in that and other international regions.

In addition, Telestack's customers are also benefiting from support from the Telestack helpdesk. With the help of the optional integrated Telematics feature, the helpdesk can support the operation to remotely help troubleshoot any issue in real time. This provision has proved invaluable in the current climate where covid-related restrictions have prevented travel and access to some sites and the operation has benefited greatly from having the additional support from Telestack remotely.

The engineering acumen within Northern Ireland is renowned globally and the expertise within Telestack has grown and developed significantly over their tenure. Its equipment is involved in some of the most ground-breaking and forward-thinking projects across the globe, with the company gaining serious traction in other industries such as rail, power, cement and steel plants.

**For more information, contact:**  
**telestack.com**



THE HIGH-RISE DESIGN OF THIS ALL-WHEEL TRAVEL SHIPLOADING SYSTEM ALLOWS THE UNLOADING TRUCK TO DRIVE UNDERNEATH THE SHIPLoader CHASSIS WITH EASE OPENING A HOST OF OPTIONS FOR THE COMPROMISED JETTY

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**GOLFETTO SANGATI**



# GROWING MARKET

Demand for efficient, cost-effective grain handling equipment has increased dramatically over the past few years, driven by the expansion of the grain trade



**G**rain is now the third largest cargo that Bruks Siwertell's equipment handles, according to Per Hansson, sales director for EMEA and Latin America at the company. He estimates that the company's ship unloaders have enabled operators to cut days unloading by up to 50%, reducing time spent in berth and increasing annual intakes.

"But we have not stopped here," he says. "A recent innovative research and development programme, targeted at improving the lifetime of the vertical screw conveyor and its component parts, has yielded extremely positive results, which are now applicable to Bruks Siwertell's entire portfolio of screw-type equipment, including Siwertell ship unloaders, loaders and conveyors. Grain handlers look set to significantly benefit from the developments."

He adds: "By dramatically improving the service life of wear parts, customers save money on through-life maintenance, without increased investment costs. Furthermore, the environment benefits from a more sustainable approach."

"Grain handlers have to meet some of the most challenging dry bulk material requirements. Import and export

terminals are subject to massive surges in intake from the seasonality of crop harvests. Their dry bulk equipment must match these, and offer consistently high capacities for maximum profitability, but also maintain the quality of shipments through sensitive handling."

Siwertell screw-type ship unloaders can discharge grain and other agri-bulk commodities at rated capacities up to 1,800t/h.



BRUKS SIWERTELL HAS EFFICIENT LOADERS AND UNLOADERS

The company has grain, soya bean and soya meal handling systems operating in Brazil that run up to 4,000 hours per year. These systems work to some of the agri-bulk industry's tightest seasonal schedules and there is no capacity for any unplanned downtime.

High-use conditions naturally have an inevitable impact on wear parts, Hansson says. "When combined with the remoteness of some operations, many of these customers often carry a large stock of critical spare parts, minimising the risk of unexpected stoppages.

"However, being able to offer longer screw conveyor lifetimes ensures a better balance between cost and component longevity, so we can meet the needs of this sector in a more effective way."

## SILO SAFETY

Following on from collaborating with the Mineral Products Association (MPA) on new guidance for safer pressurised tanker deliveries, Hycontrol has now launched the updated Shield Lite silo protection system (SPS).

The revised SPS is smaller than previous versions, with all critical silo-top safety components built in and pre-wired to provide simpler, easier and lower-cost installation. This design yields safe deliveries straight out of the box, cutting the chance of wiring mistakes.

Utilising purpose-designed pressure monitoring and control equipment, Shield Lite meets and exceeds current best practices, including those in the new MPA guidance. Powder storage silos are used across many industries but are at risk of over-pressurisation during tanker deliveries. Pressures as low as one psi are enough to rupture a silo or forcibly eject the filter unit from the roof.

Besides the physical danger and risk of fatalities from falling equipment, this can cause massive equipment damage and environmental pollution. A comprehensive, failsafe safety and control system is vital to prevent such disastrous outcomes. Shield Lite provides a fully-automated self-testing safety system that removes the risk of human error from the delivery process by thoroughly monitoring and controlling it.

The high-accuracy pressure safety components are pre-assembled and wired for simple installation. In addition, the system incorporates Hycontrol's Ground Level Testing, through which a single key-turn activates a full-function test of all the crucial safety components without climbing the silo.

Hycontrol managing director Nigel Allen says: "We have insisted for many years that simplicity is the key to safety, so we have made a system that will make a silo safe straight out of the box. With baked-in fail safes like ratio alarms, filter blockage warnings and driver delivery behaviour diagnostics, we can effectively eradicate the risk of human error.

"We understand that mistakes in maintenance and testing are inevitable. Our philosophy is to accept this and provide a system that monitors and safely alerts you when these errors occur. Safety for staff, contractors and drivers should always be the number one priority. As we say – safe silos are tested every time."

## GRAIN RECALCULATION

A report by Reuters says sanctions-hit Russia has approved changes to the formula for calculating its grain export taxes to support shipment in the July-June marketing season, according to its agriculture ministry.

"Russian farmers are expected to harvest a massive wheat crop this summer, bringing a record exportable surplus in the 2022/23 season. However, shipments are complicated by high export tax, a strong rouble and sanctions-inflated costs for freight and insurance," says Reuters.

The new base price for calculating the wheat export tax is set at 15,000 roubles (\$283.68 at the current rate) per tonne, the ministry says.

"It was previously in US dollars at \$200 a tonne. The Agriculture Ministry used the base price as well as price indicators reported by traders to determine the level of tax on a weekly basis. It is set at \$146.1 per tonne for June 29 to July 5," Reuters explains.



## PACKING DANGERS

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 has warned.

“Containers are an increasingly popular, cost-effective method for the transport of bulk commodities such as grain. 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 the club, dangers include issues including:

- » Distorted (bulged) containers that can lose their structural compressive strength. 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.
- » Containers may be overweight or overloaded, 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 but also potentially during rough intermodal movements or handling, can result in vehicle overturns or derailments.
- » Grain cargoes spilt on board ships potentially result in significant problems for the ship’s bilge system. The associated clean up can be complex and costly.
- » Given the nature of the cargo, there is inherent risk of introducing

unwelcome pests into the supply chain and ultimately to the destination country. Some pests, such as the Khapra beetle, can remain hidden in voids within the container for several years. Similarly, 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, tainted by previous cargo residues and noxious materials.

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

Under the International Maritime Organization/International Labour Organization/United Nations Economic Commission for Europe Code of Practice for Packing of Cargo Transport Units (CTU Code), it is the responsibility of the shipper and packer to ensure that the container is suitable for the movement of grain and that the cargo is packed to withstand the rigours of transport.

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.

For a more visual look at the consequences of ignoring the code, watch the Club’s *Use the Code – contain the risk* animations. The Club has also developed a Container Packing Game as a simple, fun way to highlight the importance of packing skills.

**Visit [ttclub.com](http://ttclub.com) for more information**

## BOOST FOR T-PORTS

The Wallaroo port project development was officially launched earlier this year, signalling a shift in Australian grain exports for Yorke Peninsula and Mid North grain growers.

T-Ports, which has provided innovation to the Eyre Peninsula grain supply chain through the introduction of its transshipment port at Lucky Bay and upcountry sites at Lock and Kimba, has now received final development approvals for the Wallaroo development.

T-Ports chief executive Officer Kieran Carvill says the company has also successfully negotiated an Indigenous Land Use Agreement with the Narungga Nation Aboriginal Corporation.

“We look forward to building a strong partnership with the Narungga Nation Aboriginal Corporation and bringing development and career opportunities to the traditional landowners,” Carvill says.

The company says with construction underway, it is looking forward to being able to offer growers competition.

“The port at Wallaroo is the logical next step in the T-Ports journey and we’re excited to see the opportunities for Yorke Peninsula growers after witnessing the significant returns delivered to Eyre Peninsula growers this past harvest,” he says. “There are efficiencies and cost savings in building this port on the opposite side of the Spencer Gulf to Lucky Bay as we will use the same transshipment vessel, the *MV Lucky Eyre*.”

“We’re looking forward to offering competition for growers in the Yorke Peninsula and Mid North regions and delivering supply chain savings.”

Minister for Primary Industries and Regional Development David Basham says the new port will be a game changer for local growers.

“The new port has been in planning for a long time and to see construction starting is a fantastic milestone,” he says.

“The new port will be warmly welcomed by Yorke Peninsula and Mid North grain growers and it will be ready to receive grain in time for the 2022/23 harvest.”

The grain export facility will feature steel silos with 20,500 tonnes of grain capacity and a 500m rock causeway with grain conveyed to a ship loader for loading on to the transshipment vessel. A bunker site will feature six bunkers with a total of 240,000 tonnes of grain capacity. T-Ports will be ready to receive grain for the 2022/23 harvest.

# BEDESCHI: ALWAYS INNOVATIVE

## COMPANY NEWS

**In an ever-more globalised and competitive world, port infrastructure changes quickly.**

Today, taking bulk material far from quarries by sea involves ships of an ever-increasing size. Handling dry bulk is very different than handling containers and involves many aspects: loading rate, weather conditions (wind in particular), dropping height and the technology used to load/unload the material and its specific characteristics.

It is clear that to guarantee efficiency in ports, it is necessary to optimise land-side logistics (storage size and layout), reduce loading/unloading times and create functional and eco-friendly terminals.

Investment into eco-friendly and innovative equipment is essential to maintain an efficient port environment.

Bedeschi's research and development department is constantly working to improve the capability of our systems, focusing on environmental protection, energy efficiency and pollution prevention. These elements will become increasingly important in our industries and this is where Bedeschi is striding ahead with innovative technological developments.

Bedeschi is working on reducing dust emissions even further during bulk material loading and unloading operations in several ways: the proper selection of belt speed according to the handled cargo, the positioning of the belt conveyor and tripper in an enclosed gallery, the use of a pipe conveyor and enclosed conveyor, and, where possible, the use of gas cleaning and water spray for dust suppression.

Using different conveying systems, such as screw conveyors and chain conveyors, is just one alternative to avoid dust pollution.

These solutions can also be applied to shiploaders, where the correct chute selection is essential for increased environmental protection. The choice of chute depends on the material's fragility, especially for pelletised or briquetted types, which can easily be broken.

Bedeschi has carried out many in-depth studies on loading chutes to ensure optimum environmental protection. For example, its telescopic chute with tiltable hopper controls material flow with a very low environmental impact, making it suitable for dusty products. Its spiral chute, meanwhile, allows the loading of the vessel while avoiding material falling from a great height.

The following page highlights just a selection of Bedeschi's latest applications that have ensured full environmental safeguarding inside ports.

“ Investment into eco-friendly, innovative equipment is essential to maintain an efficient port environment. Bedeschi is striding ahead with innovative technological developments

**For more information, visit: [bedeschi.com](https://www.bedeschi.com)**

## CARGILL, AUSTRALIA

One of the best examples of Bedeschi's engineering and manufacturing capabilities, this shiploader is fully mobile on rubber tyres and can load grains and oilseeds on panamax ships at a capacity of 1,000t/h, received from trucks on a two-lane, drive-over hopper, fully integrated and mobile with the shiploader itself. The shiploader is engineered according to local standards and loads the material dust free thanks to a Cleveland Cascade telescopic chute.

Due to the reduced availability of the receiving quay, the machine was delivered at site fully erected and dry tested.



BEDESCHI SHIPLoader FOR CARGILL AUSTRALIA IN OPERATION

## AL SARH TRADING CO, QATAR

Al Sarh Trading Co in Qatar commissioned Bedeschi to supply handling equipment to operate in Oman - Khatam Malaha.

The equipment includes three conveyor belts with a total length of 4.3km, with the capacity to handle gabbro and other materials at 2,000t/h. The last section of the conveyor is engineered for offshore installation, with self-holding galleries structure installed above pylons.

This last section of the conveyors is running above sea, so to reduce the possibility of spillage of the material due to unexpected weather conditions, the belts are running inside a gallery that is completely sealed on all four sides.

Approximately 2km out in the open sea, there is a luffing and slewing type shiploader. Its capacity is 2,000t/h to load vessels up to 55k dwt. It is installed on an off-shore platform and designed to work on both sides of the platform with a boom length of 30m.



BEDESCHI'S SHIPLoader FOR AL SARH WAS DELIVERED FULLY ERRECTED

## WEST WEGO, US

Bedeschi supplied a shiploading system for the refurbishment and upgrading of an existing facility operating on the Mississippi river – the most important export terminal in the area.

Bedeschi engineered, manufactured, installed and commissioned a shuttle-type shiploading arm capable of loading grain and oilseeds at 2,200 t/h on vessels up to 120,000dwt. Bedeschi undertook the project as well as mechanical and electrical works on a turnkey basis. The equipment was pre-assembled in Italy and shipped to New Orleans in three main parts. This is a clear example of an eco-friendly solution made for reducing to a minimum the downtime in port handling operations, thereby maximising the customer's benefits.



BEDESCHI SUPPLIED A SHIPLoader TO OPERATE ON THE MISSISSIPPI RIVER

# VIGAN: FIVE POINTS TO SUCCESS

## COMPANY NEWS

**VIGAN offers mechanical and pneumatic solutions for unloading systems. But how do owners and operators choose between them? Here are the five main points that could help ports and bulk operators to make the right decision.**

### EFFICIENCY

Efficiency is calculated based on the ratio between the average capacity divided by the peak or nominal capacity. A pneumatic unloader has a high efficiency, the main reason being that it is sucking everything up from the very bottom of the ship. The total time to discharge the vessel "berth in – berth out" is then shorter with a pneumatic unloader compared with the same situation with a mechanical unloader of the same capacity.

### POWER CONSUMPTION

Mechanical unloaders have a low nominal energy consumption at full capacity. Pneumatic unloaders are sucking up not only grain, but also a lot of air. However, for the past few decades, there has been much progress in pneumatic technology, resulting in a drastic decrease of energy consumption reaching between 0.7-0.8kWh/t. These progresses were mainly created by reducing the number of elbows, the use of multi-stage turbo blowers and the use of electronic inverters, allowing pneumatic unloaders to be programmed, according to required power.

### INVESTMENT COSTS

In addition to the machine's budget, other factors to consider in investment costs are

extra fees to pay for quay construction or refurbishment, transport costs and downstream equipment sizing. Pneumatic unloader power consumption is largely compensated by lower investment costs and higher efficiency.

### WEAR AND TEAR

The use of electronics, high-wear resistant alloys and increased machine size (ratio surface volume decrease) makes wear on pneumatic unloaders less than on mechanical types.

### FOOD SAFETY AND CLOSED CIRCUIT

Pneumatic unloaders are big vacuum cleaners. The discharge operation is generating no dust and no spillage on the quay, from the beginning of the hatch up until the end. Mechanical unloaders can guarantee very clean operations as well, most of the time, but the final discharge and cleaning might require more handling equipment, or lifting of big bags, increasing the risk of dust.

Other factors are also important in the customer's decision such as stoppage due to foreign materials, maintenance, weight, health and safety and necessary operators' skills.

**For more information, visit:**  
[vigan.com](http://vigan.com)



A VIGAN MECHANICAL UNLOADER SIMPORTER 1000TPH ON RAILS TRANSFERRING THE CARGO ON A CONVEYOR BELT

# ON THE FAST TRACK

Many ports and terminals are ramping up their rail links to improve the flow of goods at a time of intense activity



**P**roject44, the leading supply chain visibility platform, recently announced its acquisition of Potsdam-based Synfioo, provider of a platform for rail freight data in Europe. Through this deal, project44 has also extended its barge element for inland waterway segments across the continent.

Synfioo's visibility and estimated time of arrival capabilities complement Project44's multi-modal visibility platform used by leading shippers, LSPs and carriers. With Synfioo, project44 will provide customers with end-to-end data to facilitate faster on-time deliveries and more accurate ETAs, as well as low-carbon rail and barge shipping in Europe.

"Europe's rail infrastructure was developed nearly 200 years ago and was not built for the cross-border trade that exists today," says Marian Pufahl, former CEO & co-founder of Synfioo. "Our platform brings together a proprietary infrastructure network and freight forwarder information to offer the most comprehensive rail freight data for Europe. As project44, we will continue to drive data harmonisation between the various rail networks and provide unrivalled visibility to our customers."

Through the acquisition, Project44's European rail network now provides the following capabilities:

- » Comprehensive visibility of all cargo rail movements across European countries
- » IoT-enabled rail tracking combined with proprietary data, and direct integration to all of Europe's rail infrastructure networks for granular visibility
- » Visibility of more than 99% of European rail volume, including wagon-level tracking for 90% of rail cars, to ensure visibility for every customer shipment
- » Intermodal end-to-end rail data combined with machine learning algorithms offering the most precise rail journey ETAs and customer delivery times

Project44 has also enhanced its barge visibility capabilities as part of this acquisition, to provide granular, accurate visibility of vital inland waterway segments across Europe. Customers can now harness specialised data science techniques, combined with real-time satellite tracking, to ensure the most accurate visibility of inland waterways.

Key features include:

- » Intelligent asset-matching technology that extends visibility coverage, using data science-based techniques to track individual barges in real-time, without requiring traditional identifying information
- » Dynamic routing models that offer accurate ETAs, as well as intermodal end-to-end movements that include barge segments
- » Sophisticated water depth modelling and inland waterway data sources which enable carriers to assess load capacity, maximise on-time deliveries and avoid delays for shippers and logistics service providers.

“By acquiring Synfioo, we’ve not only expanded the breadth and depth of our visibility platform, but also added European tech talent and expertise to our rapidly growing international team, which is now well over 400 exceptional team members,” says Renaud-Houri, EVP International at project44.

“Shippers, LSPs and carriers aren’t alone in navigating the complex European market, with project44’s platform making it easier than ever to improve ETAs, reduce costs, maximise on-time deliveries and mitigate bottlenecks. Most importantly, this level of visibility will help more companies to harness sustainable, low-carbon rail and barge shipping, which will play a vital role in helping Europe meet its net-zero ambitions.”

“We started our journey with Project44 in 2021 to help us deliver global visibility and improve the accuracy of our ETAs. This information is essential to our customer commitment of responsive logistics,” says Xavier Bour, global ground and rail leader at CEVA Logistics.

## TOP-LEVEL TALKS

DB Cargo UK recently hosted top-level talks on plans to grow international rail freight traffic.

The event was hosted by the company’s CEO Andrea Rossi and involved a range of influential figures from government, business and the rail freight sector.

During the meeting, those present discussed the barriers and opportunities to increase the volume of rail freight going through the Channel Tunnel, which is particularly relevant given the huge problems currently being experienced at some of the UK’s ports.

DB Cargo UK’s CEO Andrea Rossi said: “Growing our international traffic and developing new European corridors are key strategic objectives for DB Cargo and there is no better time to drive forward discussions on what needs to change to achieve this.

“I was incredibly heartened by everyone’s willingness to engage in open and frank discussions on the future of international rail freight and the solutions it presents to many issues facing society at the present time,” he added.

DB Cargo UK recently completed a successful bid for funding to create a new customs approval area at its intermodal terminal at Barking in London.

Thanks to a £470,000 award from the government’s multi-million pound Port Infrastructure Fund, work is due to begin shortly to build a new inland border control facility at the site to speed up the seamless movement of goods into and out of the country following the end of the Brexit transition period.

The investment will fund the construction of a new warehouse, where Border Control staff will be able to conduct inspections and where containers can be loaded and unloaded for onward travel. It will also include a new secure storage area to hold any confiscated/seized goods, additional site security and office and welfare facilities for HMRC staff.

## PARANÁ ON THE UP

The volume of cargo passing through the ports of Paraná by rail increased by 6.4% in the first four months of 2022, compared to the same period last year

The products that increased the most included corn, soy, fertilizers, oil derivatives and containers.

In the first four months of last year, 7% of the volume of corn exported by

the Port of Paranaguá arrived in wagons. This year, it rose to 11%. For soybeans, it went from 28% to 29%. Among fertilisers destined for the interior, this share went from 2% to 5%.

Plans are going ahead to increase the participation of rail at the ports of Paraná, director of operations, Luiz Teixeira da Silva says.

## APAPA CONNECTIONS

PM Terminals Apapa in Nigeria has announced plans to get involved in government plans to connect Apapa to the Lagos-Ibadan standard gauge rail line.

Klaus Laursen, the country manager of APM Terminals Nigeria, outlined the rail connection plan during a visit to the terminal by minister of state for transportation, Senator Gbemisola Saraki.

“Linking the port to the rail line will facilitate cargo delivery,” said Laursen, who is backing a multimodal transportation system to evacuate cargo from the port to avoid port congestion.

“APM Terminals Apapa first restored the rail in the port in 2013, leading to the movement of containers from Apapa port to Kano and Kaduna three times a week,” he explained.

“Connecting the port to the new Lagos-Ibadan standard gauge rail line will offer cost advantage to consignees and reduce pressure on the road network.”

## GRAIN FROM UKRAINE

In co-operation with other partners, CD Cargo took the first train with corn from the Ukraine to the German port of Brake. From there, the shipment continued by ship to Egypt.

“The train carried about 1,800 tonnes of corn, which was loaded into the Uagps standard gauge wagons at the TKD transshipment depot in Dobrá near Čierna nad Tisou,” explains the chairman of the ČD Cargo Board, Tomáš Tóth.



# BEUMER: THE SHAPE OF THE FUTURE

## COMPANY NEWS

**Beumer's u-shaped conveyor allows the implementation of narrower curve radii than a troughed belt conveyor and higher mass flows than a pipe conveyor. At the same time and contrary to the troughed belt conveyor, it protects the material conveyed from environmental stress and the environment from material loss and emissions. Thus this u-shaped conveying solution has proved to be an ideal alternative in the cement and mining industry, as well as in port terminals if high capacity is required with little space available.**

Closed pipe conveyors are suitable for protecting fine material such as ash and ore concentrates or even household waste from external influences. The higher the requested conveying capacity has to be,

the bigger in dimension the whole system has to be dimensioned. The diameter directly affects the width of the conveyor and the minimum curve radius.

So what happens if the required space is unavailable? "We offer our u-shape conveyors in different versions. This depends on the respective application," says Karl Filarowski, sales director, BEUMER Group Austria. The p-u-shape conveyor offers the functionalities of a pipe conveyor, but is also able to transport coarse materials. In this version the upper strand is formed to a 'u', while the return strand keeps its tubular shape. "This saves space and prevents loss of material," explains Filarowski. This solution permits the owner to benefit from a significantly higher transport capacity with the same belt width compared

with a pipe conveyor. Filarowski offers an example: the pipe conveyor is a volumetric system. If we consider the starting basis of a tube diameter of 150mm and a belt width of 600mm, the conveying capacity amounts to 100m<sup>3</sup> per hour. The p-u-shape conveyor achieves a capacity of 170m<sup>3</sup> with the same size. "Thus we can offer the customer an approx. 70% higher conveying capacity," says Filarowski.

### ADAPTABILITY IS KEY

The t-u-shaped conveyor, on the other hand, is suitable if the owner relies on the advantages of a troughed belt conveyor, but has to consider specific topographic conditions. This happens if, for example, narrower curve radii are required or if there are line sections, which require a thinner construction. This way it is for example possible to install a troughed belt conveyor for the routing outside the tunnel, and in the tunnel itself the design of the conveyor changes to a t-u-shape conveyor.

"Compared with a troughed belt conveyor with a capacity of 500 tons per hour and a belt width of 650mm, it is possible to achieve the same capacity with a t-u-shape conveyor, saving 150mm of space," describes Filarowski.

"The bigger the troughed belt conveyor, the bigger the related space saving."

**For more information, visit:**  
**[beumer.com](http://beumer.com)**



T-U-SHAPE CONVEYOR

# FULL STEAM AHEAD?

BY BASIL KARATZAS

The iron ore rally seems to have lost steam for now, but capesize vessel freight rates imply otherwise

**A**ny way one sees it, we all still live in a covid-19 world, whether we like it or not. Massive vaccinations notwithstanding and a lift of travel and mask-wearing restrictions in the western world may have given us a sense of normalcy – which is most welcome news after almost two years of lunacy – but the effects of covid-19 are affecting our lives in both visible and tangential ways today.

The prevailing logic has been that

once a vaccine for covid-19 was found, the happy days of 2019 would have rolled back, as if flipping a switch. How naïve we all were! Although economic activity may have been recovering nicely since the covid-19 vaccine, recovery of industrial production has not been smooth, as factories have been short both of labour and of raw materials.

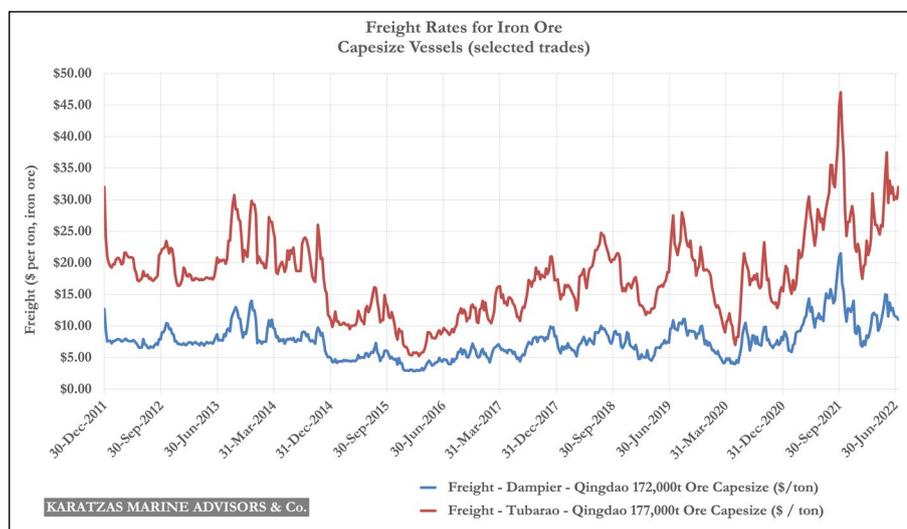
Shifting spending patterns by consumers have only made imbalances more exacerbated and through the

“bullwhip effect”, supply chains have barely managed to keep up with demand and timely deliveries.

Coming out of covid-19, prices for commodities skyrocketed, as factories started revving up production to meet recovering demand and also as they were also trying to replenish inventories of raw materials and commodities at the same time, inventories that were depleted during the pandemic; mining companies, shippers, shipping operations and port terminals were all functioning via mountains of operational hurdles during the shutdowns and the inventory level was not among the highest of priorities.

## RALLYING ROUND

The commodities rally has been one of the strongest in the last decade. For example, the price of copper moved from approximately \$2,300 per ton in early 2020 to almost \$4,900 per ton in late 2021. The price of coal skyrocketed from approximately \$50 per ton to more than \$300 per ton in the same period. The price of iron ore moved from below \$80 per ton to approximately \$225 per ton in the same period.



All in all, it had been an exceptional rally that probably allowed many traders to book huge profits in that period. Many an economist raised the prospect of inflationary concerns, but the general prevailing thinking has been about “transitory inflation”, the kind of price inflation that is not embedded in the economy and would have gone away once factories had a chance to replenish inventories.

Fast forward to the present, and by now, the discussion is about structural inflation that will force central banks to raise interest rates so high to cool the economies in order to curtail inflation. Add to the mix an active, unexpected and unpredictable warfront in the periphery of Europe that has turned energy markets upside down and now it's not only a discussion of high interest rates, but also a discussion about stalled industrial production and possibly a recession.

## PRICE COLLAPSE

With the exception of energy prices (namely for crude oil, natural gas and coal) that remain at eye-popping levels due to geo-political events, the price for base commodities has collapsed since the beginning of the year: copper presently trades at \$3,300 per ton (down 30% in six months) while iron ore now trades at \$100 per ton (down by more than 50% in six months). Precious metals, grains and other commodities have all exhibited similar pricing patterns, in a veritable sense that misery loves company.

The proverbial jury is still out on the direction of the US and global economies, and the seesawing stock markets are the most obvious way to see the market's “confusion”. Furthermore, an extremely strong US dollar does not help demand for commodities prices and there may be more pain ahead before the market finds its footing, but it would be hard to see that commodities prices will remain sustainably weak for long.

Taking a look at iron ore, the raw material for steel, it's hard to believe that the world can do without it for long.

“ An extremely strong US dollar does not help demand for commodities prices and there may be more pain ahead before the market finds its footing, but it would be hard to see that commodities prices will remain sustainably weak for long

For starters, despite China's setbacks dealing with covid-19 and bringing their industrial production back to 2019 levels, President Xi Jinping has been vouching for China meeting its economic goals set for 2022, darkened economic horizons notwithstanding.

## STRENGTHENING MARKET

Economics and growth statistics out of China have to be taken with a pinch of salt at the time, but as of July 2022, portside iron ore inventories in China stand at approximately 132m tons, the lowest level of inventories in the past ten months. Between the low inventories, a rekindling of Chinese production and also given that it takes more than a month to ship iron ore from Brazil to China, a strengthening of the iron ore market should be expected.

The chart shows historic freight costs for iron ore (in terms of US\$ per ton shipped by capesize vessel) from Dampier in Australia and Tubarao in Brazil to Qingdao in China; the freight differential is well established between the two routes (given the distance differential), and the capesize freight rally nicely coincided with the rally in the iron ore price, for both routes.

Capesize rates for iron ore have come down, too, in the last six months, but freight rates are picking up steam again. If this is a kind of leading indicator, iron ore prices should be expected to tick up, too.

*Basil M Karatzas is the Founder and CEO of Karatzas Marine Advisors & Co, a marine advisory and brokerage company based in New York. For more information please visit: karatzas.auction*

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# PUTTING PORT SAFETY FIRST

Holger Pfriem, business manager – Asia and Australasia, Dafo Vehicle Fire Protection, evaluates evolving port fire risks – especially as the industry continues to shift to take advantage of automation and electrification – and advises how port operators can act to minimise these risks



**T**he maritime industry is responsible for 90% of global trade, and the number of containers shipped every year is estimated at 200m. In today's modern world, demand at ports is only increasing. To keep pace and meet tight work schedules, 24/7 operation is needed for site vehicles and machinery, which is bringing increased fire safety risks.

Recent – and frequent – fires at bulk terminals across the globe are serving as imperative reminders for regulation changes as fires bring threat to life and operations. However, there's a need for clear, industry-specific legislation surrounding fire safety at bulk terminals.

While standard health and safety obligations (HSW Act (1974) and Management of Health and Safety at Work Regulations (1999)) apply, there's a need for new international regulations to reflect the current climate and evolving risks bulk terminals face.

The Health and Safety Executive's Approved Code of Practice, *Safety in Docks*, was brought about in 2014 to help the industry and those who have a duty to comply with the applicable regulations found in the HSW Act. Other regulations, such as the Department of Transport's Port Marine Safety Code (2016), act as a guide, but there is currently no industry-specific, legal regulations for the ports storing bulk materials to follow.

The International Maritime Organisation is currently undertaking a regulatory scoping exercise to address security, safety and environmental issues pertaining to automation and electrification of port vehicles. Although this is a step forward, an international framework governing industry changes is unlikely to be implemented soon due to the time needed to negotiate and draft it as well other formalities.

## EVOLVING RISKS

In addition to the already existing fire risks at bulk terminals, as areas store various flammable materials, ports worldwide are making the shift to autonomous and electric vehicles,

shifting manual operations to machine-led processes. While this shift can lead to optimised productivity and efficiency, it's also influencing the sector's fire risks.

## AUTOMATION

The pandemic escalated the port industry's adoption of automated vehicles, as it allowed operations to continue, with workers keeping a safe distance from one another. However, as less people are on site, or close to operating vehicles, with 24/7 operation, detecting fire risk is becoming more challenging.

Manual fire detection systems working in tandem with automated vehicles can cause delays in suppression agents being released, as they rely on the vehicle communicating a problem with the operator, and the operator reacting and releasing the suppression agent to remove the risk.



## ELECTRIFICATION

The move to more sustainable electric fuel sources at ports across the globe is an ongoing development. However, this is affecting onsite vehicles and machinery, as well as the number of lithium-ion (li-ion) batteries being carried through ports.

This development also brings about other fire risks, as li-ion batteries are extremely flammable. If overvoltage, overheating, overcharging or physical damage to a battery's cells leads to a malfunction, it can cause rapid temperature increases (thermal runaway) and potential fires, toxic emissions and even explosions. Recent fires across the industry highlight the reality of electric fire risks at ports.

## ENSURING SAFETY

The first stage in strengthening safety across the industry, amid evolving port risks, is conducting regular reviews of your site's risk assessments. This involves examining the associated risks of any vehicles or machinery and new processes introduced on the site, alongside evolving issues that can affect safety, such as materials handling delays.

For automation and electrification, there are other measures to consider to maximise safety and minimise operational downtime during a fire:

- » For electric vehicles and stores batteries, it's crucial to check that your chosen system is designed to identify thermal runaway at the earliest possible stage, so it can initiate spot cooling to quickly minimise risk in the event of an electric fire.
- » For autonomous vehicles, automatic detection and suppression is extremely important, as it ensures any fire risk is controlled safely and quickly before a fire takes hold. It's also important to ensure your system is a suitable match for the vehicle or machinery it's protecting to minimise false system activation.

## SITE AS A WHOLE

Effective fire safety requires you to consider your site as a whole to ensure that the overall measures you put in place are effective. Your site's fire suppression solution should be a suitable match for older risks associated with the protection of conventional combustion vehicles, as well as new and evolving risks.

Your site's suppression system is only the first step in increasing your site's safety. To ensure it's effective in an emergency, key personnel need to be trained in its safe use, so they know how to respond in the case of a fire. This will ensure their safety and the safety of your site as a whole.

**For more information on how you can best protect your bulk terminal against evolving fire risks, visit: [dafo-vehicle.com](http://dafo-vehicle.com)**

# CLASS ACTION

Classification societies are facing a number of challenges as the maritime industry prepares itself for increasing levels of regulations relating to the environment

**O**wners, operators and port facilities will have to ensure that they comply with the new rules and meet the deadlines put in place not only by organisations like the International Maritime Organization (IMO), but also government and country groups.

Meeting in London recently, the International Association of Classification Societies (IACS) Council, chaired by CEO of Lloyds Register Nick Brown, held its 85th session (C85).

The Council recognised the challenge of ensuring that ambitious targets with expedited timescales for decarbonisation are delivered safely and with the necessary technical underpinning to facilitate early investment by key stakeholders.

IACS panels represent the top tier of the Association's issue-specific bodies, so establishing a Safe-Decarbonisation Panel (SDP) sends a clear signal of IACS' determination to support industry through this multi-faceted, multi-decadal challenge. Giving decarbonisation the same focus as the traditional areas of safety, environment, hull, machinery, survey and cyber enhances the association's ability to address safe decarbonisation concerns and support the protection of human life, property and the marine environment.

To help deliver common technical requirements at speed, the SDP will immediately convene four project teams to work on leading decarbonisation fuels and technologies.

While IACS remains technologically

agnostic, extensive discussions with industry – itself a key feature and objective of the SDP – indicate that initial efforts should be focused on ammonia, hydrogen, carbon capture and storage and batteries. Additionally, the SDP will also evaluate current work streams at IMO on methyl/ethyl alcohols with a view to undertaking further work as appropriate. Other alternative fuels and technologies will be considered by the SDP subsequently.

Recognising that efforts to decarbonise need to be collaborative to be successful, the SDP has also adopted a structured consultative approach so that all stakeholders – fuel manufacturers, technology providers, owners, builders and marine insurance – have multiple and multi-layered opportunities to engage with IACS at strategic, operational and technical levels.

Such close cooperation will help focus prioritisation, maximise efficiency and remove duplication and allow for the resulting outputs to be properly targeted either in the form of IACS resolutions or recommendations or submissions to IMO to support the development of detailed regulations. Collectively, this work will help encourage industry to invest in new fuels/technologies by offering a degree of reassurance that standards are being harmonized and technologies are proven against these requirements.

Commenting on this development, Brown said: "IACS' establishment of a Safe Decarbonisation Panel allows

for an over-arching view on new initiatives, whether they be related to the propulsion of the vessels or to the changing nature of the cargoes ships will carry as a result of societal efforts to decarbonise, and so marks a step-change in embedding a safety-focus into this industry-wide effort."

The meeting also reviewed the suite of measures adopted by IACS to help the industry maintain business continuity in the face of the operational challenges posed by the covid-19 pandemic and noted the effectiveness of IACS' covid-19 task force in ensuring that ships were able to safely remain in service and in compliance with Class Rules and the requirements of the international Conventions. C85 agreed, however, that the improving covid situation now allowed for a phased withdrawal of the various exemptions, noting that operational challenges still exist in certain areas.

## IACS: EEXI

IACS has recently published guidelines on the implementation on the Energy Efficiency Existing Ship Index (EEXI)

The mandatory nature of International Maritime Organization's Energy Efficiency Existing Ship Index (EEXI) means it has a significant role to play in ensuring that the industry remains on track to meet greenhouse gas reduction targets.

IACS is fully supportive of IMO's initiatives on decarbonisation and has played an essential role in the development of EEXI by the IMO's Marine Environment Protection

Committee (MEPC) through the provision of technical comments and proposals across ten submissions relating to ship energy efficiency and carbon intensity (EEDI/EEXI/CII), four of which focus on EEXI.

In addition to its work at IMO, IACS Recommendation No. 172 (Rec.172) has been developed to support the global and consistent implementation of the newly developed EEXI IMO framework by providing additional advice and guidance on certain elements of the regulatory text where cross-industry discussions had identified technical implementation nuances associated with the EEXI framework.

Specific issues identified as needing further elaboration in Rec.172 include:

- the approval of the EEXI Technical File; non-overridable power limitation
- EEXI calculation methodology for LNG Carriers; ship type applicability
- appropriate Specific Fuel Consumption (SFC) values
- the uniform performing & validating of numerical calculations of the EEXI reference speed (Vref).

With the amendments to MARPOL Annex VI incorporating mandatory EEXI becoming effective on 1 November 2022 and taking effect at the shipboard level on 1 January 2023, it remains vitally important for IACS to provide and maintain clarity and to allow relevant stakeholders to benefit from a common approach among IACS members in the calculation of a ship's EEXI.

IACS secretary general Robert Ashdown says: "IACS is in a unique position to assist industry in complying with complex decarbonisation regulations by providing technical guidance that can help to maintain clarity while also enabling the practical and consistent application of this index on a global scale."

## IACS: CYBER SAFETY

Recognising that cyber incidents on vessels can have a direct and detrimental impact on life, property, and the environment, IACS has steadily increased its focus on the reliability and functional effectiveness

of onboard, safety-critical, computer-based systems.

IACS identified at an early stage that, for ships to be resilient against cyber incidents, all parts of the industry needed to be actively involved and so convened a Joint Working Group (JWG) on Cyber Systems, which helped identify best practices, appropriate existing standards in risk and cyber security, and a practical risk-based approach.

Building on this extensive collaboration and utilising the experience gained from its existing recommendations, as well as developments at the International Maritime Organization (IMO) including, in particular, IMO Resolution MSC.428(98) applicable to in-service vessels since the 1st of Jan 2021, IACS has adopted two new IACS Unified Requirements (URs) on the cyber resilience of ships:

UR E26 aims to ensure the secure integration of both operational technology and information technology equipment into the vessel's network during the design, construction, commissioning, and operational life of the ship. This UR targets the ship as a collective entity for cyber resilience and covers five key aspects: equipment identification, protection, attack detection, response, and recovery.

UR E27 aims to ensure system integrity is secured and hardened by third-party equipment suppliers. This UR provides requirements for cyber resilience of onboard systems and equipment and provides additional requirements relating to the interface between users and computer-based systems onboard, as well as product design and development requirements for new devices before their implementation onboard ships.

These URs will be applied to new ships contracted for construction on and after 1 January 2024, although the information contained therein may be applied in the interim as non-mandatory guidance.

IACS secretary general Robert Ashdown says: "These two URs on cyber safety provide minimum goal-based requirements for the cyber resilience of new ships and for the cyber security of onboard systems and equipment.

In an increasingly connected and digitised maritime world, these URs represent a significant milestone in IACS' work to deliver safer shipping in the face of continuously evolving technological developments."

## IACS: REMOTE SURVEYS

The significant impact of the covid-19 pandemic on the maritime industry resulted in an increase in the deployment of remote surveys by IACS members to ensure the maritime industry was able to continue functioning in as smooth and efficient a manner as possible.

Noting many IACS members introduced remote survey aspects prior to the pandemic, advancements in Information and Communication Technologies (ICT), together with the experience and knowledge gained during the pandemic, means that remote surveys will increasingly form part of IACS members' operations, given the many advantages that can be achieved in terms of practical delivery while ensuring the same quality and safety levels.

To ensure all IACS members have uniform guidance and requirements on remote surveys, it was considered essential to develop minimum common requirements for the implementation of remote surveys.

This IACS Unified Requirement UR Z29 has been developed to deliver the core objective that a remote survey will only be appropriate when the survey is carried out without compromising the quality and results of such survey, providing the same level of assurance as those performed by a surveyor attending onboard the vessel.

To achieve this fundamental goal, it was essential that IACS developed principles to ensure equivalency between remote survey and traditional survey by establishing a general definition, application scope, conditions and limitations of remote survey together with identification of requirements in terms of training of personnel.

IACS Unified Requirement on Remote Classification Surveys UR Z29 will enter into force on 1 January 2023.



SEASKILL SERVICE MANAGER TORSTEN SCHRÖDER AWARDED SEABLY'S CEO ANDREA LODOLO THE CERTIFICATION ON BEHALF OF DNV LAST WEEK (CREDIT: SEABLY)

## DNV: TRAINING PLATFORM

DNV has awarded the Swedish maritime training platform Seably a new DNV competence certification for its digital services.

The DNV SeaSkill standard ST-0595 is the first of its kind and addresses an emerging trend in the maritime training market: the emergence of training platform providers.

The standard's certification framework aims to ensure the quality of the training platforms, as well as their learning products and operation. It was developed in co-operation with Seably as a pilot customer.

Rapid digitalisation, a move to offer more learning experiences on board and two years of operating during a global pandemic have transformed the maritime training market. Greater digital portfolios and local providers seeking access to learners from around the world have led to the emergence of digital training platforms. They offer local providers the opportunity to elevate their courses beyond their regional market and gain access to customers worldwide.

Andrea Lodolo, CEO of Seably, says: "I am delighted that we have been able to work with DNV on the ST-0595 standard, which is open and will be available for any organisation in the maritime sector to achieve. It was of great importance to us that we pioneered this for the benefit of the whole sector, and not just the select few. There has been tremendous progress in technology and

learning skills, and Seably has been at the forefront, driving innovation through our unique marketplace. This standard recognises this progress while setting the bar to maintain the quality and robustness that seafarers rightly expect from their training and development. We look forward to seeing many more companies attain the standard in the future."

"Making learning experiences widely accessible to seafarers is a very positive development for an industry that is becoming increasingly demanding as it heads into a digitalized, decarbonized future," says Ulrich Bernhardt, head of competence and learning and SeaSkill™ at DNV. "However, while we welcome this trend, it is equally important to ensure that training platform providers have a robust management system in place which accounts for the challenges of their unique operational environment."

## DNV: COMPLIANCE PLANNER

DNV has updated its recently released Compliance Planner. The digital tool will now enable DNV customers to monitor their entire fleets and individual vessels against Flag State compliance requirements.

International shipping and offshore regulations are expanding in scope and complexity, increasing the burden on ship owners and operators. Designed to provide an overview of International Maritime Organization, International Labour Organization and European Union requirements, DNV's Compliance

Planner has now been updated to incorporate Flag State requirements, providing an enhanced overview for users.

Furthermore, the tool is continuously updated to reflect the latest decisions of regulators and includes several options for demonstrating compliance. Following considerable industry interest, the tool has also been expanded to cover MOUs.

## DNV: HYDROGEN FORECAST

Hydrogen has a crucial role in decarbonising the world's energy system, but uptake will be too slow. Governments need to make urgent, significant policy interventions, according to a new report by DNV.

In *Hydrogen Forecast to 2050*, DNV predicts the amount of hydrogen in the energy mix will be only 0.5% in 2030 and 5% in 2050. However, to meet the targets of the Paris Agreement, hydrogen uptake would need to triple to meet 15% of energy demand by mid-century.

"Hydrogen is essential to decarbonise sectors that cannot be electrified, like aviation, maritime, and high-heat manufacturing and should therefore be prioritized for these sectors," says Remi Eriksen, group president and CEO of DNV. "Policies do not match hydrogen's importance. They will also need to support the scaling of renewable energy generation and carbon capture and storage as crucial elements in producing low-carbon hydrogen."

According to *Hydrogen Forecast to 2050*, electricity-based green hydrogen – produced by splitting hydrogen from water using electrolyzers – will be the dominant form of production by the middle of the century, accounting for 72% of output. This will require a surplus of renewable energy, to power an electrolyser capacity of 3,100 gigawatts. This is more than twice the total installed generation capacity of solar and wind today.

Blue hydrogen – produced from natural gas with emissions captured – has a greater role to play in the shorter term (around 30% of total production in 2030), but its competitiveness will reduce as renewable energy capacity



DNV, KONGSBERG MARITIME, KONGSBERG SEATEX, BASTØ FOSEN AND NTNU ANNOUNCED THE LAUNCH OF THE NEW SAFE MARITIME AUTONOMOUS TECHNOLOGY (SAFEMATE) PROJECT, AT THE RECENT NOR-SHIPING TRADE FAIR  
 LEFT TO RIGHT: HENRIK FOSS, PRODUCT MANAGER, KONGSBERG SEATEX AS; BØRRE FLAGLIEN, DIRECTOR OF BRIDGE SYSTEMS AT KONGSBERG MARITIME; OTTAR OSEN, PROFESSOR AUTOMATION AT NTNU; PIERRE SAMES, GROUP RESEARCH AND DEVELOPMENT DIRECTOR AT DNV; JAN-EGIL WAGNILD, CTO AT TORGHATTEN AS (CREDIT: TORGHATTEN AS).



THE SAFEMATE PROJECT WILL PILOT AN AUTOMATED NAVIGATION DECISION SUPPORT SYSTEM ON THE BASTØ VI FERRY (BELOW)  
 (CREDIT: TORGHATTEN AS)



for heating of buildings will not scale globally, but will see early uptake in some regions that already have extensive gas infrastructure.

“Scaling hydrogen value chains will require managing safety risk and public acceptance, as well as employing policies to make hydrogen projects competitive and bankable. We need to plan at the level of energy systems, enabling societies to embrace the urgent decarbonisation opportunities presented by hydrogen,” adds Eriksen.

The uptake of hydrogen will differ significantly by region, heavily influenced by policy. Europe is the forerunner with hydrogen set to take 11% of the energy mix by 2050, as enabling policies both kickstart the scaling of hydrogen production and stimulate end-use. OECD Pacific (hydrogen 8% of energy mix in 2050) and North America (7%) regions also have strategies, targets, and funding pushing the supply-side, but have lower carbon-prices and less concrete targets and policies. Greater China (6%) follows on, recently providing more clarity on funding and hydrogen prospects towards 2035, coupled with an expanding national emissions trading scheme. These four regions will together consume two-thirds of global hydrogen demand for energy purposes by 2050.

**DNV: SEEMP GENERATOR**

DNV is set to launch its SEEMP III Generator, as part of an integrated and easy digital solution to support customers in ensuring their compliance with SEEMP Part III verification. The remaining SEEMP Part III guidelines were adopted and published in June this year, with the deadline for having the first SEEMP Part III verified and onboarded by 1 January 2023.

The SEEMP Part III forms part of the International Maritime Organization’s (IMO) initial strategy to reduce greenhouse gas (GHG) emissions from ships, including the ambition to reduce the carbon intensity as an average across international shipping by at least 40% by 2030, pursuing efforts towards 70% by 2050 compared to 2008. The requirement will require affected vessels to submit a three-year implementation

plan describing how it will achieve the required Carbon Intensity Indicator (CII). The IMO's CII will rate MARPOL ship types above 5,000 GT on a scale from A to E on how efficiently they transport goods or passengers with regards to CO<sub>2</sub> emitted. For vessels obtaining an inferior rating the SEEMP III report must be updated with a corrective action plan which must be verified before a Statement of Compliance (SoC) can be issued.

"With only six months to go to ensure compliance with the new MARPOL regulation and meet the SEEMP III verification deadline, ship owners need to take immediate action," says Sven Dudzus, head of GHG certification at DNV Maritime. "Through our considerable experience running DCS and Emissions Insights reporting for our customers, DNV is uniquely positioned to take the pressure off customers, giving them the peace of mind that they can achieve compliance in this relatively tight time frame."

The SEEMP Part III is intended to help companies achieve the required CII. It is a dynamic document subject to regular updates and revisions, reflecting the changing performance and required measures. To help customers tackle the impending SEEMP III challenge, DNV has developed two pathways.

### **BV: PILOT PROJECT**

Bureau Veritas and Laskaridis Shipping and METIS Cyberspace Technology, which provides ship environmental and operational performance smart tools, have agreed to embark on a pilot project to develop and apply a new BV SMART 3 Class notation covering the use of augmented data in ship operations.

Modern ships increasingly use smart systems designed to improve their operational efficiency. As part of its strategy to support maritime digitalisation, BV has developed a framework of SMART notations for ships, which provide consistent and uniform standards for the 'smart' techniques used to monitor and improve fleet performance.

In a new 'Smartship' pilot project, BV is working with Laskaridis Shipping and METIS to develop a range of additional

class notations adapted to the latest advances in digitalisation technology, with a focus on augmented ship. The SMART 3 notation will also cover ship to shore connectivity, remote decision support and remote operations.



BUREAU VERITAS, LASKARIDIS SHIPPING, AND METIS CYBERSPACE TECHNOLOGY ARE TO EMBARK ON A NEW PARTNERSHIP TO ADVANCE AUGMENTED SHIP SERVICES

### **BV: MACHINERY MAINTENANCE**

Bureau Veritas (BV) has launched a new digital tool – Machinery Maintenance – that connects directly to owners' Computer Machinery Maintenance System (CMMS) and helps them transition to optimised machinery maintenance schemes.

For ship operators to sail safely, their vessels must undergo regular inspections of their machinery equipment and systems. However, most modern ships have more than 300 separate pieces of machinery onboard, each with its own specific maintenance requirements. This poses a challenge to ship owners and operators on how to conduct machinery maintenance regularly, but also efficiently.

The new BV Machinery Maintenance platform connects ship operators' maintenance system with BV's system, thereby facilitating the elaboration of a Planned Maintenance Survey System (PMS) plan with online guided booking.

Laurent Hentges, vice president, digital solutions and transformation at Bureau Veritas Marine and Offshore, comments: "We know that efficient maintenance can have a major impact on vessel operations. As greater digitalisation and improved monitoring technology have become available, owners can now move to upgraded systems that further optimise maintenance planning, reliability and costs.

"As a classification society, we have a crucial role to play in helping ship owners transition to optimised machinery maintenance systems. We are very pleased to introduce this new tool to help them save time and money."

### **BV: POWER GENERATOR**

Bureau Veritas recently approved the second generation of the REXH2 developed by Energy Observer Developments (EODev), a turnkey power generator for the supply of low carbon electricity on board ships. The hydrogen PEM fuel cell at its heart makes it possible to meet energy needs ranging from 70kW to about one megawatt when several REXH2 are installed in parallel.

The Approval in Principle (AIP) obtained by EODev for its REXH2® fuel cell design follows a thorough design review against the latest classification rules and regulations, assessing its compliance with the IGF Code specific safety regulations for vessels using gases and low-flashpoint fuels. It also follows the recently released BV NR 547, applicable to the use of fuel cells onboard ships.

### **BV: NEW NOTATION**

Bureau Veritas has announced the development of a new notation, CII REALTIME. The notation will support shipowners to provide reliable and up-to-date data related to DCS and CII of their ships/fleet in a simplified and consistent process.

It is hard to overstate the scale and the urgency of the challenges that shipping now faces. Shipowners have less than a year to prepare their vessels to comply before the new EEXI and CII regulations come into effect, on 1st January 2023.

Monitoring the evolution of the CII during the year is essential to avoid any surprises with the ship's energy rating and to make early and informed decisions on operational measures. Danaos Management Consultants has developed digital solutions to efficiently manage such monitoring and to facilitate engine performance optimisation.

Bureau Veritas is teaming up with Danaos to develop the notation, which will recognise the implementation of a digital process that helps to collect DCS data and compute the CII data on a regular basis. The notation process will cover the data collection from ship as well as the ship-to-shore transfer data on to Bureau Veritas servers.

## BV: CYBER TOOLS

Marlink, the smart network group, and classification society Bureau Veritas, recently signed an agreement to accelerate the delivery of cyber-secure digital tools and safety services in the maritime industry.

The agreement links Marlink's smart hybrid connectivity with the remote digital and safety services provided by BV. Having identified crossovers in their mutual customer base, the partners will collaborate to help enable maritime stakeholders to more easily adopt cyber-strengthened digital tools and applications using the Marlink network.

The partners have put in place a working group to support shipowners around improving the cyber-security of vessel data collection and facilitating compliance with regulation. This will support remote and digital operation modes on a journey to smarter, remote and, ultimately, autonomous ships with zero-emission.

"This is a partnership with real purpose whose foremost point is to take action to integrate digital tools and services that can bring value for shipowners and encourage and further develop cyber-secure, innovative Class operations," says Matthieu de Tugny, president, Bureau Veritas, Marine & Offshore.

"Shipowners face huge efficiency and compliance challenges over the next decade and these need to be considered now to create a future-proof path that can integrate core operational components onboard and ashore," says Tore Morten Olsen, president of maritime at Marlink.

"Digitalisation is critical to improving voyage optimisation and vessel performance, achieving regulatory compliance and meeting environmental,

social and governance goals, but shipowners shouldn't have to act as project managers – this partnership means they can streamline and simplify their digital journey based on Class guidelines and recommendations."

## BV: FUEL CELLS

Bureau Veritas has released a new rule note (NR 547) on fuel cell power systems on board ships. The rule note covers safety requirements for ships using any type of fuel cell technology, providing rules for the arrangement and installation of fuel cell power systems and the delivery of electrical energy.

Over the past few years, fuel cells have proved to have strong potential to help decarbonise the maritime industry. The technology, which is based on an electrochemical reaction like that in batteries, can run continuously without recharging as long as energy is provided.

Fuel cells can bring significant environmental benefits, eliminating NO<sub>x</sub>, SO<sub>x</sub> and particle emissions while reducing CO<sub>2</sub> emissions compared with diesel engines. However, this technology comes with a number of challenges that must be addressed to ensure safety.

Bureau Veritas' NR 547 outlines requirements on the design, construction and installation of fuel cells systems to ensure that the safety of the ship is maintained. The aim is to identify and mitigate risks to persons on board, the environment and the structural integrity of vessels. Fuel cell systems and ship design must limit the risk of explosions, the spread of toxic chemicals and fire outbreaks.

Laurent Leblanc, senior vice president technical and operations at Bureau Veritas Marine & Offshore, comments: "Our new rule responds to the latest advances in fuel cell technology, and incorporates information from the most recent industry-wide collaborations.

"For shipowners and operators taking the fuel cell route to sustainability, NR 547 lays the groundwork for operating safe, sustainable, and high-performance vessels.

## KR: AUTONOMOUS NAVIGATION

Korean Register (KR) has signed a Memorandum of Understanding (MOU) with KLCSM and Samsung Heavy Industries (SHI) to jointly research and approve the application of autonomous navigation systems for mid- to large-sized vessels.

The agreement will accelerate the commercialisation and international competitiveness of domestic autonomous ship equipment and technology by establishing an actual ship-based autonomous operating system that is jointly developed between domestic shipping companies, shipyards and KR.

The announcement comes as an increasing number of shipowners integrate artificial intelligence (AI), Internet of Things, Big Data and sensor systems into their vessels in order to assist vessel crews.

In addition to this MOU, KR has been building up its related classification certification performance and autonomous navigation ship technology by applying its rules, cyber-security certification and risk-based approval in accordance with its *Guidance for Autonomous Ships*, which was published in 2019.

## KR: NEW CENTRE

The Korean Register held an inauguration ceremony for its new Integrated Survey Centre (ISC) at the company's headquarters in Busan, Korea, in April.

KR-ISC is an in-house developed digital platform that interactively exchanges data directly between shipping companies and KR to monitor its registered ships around the world at a glance, and to provide more systematic and integrated survey service.

During an emergency, KR-ISC can provide immediate technical support to customers for making key decisions by identifying the ship's condition in real time using images and data sent from the vessel.

In addition, information on port state control inspection trends, detention cases, and deficiencies of individual ships can also be provided through



LEE HYUNGCHUL, KR CHAIRMAN AND CEO (FIFTH FROM RIGHT), JEONG TAESEONG, MINISTRY OF OCEANS AND FISHERIES DIRECTOR (SIXTH FROM RIGHT), PARK CHANMIN, KLCSM CEO (FOURTH FROM RIGHT), AND DISTINGUISHED GUESTS TAKE A COMMEMORATIVE PHOTO AT THE INAUGURATION CEREMONY FOR KR-ISC



KR SURVEYORS HAVE A TECHNICAL MEETING AT KR-ISC



EXPLAINING THE MAJOR FUNCTIONS OF KR-ISC

KR-ISC, contributing to the smooth entry and departure of vessels by supporting real-time PSC responses when needed.

“KR-ISC is the result of KR’s considerable efforts to build a digitalised survey system as a key element of the society’s progress towards becoming an advanced digital classification society,” said Lee Hyungchul, KR chairman and CEO, during the inauguration ceremony.

“The KR-ISC will provide a higher level of survey capability using advanced technology ensuring our clients can continue to operate their ships safely and efficiently.”

## KR: CARBON LENS

KR has recently awarded Singapore-based Marine Technology Solution Pte Ltd a Type Approval certificate for their direct and continuous CO<sub>2</sub> emission measurement system called Carbon Lens.

The Type Approval certificate, which was awarded based on the International Maritime Organization’s NOx Technical Code and Guidelines from KR, is the first of its kind to be awarded to a manufacturer.

Carbon Lens continuously analyses and records the flow of emitted CO<sub>2</sub> from each stack of a vessel, taking into account its temperature and exhaust pressure. This data is then live-streamed from the vessel to designated recipients ashore.

By utilising this system, recorded and reported data will be more immediately available and more accurate, offering a significant improvement on the current “best-guess techniques” employed by many emission reporting companies at the moment.

Being able to accurately measure and report CO<sub>2</sub> emission levels from vessels is increasingly important to ship owners, managers and charterers, as they will be required to provide detailed emission reports to regulators.

Accurate data will also help the relevant parties to better estimate their carbon offset requirements when executing carbon trading strategies.

## KR: STORAGE TANKS

Korean Register (KR) has published comprehensive guidelines on the metal materials suitable for use in eco-friendly fuel storage tanks, such as those used for storing liquefied natural gas, ammonia, methanol and hydrogen.

The newly published *Guidelines for Selection of Metallic Materials of Containment Systems for Alternative Fuels for Ship* includes detailed technical information on all the metal materials suitable for such containment systems. It has been jointly developed by KR's R&D division and KIM Yongjin's research team of the Korea Institute of Machinery and Materials.

"KR conducts world-class research and development to benefit and support the wider maritime industry, regularly sharing its latest technological information," says KIM Daeheon, Executive Vice President of KR R&D division. "These timely guidelines will be welcomed by universities, research institutes, shipowners and clients, indeed anyone who is working to develop eco-friendly vessels."

KR has proposed suitable metal materials that can be used for containment systems (storage tanks) and for the supporting structures taking into account the characteristics of the various eco-friendly alternative fuels. Applicability evaluation methods and procedures are also included in the document.

The guidelines examine the various restrictions and technical limitations

affecting metal materials used to contain liquid hydrogen, which is technically the most difficult to store in large capacities and currently hardly used for vessels as the gaseous hydrogen causes damage to materials.

## LR: ROTOR SAILS

Lloyd's Register (LR) has granted Approval in Principle for a SDARI (Shanghai Merchant Ship Design and Research Institute) designed 210,000 DWT Newcastlemax bulk carrier installed with Anemoi rotor sails to significantly improve efficiency and reduce environmental impact.

The Newcastlemax AIP is part of a pioneering joint development project (JDP), signed in 2020, with Anemoi Marine Technologies, Lloyd's Register, and SDARI and brings together the OEM, classification society, ship designer, and ship owner to develop a series of energy-efficient vessel designs equipped with Rotor Sails. Oldendorff Carriers is the shipowner partner for this Newcastlemax design

Director of innovation Torsten Barenthin of Oldendorff Carriers comments: "This has been an important project as part of Oldendorff Carriers' commitment towards Getting to Zero. The results have demonstrated the impressive impact Rotor Sails have on regulatory obligations, which is a key consideration, in addition to the emission reduction benefits. We will continue our assessment of Anemoi's

technology for our fleet."

The AIP covers the structural integration for a ship design with six 5x30m rotor sails and Anemoi's rail deployment system, which sees the rotor sails move transversely across the deck to avoid inference with cargo handling; and the structural integration for a ship design with four of Anemoi's folding (tilting) 5x35m rotor sails.

LR has assessed the calculation used to estimate the impact the rotor Sails will have on the Energy Efficiency Design Index (EEDI) and validated that the newbuild Newcastlemax would have its EEDI score reduced from 1.92 to 1.37 (29% reduction) by installing six 5x30m rail rotor sails and 1.47 (23% reduction) by installing four 5x35m folding rotor sails.

Nick Contopoulos, Anemoi's Chief Operating Officer, says: "We're very pleased with the outcome for the first vessel included in the JDP. EEDI is a significant driver for the installation of rotor sail technology and, as we grow closer to the implementation of EEXI and CII, they too become important incentives for Rotor Sails, along with the overarching reductions in fuel consumption and associated emissions.

"To have the impact pre-validated by LR is a key step in continuing to prove the importance of our technology in the context of the decarbonisation of shipping. Both design configurations (folding and rail) of rotor sails for a Newcastlemax vessel are available to order now."



LLOYD'S REGISTER (LR) HAS GRANTED AN AIP FOR A SDARI -DESIGNED 210,000 DWT NEWCASTLEMAX BULK CARRIER INSTALLED WITH ANEMOI ROTOR SAILS

# MASTER PLANS

The South African government recently published the National Infrastructure Plan to 2050, which includes a number of initiatives affecting the ports sector



**T**he first phase of South Africa's National Infrastructure Plan to 2050 focuses on four sectors including energy, water, digital infrastructure and freight transport, outlining the government's short- to medium-term plans to strengthen these sectors and boost their contribution to the economy as a whole, according to South African law firm Bowmans.

Bowmans says a particular emphasis is given to rail and port infrastructure, including moving more freight from road to rail using Transnet Freight Rail to encourage third party operators into the mix.

Another plan is to establish an independent National Ports Authority during the course of the next year and this will include putting an end to cross subsidies between rail and port operations to ensure that port fees are ring-fenced to benefit the ports' sector. Logistics' corridors in South Africa are to be strengthened to support and facilitate the movement of freight, particularly between Durban and Gauteng and between Saldanha Bay and the Northern Cape.

Other plans include the promotion of regional shipping and ensuring seaports are integrated with regional multimodal

transport networks, particularly between Durban and Dar es Salaam.

In addition, the establishment of six one-stop border posts by 2025 is planned, reducing delays and associated cross-border transport costs. A port master plan and policies covering rail and road funding are to be finalised with a single Transport Economic Regulator, to be established by 2022/23 for road, rail, sea and air transport. Funding for the initiatives is expected to come from public-private partnership and project finance, according to Bowmans.

“Efficient, cost-effective logistics corridors linking South Africa’s commercial ports to multimodal transport hubs throughout the hinterland will benefit South Africa, her nearest neighbours and the rest of Africa,” says Bowmans.

“The path to achieving this ideal may not run smoothly and will require effective oversight, but the NIP 2050 represents, at least, another step forward in aligning South Africa’s logistical infrastructure with modern global needs and standards.”

## PRIVATISATION BATTLE

City of Cape Town mayoral committee member James Vos has thrown his hat in the ring for the battle to ensure the privatisation of the Port of Cape Town.

This follows a call to national government by Western Cape minister of finance and economic opportunities, David Maynier, to provide answers as to why there have been no announcements about private partners for the port.

“At the end of the day, when the port works, our economy works in the Western Cape. Key to unlocking the potential of the Port of Cape Town is making sure critical infrastructure is maintained and that there is investment in new infrastructure,” says Maynier.

“I fully support the renewed calls by my provincial counterpart [Maynier], for more movement towards privatising the Transnet-owned Cape Town Port,” says Vos.

“The need to privatise is clear. The inefficiencies restrain the metro and province’s economic and employment

growth, and come at a time when we desperately need to be bolstering both.”

Vos continues: “The challenges of the port are complex. However, in partnership with the private sector, I hold the view that these can be overcome and help the Port of Cape Town become the go-to hub for international trade.”

## TPNA SPENDING SPREE

Transnet National Ports Authority (TPNA) has committed to a R9.1bn infrastructure investment for its Central Region ports.

During recent meetings in Nelson Mandela Bay and East London, TNPA announced details of plans to make R9.1bn of infrastructure development investment over a seven-year period in its Central Region – the ports of East London, Port Elizabeth and Ngqura.

The TNPA Central Region capital investment programme is underpinned by the Transnet Segment Strategy that aims to realign the Transnet business with strategic sectors of the South African economy. The strategy focuses on Private Public Partnerships as a key lever for capacity and productivity enhancement.

In alignment with the Transnet Segment Strategy and the TNPA Reimagined Operating Model, the Central Region ports are being positioned in accordance with critical sectors within the Eastern Cape province ranging from the automotive; liquid bulk; agriculture and tourism sectors.

“We have earmarked the Port of Port Elizabeth for the automotive sector, with the port of Ngqura being positioned as a transshipment and energy hub for the southern hemisphere,” says TNPA managing executive for the Central Region, Siyabulela Mhlaluka.

He adds that the river port of East London is the planned site for servicing the broader automotive, industrial and agricultural sectors in the region by enhancing the port’s capability and complementing the East London Industrial Development Zone.

The Port of East London’s grain elevator is a key asset to the province, and this has been emphasised by the diversion of some of the agricultural cargo from Durban to the East London

port. According to Mhlaluka, East London is also strategically positioned for the tourism sector, a strategic objective that will be achieved by transforming the port’s real estate portfolio to integrate with the leisure market, such as the Latimer’s Landing Waterfront development.

The seven-year, R9.1bn capital investment programme for the Central Region ports comprise of a budget allocation of R4.8bn for the Nelson Mandela Ports (Port Elizabeth Ngqura) and R4.3bn for East London. In the 2022/23 financial year, the plan is for the Central Region ports to spend R570m in port infrastructure development.

Strategic projects for this year include the relocation of the tank farm from Port Elizabeth to Ngqura; phase 1 of the Ngqura Manganese Export Terminal development; conducting a feasibility study for the reconstruction of East London’s Quay 3 and the construction of a slipway at the Port of Port Elizabeth.

Plans are also underway for strategic special projects across the port system. Projects planned for the eight commercial ports included the issuing of a request for information in July 2022 for the supply of renewable energy for all the ports, followed by a request for proposals in September this year.

In response to the water crisis faced by the residents of Gqeberha and with an intention of being proactive, in July 2022 TNPA issued a call for information for the supply of desalinated water for all its ports to be followed by a call for proposals in October this year.

TNPA’s capital investment programme and plan demonstrates a renewed focus on ensuring delivery on its mandate to develop the South African ports and become an enabler for economic growth. “We are continuously creating an enabling and performance-driven environment that unlocks bottlenecks and accelerates the execution of strategic projects through the establishment of regional and national capital investment war rooms, where project sponsor engagement is relevant and influential in enabling the project team. This approach will

ensure that TNPA delivers on its capital investment commitments in the region," says Mhlaluka.

TNPA has also been working concluding the validation process for its Eastern Region Ports Master Plans, which will position the Port of Durban as a container hub and Richards Bay to handle dry bulk. The technical validation has been conducted by independent international consultants for the purposes of confirming the technical feasibility of the plans in relation to proposed capacity and spatial layout.

This process is part of plans by TPNA seek to align its freight logistic business with key commodities of the South African economy. The Durban Logistics Hub reconfigures the port master plans of Durban and Richards Bay to increase their capacity of handling the container, automotive and liquid bulk commodities.

The TNPA Reimagined Operating Model segments TNPA's port operations into three regions - the ports of Port Elizabeth, Ngqura and East London in the Central Region; Mossel Bay, Saldanha and Cape Town in the Western Region with Durban and Richards Bay in the Eastern Region.

"At the centre of everything we do, we ensure that we run functioning ports that are responsive to the

issues of terminal operators whilst encouraging them to perform better through the provision of world class port infrastructure," says Moshe Motlohi, TNPA managing executive for the eastern region.

The Durban Logistics Hub will boast increased container capacity of 11.4m TEUs and automotive capacity exceeding 900 000 units. New container terminals will be built in the Point and Maydon Wharf port precincts with new capacity of 1.8m and 1.6m TEUs respectively.

In addition is the execution of the Salisbury Infill at Pier 1 Container Terminal that will expand terminal capacity to 3.6m TEUs coupled with the Berth Deepening project in Pier 2 Container Terminal that will enhance terminal capacity to 4.4m TEUs.

"The relocation of the South African National Defence Force (SANDF) naval base to the Port of Richards Bay will be a major catalyst to the success of the Salisbury Infill work package, with a satellite station remaining to maintain SANDF's presence at the Port of Durban," says Bridgette Gasas-Toboti, TNPA portfolio director for mega projects.

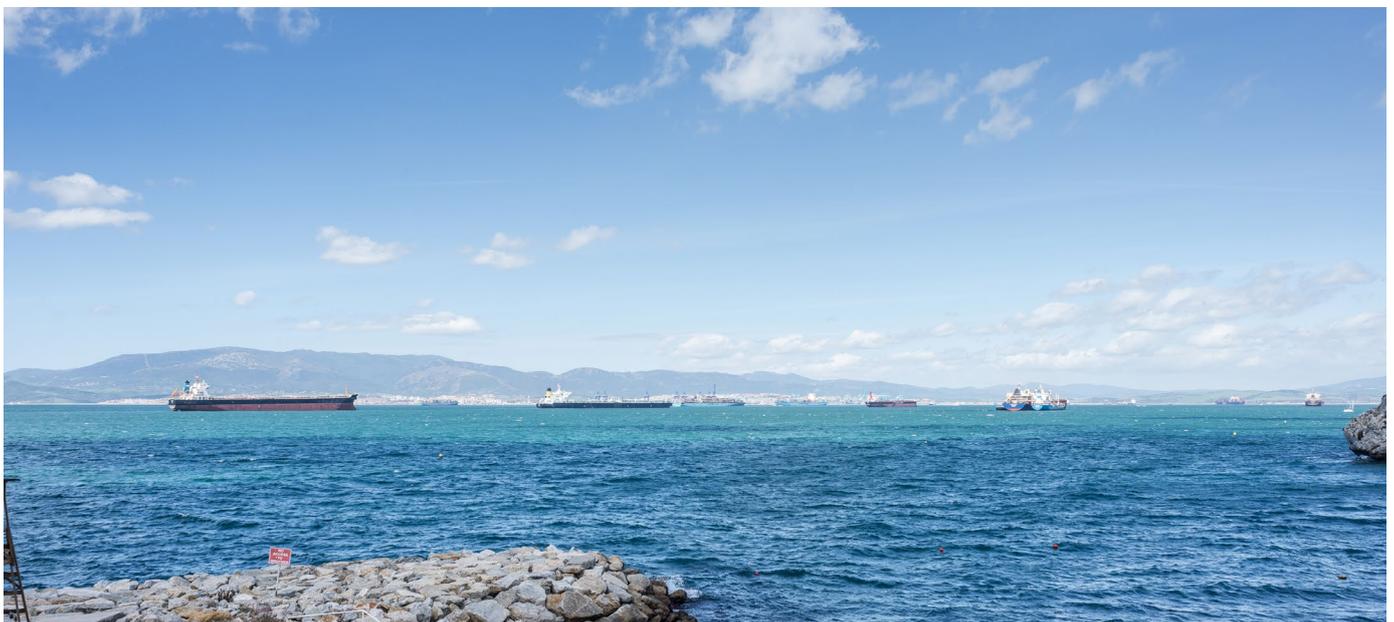
Aligned to the Department of Mineral Resources and Energy's strategic plan for 2020-2025, the Port of Richards Bay port master plan features a new

berth for handling liquified natural gas, which is a cleaner alternative to coal for power generation.

Some of the dry bulk terminals and mineral-handling facilities are also earmarked for relocation from the Port of Durban's Island View and Maydon Wharf Precincts to the Port of Richards Bay. "These expansion plans are also geared towards reducing logistics costs associated with servicing our port system," says Gasas-Toboti.

A capital investment programme for the East Region ports is part of TNPA's commitment to its core mandate of providing world-class port infrastructure, according to the National Ports Act 12 of 2005. Over the next seven years, TNPA plans to discharge more than 50% of its capital investment budget in its Eastern Region ports with a projected spend of R33.6bn against a national budget of R64.5bn.

In the current financial year, approximately R460m will be invested in the Eastern Region's port infrastructure development with an allocation of R284m to Richards Bay and R176m to Durban. Some of the capital projects planned for 2022/23 is the construction of the rail facility at the South Dunes in Richards Bay, two helicopters for the two Eastern Region ports and the expansion of the Durban tug jetty.



# MAINTAINING MOMENTUM

Indian ports are aiming to boost their ability to handle cargo as importers and exporters expect an increase in traffic in the next year

**S**enior officials at ports such as Chennai, Jawaharlal Nehru Port Trust (JNPT) and Cochin are reported to be looking to improve cargo handling capacity to take advantage of a surge in port activity.

Kolkata Port chairman Vinit Kumar was among those who have said they are speeding up projects to increase capacity and modernise infrastructure in order to take advantage of a surge in import and export demand over the coming months.

Kolkata port has said that as a means of boosting throughput, it plans to start night navigation between Sagar and Kolkata, which would save time navigating the stretch of water between the two as well as increase cargo handling at the port.

JNPT is one of the other ports making modernisation plans, which increase railway capacity at the port in order to move goods more quickly.

Port plans afoot include a multi-purpose cargo terminal on the Uran mudflats, terminals in Nhava Creek, the second phase of the additional liquid bulk terminal and setting up a fifth container terminal at Panvel Creek. All of these will be developed using the public private partnership model.

In Tamil Nadu, Chennai Port is working with the National Highways Authority of India to speed up the construction of an 8km bridge between Chennai Port and Manali Road-Thiruvottiyur Junction, an official from the port authority says.

On the west coast, Mundra Port, run by Adani Ports and Special Economic Zone (APSEZ), is also preparing to increase cargo handling capacity in this fiscal year. Adani Ports and Special Economic Zone (APSEZ), the largest transport utility in India, announced its results for the fourth quarter and year ended 31 March 2022, in May.

"FY22 has been a stellar year for APSEZ, with the achievement of various milestones for itself and new benchmarks for India's maritime industry" says Karan Adani, chief executive officer of APSEZ. The company recorded cargo volume of 312m tonnes, with Mundra port alone handling 150m tonnes.

APSEZ has obtained environment and coastal regulation zone clearances to raise the capacity at Mundra Port to 385m tonnes from 300m and is looking to complete two projects to extend its eastern and western breakwater by 500 metres each during the year, an

official from APSEZ said recently. It is also looking to expand the railway capacity at the port to improve traffic movement.

The recent disruption at Sri Lanka's Colombo Port is expected to help Indian ports report increased volumes in 2022-23 after the Indian shipping industry suffered due to the covid-induced supply chain disruption over the past two years.

## RUSSIAN DEBATE

The Indian Register of Shipping recently issued a statement relating to media reports linking it with Russian shipping concerns in the light of the Ukrainian situation.

In a statement, the classification society said: "Indian Register of Shipping (IRS) notes media reports linking it with Russian shipping entities. Our primary function as a classification society is to ensure the highest level of safety on board every vessel that is classed with us. We shall never neglect that responsibility.

"In relation to the recent media reports, IRS can report it has been asked to provide safety-related classification and survey services to a number of vessels by Dubai-based entities. These vessels are registered by leading flag

administrations Liberia and Cyprus. We can confirm that none of the vessels referred to fly the Russian flag.

"We also understand that each of these vessels is owned by entities that are registered in the above-mentioned flag states, as is the long-standing and customary practise in international shipping. The vessels are operated by various entities in Dubai and in other parts of the world. None of the companies that own the ships are registered in Russia.

"IRS further notes the words - as reported - from the International Association of Classification Societies (IACS): 'IACS is not involved in the operational and commercial activities of its members, including appraisal, approval surveying and testing of vessels and equipment and the issuing of classification and statutory certificates where authorised. As such, these developments do not get discussed within the association.'

"We reiterate the safety of merchant vessels is our number one priority, and that IRS intends to abide by international law including the observance of applicable international sanctions."

## SIGNING UP FOR SERVICES

Indian Register of Shipping (IRS) and Garden Reach Shipbuilders and Engineers (GRSE) have signed a Memorandum of Understanding (MOU).

As per the MOU, IRS will provide a comprehensive range of services to

GRSE comprising planning of repairs and refits and modification work of ships, provision of quality assurance services during execution thereof, facilitating skill augmentation of GRSE personnel, and the undertaking of technical studies and analysis over a large range of subjects.

For repair and refit and modification work, IRS will prepare the detailed scope of work to be undertaken, inclusive of a detailed defect list based on assessment of material state through survey and inspection, undertake inspection and witness tests and trials of required new components or equipment, as applicable, and witness running trials of onboard machinery, on completion of work.

IRS will undertake various technical studies and analysis - such as finite element analysis, computational fluid dynamics, fatigue life assessment, noise and vibration analysis and signature prediction, as required by GRSE.

Arun Sharma, executive chairman at IRS, says: "IRS is now recognised globally for industry excellence. We are proud to offer high-quality inspection and training services to our valued partner GRSE."

Cmde PR Hari adds: "As India aims to strengthen its position as a leading shipbuilding nation, pursuit of excellence through high-quality products remains an integral part of GRSE's value system and this MOU would further strengthen our efforts in that direction."

## EXPRESS DELIVERY

APM Terminals Pipavav, one of the leading gateway ports in Western India, has secured a new service, Jade Express, mainly for transshipment cargoes. The weekly service, introduced by Maersk, will connect Port Pipavav to Port Qasim. Jade Express connects Pipavav perfectly in time for the MECL service (west bound for North America) and provides same day connectivity on the F13 service (for the far east).

The first vessel, *IRENES RAY -215S*, berthed at Pipavav in March bringing in enhanced connectivity to customers from Rajasthan, Gujarat, New Delhi and Punjab.

Jakob Friis Sørensen, managing director of APM Terminals Pipavav, says: "We strive hard to provide the best connectivity and services to our customers to ensure their supply chain moves smoothly. Through the Jade Express service, we are delighted to provide an additional mode to our customers to connect their containers to global markets swiftly and safely."

Vikash Agarwal, managing director for Maersk South Asia, comments: "Our constant endeavour to create customer-centric solutions has led us to connect the Jade Express to APM Terminals Pipavav on its rotation between Far East Asia and the Indian subcontinent & Pakistan. APM Terminals Pipavav has always proved to provide top-notch service levels. With the Jade Express, we expect to extend those service levels further to our customers in the northern and western parts of India."

APM Terminals Pipavav is one of India's leading gateway port for containers, dry bulk cargoes, liquid bulk and RoRo (passenger cars) serving customers in the state of Gujarat with road and rail networks to India's northwest hinterland.

The current annual cargo handling capacity includes 1.35m TEU of containers, 4m tonnes of dry bulk, 2m tonnes of liquid bulk and 250,000 passenger cars.

APM Terminals Pipavav is India's first public private partnership (PPP) port and the first port to be connected to the DFC in India; is a part of the APM Terminals global terminal network.



## DP WORLD PARTNERSHIP

DP World and India's National Investment and Infrastructure Fund (NIIIF) have announced the broadening of their existing partnership, with NIIIF Master Fund investing primary capital of INR22.5bn (approximately US\$300m) for a shareholding of approximately 22.5% in Hindustan Ports Private Limited (HPPL), the wholly owned subsidiary of DP World.

With this transaction, which is also the Master Fund's single largest investment, NIIIF's investment under this partnership will reach around US\$500m.

This investment from NIIIF Master Fund extends the existing DP World and NIIIF partnership, formed through the creation of Hindustan Infralog Private Limited (HIPL) in 2018.

Since its inception, HIPL has made substantial investments in rail logistics, multi-modal logistics parks, container freight stations, economic zones, cold chain infrastructure and contract

logistics to create a market leading integrated logistics platform.

As the value chain becomes more integrated, significant growth opportunities exist across the entire Indian ports and logistics segment, the companies say. The primary capital raised through this transaction will aid in new infrastructure development, drive supply chain efficiencies and support future growth initiatives of HPPL.

The investment in this combined entity will improve cargo connectivity which will deliver cost efficiencies and an enhanced customer experience.

Sultan Ahmed Bin Sulayem, group chairman and chief executive of DP World, says: "The broadening of our partnership with NIIIF to include our flagship India ports platform is a natural extension of our existing relationship and aligns both parties to focus on delivering end-to-end supply chain solutions.

"Since the beginning of this partnership with NIIIF, we have made

significant progress in building an inland logistics infrastructure network of great scale that complements our container ports platform. Notably, the opportunity landscape in India remains significant and this transaction will allow us to accelerate investment across ports and logistics to drive returns for our respective stakeholders."

Sujoy Bose, managing director and chief executive, National Investment and Infrastructure Fund Limited, says: "The deepening of our successful four-year partnership with DP World is a testament to the attractive opportunities in the Indian ports and logistics sector and the strategic vision and ongoing reforms under the PM Gati Shakti programme.

"The investment will enable NIIIF's domestic and international investors to have a meaningful exposure in the sector through a unique and scalable platform with a significant presence across sea-based container terminals and land-based container logistics infrastructure."



# GREENER AND CLEANER

Scandinavian countries continue to spearhead the move towards environmentally friendly approaches to port development and the use of cleaner fuels

**A**s countries continue to tackle the logistics of moving to the use and provision of greener forms of energy and propulsion products, Gothenburg Port Authority has published general methanol operating regulations for ship-to-ship bunkering in April.

By 2030, the Port of Gothenburg has set out the ambitious target to reduce shipping emissions by 70% within the port area. One key step to reach this goal is to provide a variety of shipping fuels that contribute to bring down emissions – in the port as well as on a global scale.

Many initiatives are taken around the world with net-zero vessels now in the order books.

“From the Port of Gothenburg, we want to support this by enabling these vessels to take bunker at their convenience. Therefore, we are happy to say that we have received acceptance from the Swedish Transport Agency for the general methanol operating regulations for ship-to-ship bunkering. This work has been finalised after great support from Saeed Mohebbi from the Swedish Transport Agency. His knowledge and support has been very

valuable,” says Christoffer Lillhage, senior business development manager energy at the Gothenburg Port Authority.

As this is a general approval for the port, each terminal will do a complementary risk assessment, but this is more of a formality when the general guidelines now are in place. For example, the Port of Gothenburg has already handled methanol in the port since 2015 when Stena Line started to bunker *Stena Germanica* truck to vessel.

“Now we hope to see Maersk, X-press Feeders and many other shipping lines routing their new methanol vessels to the North of Europe and we would be delighted to welcome them with open arms to the largest port in Scandinavia,” says Elvir Dzanic, CEO at Gothenburg Port Authority.

X-Press Feeders is the world’s largest independent feeder carrier, and one of the major players dedicated to introducing methanol as a shipping fuel on a larger scale already in 2023. With the introduction of eight state-of-the-art 1,170 TEU container ships capable of being operated on carbon neutral methanol, X-Press Feeders is soon one step closer to reaching its target of having net-zero emissions from operations by 2050.

THE PORT OF GOTHENBURG IS AIMING TO BECOME THE PRIMARY BUNKERING HUB FOR RENEWABLE METHANOL IN NORTHERN EUROPE (CREDIT: GOTHENBURG PORT AUTHORITY)



"I am happy to see that Port of Gothenburg is working proactively to facilitate the bunkering of methanol. It is encouraging as we need the ports to be ready when we are to decide where to route our first line of methanol propelled vessels," says Sven Siemsen senior manager marketing Europe at X-Press Feeders.

The shipping industry needs a variety of fuels in the future, and renewable products such as eMethanol is one important fuel to reach net-zero targets. Therefore, the Port of Gothenburg is also making arrangements to setup a value chain with the determination to provide eMethanol in the port by 2024.

"Together with industry front runners in the field of e-fuels such as Liquid Wind and its partner Ørsted, we are working to make this a reality. We are also planning for large-scale storage of methanol with storage operators in the port when the demand is in place. We encourage methanol producers and stakeholders in the industry to reach out and start a dialogue with the Port of Gothenburg as we have set the aim to become a bunker and storage hub for methanol/eMethanol," says Lillhage.

"We are pleased to see that ship-to-ship methanol bunkering and infrastructure will become a reality in the port. This is a strong benefit for carriers planning to buy our green electrofuel, eMethanol. It enables Liquid Wind and our value chain collaborators to establish multiple production facilities in Sweden and other Nordic countries. A strong and leading eMethanol hub in Gothenburg accelerates our ability to market and distribute our carbon-neutral marine fuel to the world. It also puts Sweden on the global fuel export market," says Claes Fredriksson, CEO and founder of Liquid Wind.

## WIND POWER BOOST

Nefco, the Nordic Green Bank, has signed a loan agreement with Norsepower, a Finnish clean-tech company. As a world-leading provider of auxiliary wind propulsion systems, Norsepower's Rotor Sail technology provides efficient, easy-to-use and reliable auxiliary wind propulsion for the shipping industry, with installations already onboard

tankers, bulkers, ro-ro ships and ferries. The technology has a proven average fuel savings record of 5-25%.

"Our mission is to reduce the environmental impact of shipping through the commercialisation of innovative and modern sail power," says Tuomas Riski, CEO and partner at Norsepower. "With the International Maritime Organization's Energy Efficiency Existing Ship Index and Carbon Intensity Indicator coming into effect at the start of 2023, Rotor Sails can help shipowners improve their ratings against these criteria to help future-proof their fleet.

"With Nefco financing, we will be able to invest in our production capabilities in Asia so that we are well-positioned to meet rising demand for our Rotor Sail technology."

Financing from Nefco will be channelled to investments in the Norsepower production hub in China. Over recent years, Norsepower has established two fully-owned subsidiaries in Hong Kong and Yancheng to respond to the growing demand in Asia. The new financing is a continuation of cooperation with Nefco. The Yancheng subsidiary started with a feasibility study co-financed by Nopef, the Nordic Project Fund, which is a financial instrument managed by Nefco that supports international growth of Nordic SMEs.

With a technology based on the Magnus effect, the patented Norsepower Rotor Sails allow the main engines to be throttled back, saving fuel and reducing emissions while providing the power needed to maintain speed and voyage time.

On the environmental side, the Norsepower Rotor Sails contribute to the reduction of greenhouse gases and other emissions, such as sulphur and nitrogen oxides and particulate matter from ships, as each Rotor Sail in operation directly replaces the main propulsion power that is typically derived from fossil fuels. With typical annual fuel savings of 300 tonnes per Rotor Sail, avoided emission reductions are 900 t CO<sub>2</sub>/a.

## DECISION-MAKING SUPPORT

Technology company ZeroNorth has unveiled its new vessel selection decision-making support service for

charterers, which is powered by industry-leading analytics and data within the ZeroNorth Platform.

The new service enables charterers to improve fuel consumption predictions by simulating various operating conditions for the vessels they are considering chartering. They can then select the right vessel for the specific route and conditions, and negotiate more precise performance guarantees with owners to reduce the likelihood of cost overruns.

The fuel consumption estimates historically used for making pre-chartering decisions are often based on limited operational data, such as selected speeds and good weather, rather than the dynamic range of situations faced at sea. This creates a challenge for charterers wanting to identify the best-suited vessel for particular journeys.

Moreover, calculating fuel performance for vessels being taken on short-term charters is a well-known challenge for charterers, as they may struggle to tap into a wealth of data that can inform their decision-making. The Vessel Selection service sets out to solve this as well by enabling more accurate predictions of vessel performance, based on historic data and machine learning.

Aided by sophisticated algorithms, Vessel Selection taps into the ZeroNorth platform – which hosts millions of data points that create the industry's most informed data ecosystem – to connect data, evaluate recommendations, and consider commercial outcomes together with emissions reduction potential. For the first time, the same data set can inform both pre-chartering and operational decisions.

The Vessel Selection service is based on a large set of public and proprietary data sources including weather data, vessel characteristics, and operational and historical performance data. It includes a cutting-edge fuel model powered by machine learning that enables charterers to simulate a vessel's fuel consumption, Carbon Intensity Indicator ranking, and CO<sub>2</sub> emissions.

This new functionality offers both operators and charterers greater transparency and greater mutual trust, powering up decision-making for profit and planet.

Commenting on the launch of the new service, Pelle Sommansson, chief product officer at ZeroNorth, says: "The maturity of the data landscape across the shipping industry now makes it possible for us to predict vessel performance more accurately in pre-chartering decisions. The technology exists to support more accurate and dynamic fuel consumption predictions and enable charterers to make better chartering choices.

"The new service is powered by our industry-leading data ecosystem, combined with advanced fuel modelling and data analytics capabilities, enabling us to assess and predict operational performance much more accurately.

"This provides charterers with an unparalleled level of insight, and the power to make substantial progress towards their sustainability and optimisation objectives. As part of our mission to make global trade green, we'll continue to work to design the data and AI-enabled products that will help all companies in the maritime supply chain to make better decisions for profit and planet."

## SAFE AND SOUND

At the Nor-Shipping trade fair in April DNV, Kongsberg Maritime, Kongsberg Seatex, Bastø Fosen and NTNU announced the launch of the new SAFE Maritime Autonomous Technology (Safemate) project. The Research Counsel of Norway-funded project will work on improving and assessing the safety and efficiency of autonomous navigation systems and deploy a pilot on an operational ferry, the *Bastø VI*.

For autonomous navigation, in particular, the technologies that support object detection and collision avoidance have the potential to enhance safety and efficiency across the whole industry.

For these technologies to be widely adopted, the systems not only need to be developed, but tools and processes that assess and assure their safe function must be in place. The Safemate project is designed to cover both of these aspects and test automated systems to assist navigation, while keeping an operator in the loop.

"For DNV, our focus is on building trust in complex software-controlled

systems through testing and verification," says Pierre Sames, group research and development director at DNV. "Modern vessels are already complex automated systems, but building in autonomous decision support capability, increases this complexity immensely. This is why it's vital to develop a framework comprising processes and tools that can assess the safety performance of these systems both in the design stage and throughout operations. As these systems include machine learning modules, they require a new approach to safety assessment and verification."

"The Safemate project is key to further developing the Kongsberg Situational Awareness solution," says Henrik Foss, product manager at Kongsberg Seatex. "The project focuses on exploiting technology brought forward for autonomous vessels, and how we can adapt this to increase safety and efficiency in the current bridge solutions.

The Safemate project enables us to work closely with users on integrating navigational decision support into the bridge in the best manner possible and with class on assurance frameworks, which are essential for delivering these kinds of systems."

The Safemate project will focus on routing and collision avoidance, to create a system that is able to detect threats and obstacles in the marine environment, interpret this information, and communicate a solution to an on-board operator.

The system will be tested through the use of simulators and with human operators in the loop and then will be deployed in full-scale trials on the *Bastø VI*, the Bastø Fosen ferry, which operates between Moss and Horten.

Also at the Nor-Shipping trade fair, DNV signed a classification contract for two new commissioning service operation vessels (CSOVs), ordered by the Norwegian pure play offshore wind operator Edda Wind. The vessels will be built at Colombo Dockyard in Sri Lanka and are designed for service operations during the commissioning and operation of offshore wind farms and are prepared for hydrogen operations. They are scheduled to be delivered under

the Norwegian flag in January 2024 and July 2024.

Advanced CSOVs that offer both next-generation technology and comfortable accommodation are an important part of the value chain in a booming offshore wind segment that is expected to grow as the demand for renewable energy soars over the coming decade.

"Ordering these purpose-built CSOVs will further strengthen Edda Wind's leading position within offshore wind, and we are very pleased to have DNV as our classification partner on this journey," says Håkon Vevang, chief commercial officer of Edda Wind.

"Tremendous growth is expected in the offshore wind market over the next decades, and the move is a clear signal of Edda Wind's ambition to be a world-leading provider in this segment and our commitment to ensuring that our newbuilds are environmentally friendly."

The two CSOVs will be built to the Salt 0425 design and measure 89.3m. They are sister vessels to a DNV-classed newbuild which is currently in construction at the Spanish shipyard Astilleros Gondán. Some of the key features include anti-heeling and roll reduction systems to provide good working conditions onboard and a motion compensated gangway system with an adjustable pedestal to ensure safe and optimal connections to the turbines, even in harsh weather conditions.

## HYVALUE INITIATIVE

GAC Norway has signed up to play a vital role in a major Norwegian hydrogen energy project as part of the GAC Group's commitment to sustainability and accelerating decarbonisation across the wider maritime industry.

The HyValue initiative will look to develop knowledge, methodology and innovative solutions for the production of hydrogen energy carriers in a bid to further Norway's transition to a low emission society.

The project is being led by NORCE, one of Norway's largest independent research institutes, and will receive funding of NOK15m per year until 2030 from the Norwegian government's Ministry of Petroleum and Energy.

GAC Norway will leverage the wider GAC Group's experience and expertise of

low carbon and sustainable bunker fuels to support the HyValue initiative for the development of strategies for the storage, handling and bunkering of hydrogen in maritime applications.

“We will draw on the valuable experience we have gained working with scientists, large-scale research organisations and major maritime partners to support this important initiative,” says Ole Fredrik Torpe, GAC Norway’s quality, training and development officer.

## EFFICIENCY AIMS

Maritime electronics equipment provider Furona will incorporate NAPA Voyage Optimization, a solution developed by maritime software, services, and data analysis provider NAPA, into its new Planning Station PS-100 – a voyage planning, monitoring and briefing system that is currently under development.

The Planning Station PS-100 will be the first Furuno product to integrate NAPA Voyage Optimization software. The Planning Station PS-100, which is being developed as part of Furuno’s marine digitalisation efforts, aims to improve the efficiency and safety of ship operations and the productivity of crew members by performing multiple tasks such as voyage planning, monitoring, and briefing, which were previously carried out using paper charts, on electronic charts displayed on a touch panel interface.

The introduction of NAPA Voyage Optimization into this system will enable optimal route selection and speed allocation when creating and editing voyage plans, thereby contributing to reducing fuel costs and CO<sub>2</sub> emissions and enabling safe and efficient navigation.

Pekka Pakkanen, executive vice president at NAPA Shipping Solutions, comments: “This is a fantastic example of how better connectivity, powerful 3D modeling capabilities and innovative hardware can come together to take voyage optimisation to a new level. By combining Furuno’s navigation equipment and services with NAPA’s operational performance optimisation solutions, we will help shipping, ship management,

and ship-owning companies to improve the efficiency of their operations, reduce fuel costs and CO<sub>2</sub> emissions, improve crew productivity, and optimise ship management from shore.”

The Planning Station PS-100 can consolidate and display necessary information for voyage planning, monitoring and management. Furuno plans to develop a function to acquire, monitor and display information on managed vessels from shore via the internet, thus contributing to the optimisation of vessel management operations from shore.

## NORDIC ROADMAP

The Norwegian Ministry of Climate and Environment has awarded DNV and its partners a contract to develop a roadmap for the introduction of sustainable zero-carbon fuels across the Nordic region.

The “Nordic Roadmap” aims to accelerate the transition to zero-carbon fuels by reducing the key barriers to their uptake and creating a platform for co-operation across the region. Working together with DNV on the development of the Nordic Roadmap are Chalmers, IVL, MAN Energy Solutions, Menon, and Litehauz.

The International Maritime Organization has already set the maritime industry an ambitious timetable for decarbonisation – but one that will require the significant deployment of zero-carbon fuels for shipping.

Although steps are being made, there is significant room for the transition towards greater sustainability to accelerate. The Nordic Roadmap looks to drive this acceleration in the region through identifying and reducing the key barriers to sustainable zero-carbon fuels, examining the onboard, onshore and market barriers and setting out concrete action that can be taken to overcome them.

“This is a project that takes co-operation for green shipping in the Nordic region several steps further and will make an operational contribution to the roll-out of sustainable zero-emission fuels in the Nordic region,” says minister of climate and environment Espen Barth Eide. “We have many shipping

routes in the Nordic region and a close maritime cooperation that gives us many advantages in the development of green maritime solutions. It is important that we take advantage of this, and I look forward to following this project further.”

“The Nordic Roadmap is a significant project because it signals the intent of our region to take the initiative on zero-carbon fuels and drive the energy transition forward in our industry,” says Tuva Flagstad-Andersen, regional manager region north Europe, DNV.

“Across the Nordics we have the technical knowledge base, both in terms of technology development, but also vitally in establishing the safety and regulatory frameworks to support these fuel technologies. In addition, there is a spirit of co-operation and knowledge exchange across institutions and companies that can really turbo charge this transition.”

The roadmap is centred around the establishment of a Nordic co-operation platform to facilitate knowledge sharing, alongside the launch of pilot projects and studies that will build experience in new fuels, to establish “green corridors” and the enabling infrastructure.

The collaboration platform is envisaged as a forum when partners can not only share and discuss the progress of the roadmap, but receive briefings on new policy, R&D, and other linked programmes, and potentially develop projects outside this project.

The focus of the project is on “sustainable zero-carbon fuels” from a Well-to-Wake perspective. The project uses a fuel scorecard, where zero-carbon fuels such as ammonia and hydrogen will be evaluated by applying a variety of KPIs for performance and sustainability, conducting a life cycle assessment (LCA), and assessing the regulatory and safety challenges.

In addition, the sea traffic in the region will be analysed through AIS mapping, as well as possible bunkering and infrastructure possibilities and challenges, leading to the creation of an infrastructure development plan to supply vessels across the region.

The Nordic Roadmap project has been funded by the Nordic Council of Ministers and will run for four years.

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