

BULK TERMINALS

WINTER 2022/23 *international*

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

HIGH RISE

New partnerships and initiatives give the crane sector a boost

GRAINS OF TRUTH

How the war in Ukraine has tipped the balance in the grain market

RISK AVERSE

Changing climatic conditions create new industry challenges



abto
ASSOCIATION OF BULK
TERMINAL OPERATORS

bulkterminals.org

MaritimeAMC

Secretariat Services for Maritime Associations

Your Trusted Partner



The Maritime Association Management Company (Maritime AMC) provides comprehensive secretariat services for trade associations operating across all sectors of the global maritime and offshore industries.

When it comes to entrusting the management of your association to a specialist services provider, we are your ideal partner.

Whether your association is a fledgling or established entity, Maritime AMC has the expertise to ensure growth, develop your association and influence regulatory and media agendas on behalf of your membership.

Our directors have extensive maritime industry and trade association expertise, with demonstrable successes in association governance, publishing, conference production and communications. We speak your language and understand the maritime world.

Maritime AMC currently provides full secretariat services to the Association of Bulk Terminal Operators (ABTO) and previously to the Clean Shipping Alliance 2020 (CSA 2020).



Maritime AMC Ltd
35 Beacon Drive,
Newton Abbot
TQ12 1GG
T. +44 (0) 1626 681103
E. info@maritimeamc.com

www.maritimeamc.com

STEERING THROUGH CHOPPY WATERS

BY SANDRA SPEARES

There are challenging times ahead for port and terminal operators – but there is plenty of hope on the horizon

As port and terminal operators continue to make efforts to get back on track following the pandemic years, the demands of new regulatory drives combined with improving efficiency in a tough operating environment continue to be felt.

Ship operators need to come up with solutions to improve efficiency – thus saving costs – while ensuring that they meet the demands of new regulations, in particular those that protect the environment. Such initiatives include areas such as paints – which have seen many changes over the years in terms of what products are environmentally acceptable – and fire-fighting methods, where safety procedures might see operators falling foul of the most eco-friendly approach.

Meanwhile, commodities' trading has been affected in the past year by the Ukrainian war, particularly where the supply of grain is concerned, and those operating in this segment have been buffeted by supply chain issues and the need to locate new sources of product.

While charter rates have fallen off in the bulk segment compared with those rates seen last year, the outlook continues to be reasonably positive

going through this year. Meanwhile, the high market rates stopped companies going for vessel demolition last year, but more ships may head to the breakers in 2023, forecasters such as Drewry suggest.

The issue of tackling emissions will continue to grow in importance over the course of this year – and increasingly over all the years leading up to the next regulatory deadline. That said, it remains to be seen if operators will actually make the necessary changes in terms of

working practices, or will adopt a tick-box mentality and delay implementing the necessary changes.

Health and safety issues continue to be high on the agenda and some problems still dog the industry, despite the amount of information and working practices already in place. A good example is the dangers of enclosed space accidents, which continue to affect the maritime industry and which are of particular concern in port warehouses containing products that are dangerous unless properly handled.

Other new regulatory approaches include the fact that from 1 January next year it will be compulsory for ports around the world to operate Maritime Single Windows for the electronic exchange of information required on ships' arrival at a port, their stay and their departure. It remains to be seen how different ports will handle the information exchanges required. In all, the arrival of higher levels of technology in ports will mean further investment will be needed by operators to ensure they meet required levels of information exchange.

You can read about all these issues in this latest edition of *Bulk Terminals International*. We hope you enjoy it.



Health and safety issues continue to be high on the agenda and some problems still dog the industry, despite the amount of information and working practices already in place



N.M. HEILIG B.V.
FROM CONCEPT TO INSTALLATION

PART OF  **HEILIG GROUP**

FROM CONCEPT...

...TO INSTALLATION

We challenge ourselves to offer the best possible solutions by designing, developing and delivering state-of-the-art machinery for handling bulk goods.

For more information visit www.heiligbv.com

Direct contact: info@heiligbv.com or +31 (0)72 571 66 88

**THIS IS HOW
WE ROLL**



BULK TERMINALS

international



BULK TERMINALS

WINTER 2022/23

international

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

HIGH RISE

New partnerships and initiatives give the crane sector a boost

GRAINS OF TRUTH

How the war in Ukraine has tipped the balance in the grain market

RISK AVERSE

Changing climatic conditions create new industry challenges

abto
ASSOCIATION OF BULK
TERMINAL OPERATORS

bulkterminals.org

abto
ASSOCIATION OF BULK
TERMINAL OPERATORS

PUBLISHED BY

EDITOR: SANDRA SPEARES

SPEARES1@AOL.COM

DESIGNER: JUSTIN IVES

JUSTINDESIGN@LIVE.CO.UK

PROJECT DIRECTOR: JONATHON FERRIS

JONATHON.FERRIS@BULKTERMINALS.ORG

PROJECT MANAGER: ALEX CORBOUDE

ALEX.CORBOUDE@BULKTERMINALS.ORG

SUB-EDITOR: SAMANTHA ROBINSON

SAM.ROBINSON.JOURNALIST@GMAIL.COM

PUBLISHER: BILL ROBINSON

PRODUCTION@BULKTERMINALS.ORG

ABTO

35 BEACON DRIVE

NEWTON ABBOT

DEVON

TQ12 1GG

CHIEF EXECUTIVE: SIMON GUTTERIDGE

CE@BULKTERMINALS.ORG

TECHNICAL ADVISER: IAN ADAMS

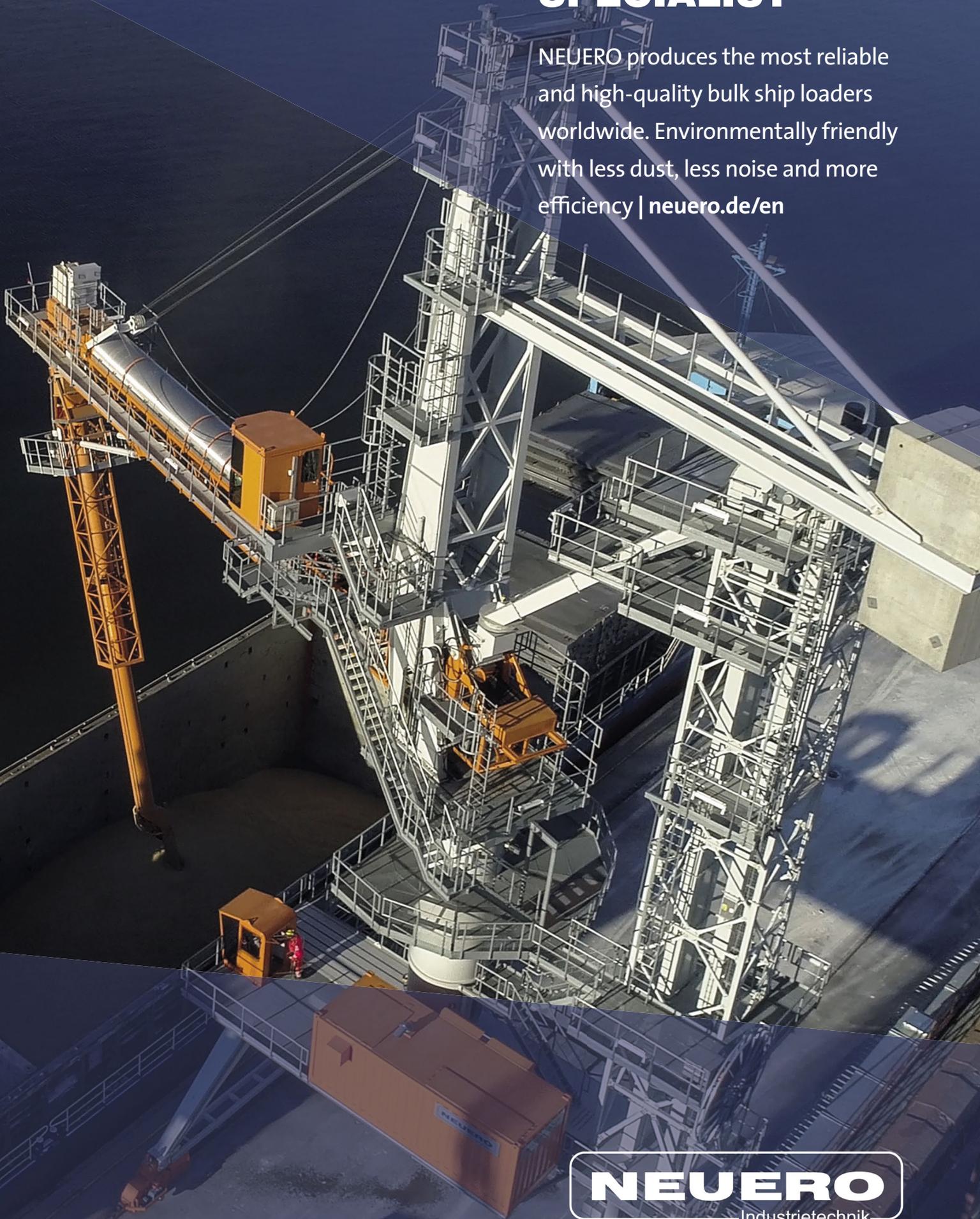
TECH@BULKTERMINALS.ORG

The views expressed in *Bulk Terminals International* are not necessarily those of ABTO or the publisher unless expressly stated to be such. ABTO disclaims any responsibility for errors or omissions or their consequences or for advertisements contained in this magazine and has no legal responsibility to deal with them.

BULKTERMINALS.ORG

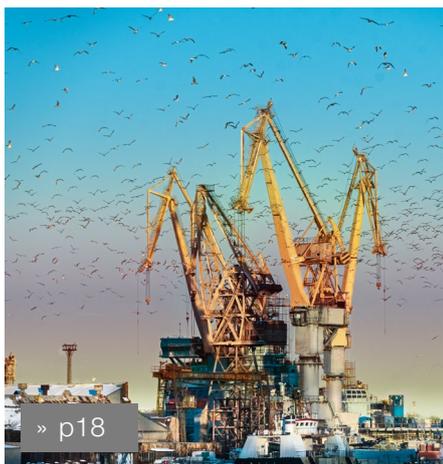
SHIP LOADER SPECIALIST

NEUERO produces the most reliable and high-quality bulk ship loaders worldwide. Environmentally friendly with less dust, less noise and more efficiency | neuero.de/en



NEUERO
Industrietechnik

CONTENTS



01 EDITOR'S LETTER

Sandra Speares looks at the challenging times ahead for port and terminal operators – but stresses that there is plenty of hope on the horizon

06 WELCOME

ABTO CEO Simon Gutteridge despite extensive training for crews, enclosed space fatalities continue to happen. How can the industry put an end to such incidents?



08 WORLD NEWS ROUND-UP

All the latest industry initiatives, partnerships and products

18 CRANES AND GRABS

Improving levels of service and efficiency is a key element of the segment and market players have been co-operating to provide enhancements for clients

25 GRAINS

Basil M Karatzas looks at why the future of the grain trade out of the Black Sea hangs in the balance, in light of Russia's invasion of Ukraine

31 CEMENT

Although it is likely to be a tricky year ahead for the cement industry, increased environmental awareness will help to give a boost to the sector



34 PAINTS

Ensuring that paints and coatings are environmentally friendly is a priority for manufacturers, as recent advances and innovations illustrate

36 SAFETY

As well as the risks on board ships, changing climatic conditions are adding new hazards to ocean-going traffic and ports alike

41 VIEWPOINT: NAPA SAFETY SOLUTIONS

Esa Henttinen, executive vice president of NAPA Safety Solutions, looks at how data and simulation tools are charting a new course for maritime sustainability

44 SPOTLIGHT: US PORTS

Funding initiatives and state grants are giving US ports up and down the country a much-needed financial boost and chance for regeneration

48 SPOTLIGHT: GERMAN PORTS

Handling the transition to the use of new sources of energy is just one of the challenges that the German ports' sector is squaring up to this year

52 TECHNOLOGY

Enhancing performance is key to improving port safety, efficiency and automation – and also plays a part in cutting port costs

SAFETY MUST COME FIRST

BY SIMON GUTTERIDGE

Despite extensive training for crews, enclosed space fatalities continue to happen. How can the industry put an end to such incidents?

T*ragically, enclosed space fatalities continue to happen to stevedores and vessel crew members with chilling regularity. This is despite the knowledge of the dangers – at least at a senior level within the bulk shipping and terminal industries – that enclosed spaces can present, since attention is drawn to the dangers of enclosed spaces in every safety course.*

Is it a question that the message that enclosed spaces must at all times be treated as unsafe is just not being properly disseminated down the line to vessel crews and stevedores? Are sufficient or any safety training or drills undertaken? Is breathing apparatus sufficiently close to hand to be readily available for use, both by the individual who first needs to enter an enclosed space and then by those who observe a problem with their colleague?

Many of these incidents do indeed involve multiple casualties. These are presumably caused by the wholly understandable desire to rescue colleagues who have succumbed to either noxious fumes or oxygen depletion, the rescuers then becoming victims themselves.

It should be noted that the majority of these incidents are caused by oxygen

depletion, rather than poisonous fumes given off by bulk cargoes. Once the hatch covers are closed, the oxygen contained within the hold and entry points is immediately absorbed by the cargo or rusting.

Of course, it is not just bulk operations where incidents, whether fatalities or near fatalities, occur. However, they do constitute the overwhelming majority of these incidents. Container operations are much more automated. So, the need to go into unvented holds or enter enclosed spaces to gain access to them does not occur as much.

On 22 June last year, fatal injuries to three stevedores occurred in a cargo hold on board Isle of Man-registered bulk carrier *Berge Mawson* while loading coal at the Bunyu anchorage in Indonesia. Twelve days later on 4 July, Lloyd's List journalist Megawati Wijaya reported the incident.

An investigation was launched on behalf of the Isle of Man Ship Registry into the deaths of the three stevedores aboard the 92,000 tonne vessel, managed by Berge Bulk Maritime PTE based in Singapore.

The investigation is being carried out by the UK's Marine Accident Investigation Branch (MAIB), which

examines and investigates all types of marine accidents to or on board UK vessels worldwide (and on behalf of other Red Ensign registers), as well as in UK territorial waters. Located in offices in Southampton, the MAIB is an independent branch within the Department for Transport. The head of the MAIB, the chief inspector of marine accidents, reports directly to the secretary of state for transport.

The MAIB website (at tinyurl.com/MAIBInvestigations) lists current investigations and gives the status of that into the *Berge Mawson* as "Under investigation". This means an investigation is being carried out, which will lead to a published report. Sources suggest the report will probably be published this summer on the MAIB website.

This is the middle one of three stages, the other two being a "preliminary assessment", which means further details are being obtained to establish whether or not further investigation is warranted, and the final stage when things move from "under investigation" to "consultation stage". This is when an investigation is largely complete and a draft copy of

the report is sent to interested parties for comment.

Anyone interested in safety issues generally would be interested to download the latest MAIB *Safety Digest* from its website. This draws the attention of the marine community to some of the lessons arising from investigations into recent accidents and incidents. The aim of the *Safety Digest* is to prevent similar accidents happening again.

SEEKING SAFEGUARDS

Garry O'Malley, operations director at the UK's largest freeport, Teesworks, is chairman of ABTO's Technical Committee. He has been invited by MAIB to take part in the investigation to determine what safeguards can be brought in to prevent a tragedy like the one that happened on the *Berge Mawson* from occurring again. O'Malley is ideally placed to assist, having experience from both the seagoing and shoreside of bulk operations.

He has held a series of senior management roles for more than 30 years, working in a number of UK east coast ports. O'Malley has vast experience in all aspects of port and terminal operations that handle a wide variety of bulk, break bulk and unitised cargoes. Prior to embarking on a career in port management, he spent a number of years as a senior seagoing officer in the Merchant Navy, serving on a wide variety of ships, including large bulk carriers trading worldwide.

O'Malley is one of many interested parties who were invited to a recent meeting of the MAIB, including Richard Steele, head of the International Cargo Handling Coordination Association (ICHCA) International, with whom ABTO has a memorandum of understanding (MoU). Part of the remit of this MoU is to cooperate together on safety issues. ICHCA has long, often in collaboration with the TT Club, taken a lead on safety issues.

O'Malley, Steele and Professor Mike Bradley from The Wolfson Centre for Bulk Solids Handling Technology will take part in a session on port safety, including enclosed spaces, at our Annual ABTO Bulk Terminals Conference in Lisbon

this October. Hopefully the MAIB will have published the report into the *Berge Mawson* by then, and we will be in a position to discuss its findings at Lisbon.

Currently, there is no mandatory enclosed space course. The International Maritime Organization could impose this on shipping. Maybe the outcome of the *Berge Mawson* will prompt it to move in this direction. However, with no remit to impose anything on ports and terminals, that would only solve part of the problem. Ports and terminals need to step up to the mark. ABTO will play its part, both in continuing to highlight the dangers posed by enclosed spaces at events like the Annual ABTO Bulk Terminals Conferences and in collaboration with our partners through industry initiatives.

Our conferences are designed for all those involved in the transportation, storage and handling of bulk commodities. As well as terminals and ports we welcome equipment and service suppliers, professional advisors and academics to the conference. Indeed, ABTO feels strongly that it is only through the interaction with these others that bulk terminals will achieve increased operational efficiencies, together with safety and environmental compliance.

Last year, Bulk Terminals Riga was a resounding success and the first time we have all been able to meet in person since 2019 in Amsterdam. Delegates from ABTO members Silopor in Lisbon suggested that the Bulk Terminals conference should be held in their port city this year. Other delegates in Riga enthusiastically agreed.

This year the Port of Lisbon is celebrating its 135th anniversary, so we are delighted that it will be our host port for Bulk Terminals 2023, taking place on Wednesday 25 and Thursday 26 October this year. ABTO is very grateful for the support of the Port of Lisbon Authority, our local organisers for the conference.

Lisbon is ideally located along the world's major maritime trade routes, connecting the Mediterranean region with Northern and Central Europe

– enabling trade with America, the Far East, Africa and Europe.

The port offers excellent conditions for the handling of all types of solid bulks. Agri-foodstuffs is a major segment, with a storage capacity of more than 420,000 tonnes, serving the oilseeds, edible oils and biodiesel markets. Clinker and cement trades are also served through a dedicated terminal with good river, road and rail access. The handling capacity for cargoes serving the steelmaking industry is over seven million tonnes a year.

FULL PROGRAMME

The 2023 conference in Lisbon will set the scene with the traditional analysis of bulk markets, continuing with a full programme focused on the concerns of operators – offering sound practical solutions to terminal operators for improving safety, streamlining operations and ensuring environmental protection.

In the meantime, our next two events are short courses in association with the Wolfson Centre: *Port and Terminal Operations for Bulk Cargoes* on 28-31 March and *Biomass Operations and Handling Technologies* on 17-21 April. To register an interest in attending any of ABTO's short training courses, please contact events@bulkterminals.org or call me on the number below. You can also register directly by visiting our website.

Also in March, ABTO is supporting the Institute of Mechanical Engineers (IMechE) event '*Bulk Handling for Net-Zero*' on 7 March at the Argyll Ruane Engineering Training Centre in Sheffield. IMechE is offering its member rate to ABTO members – visit imeche.org to find out more.

Keep an eye on the Events section of our website for conference developments and registration details. Meanwhile, I hope you enjoy our winter edition of *Bulk Terminals International*.

Keep in touch and stay safe.

Simon Gutteridge Chief

Executive, ABTO

Tel: +33 (0)321 47 72 19

**Email: ce@bulkterminals.org
bulkterminals.org**

WORLD NEWS ROUND-UP

Although the shipping industry is under pressure from a range of issues – including supply-chain challenges and new regulations coming into force – there is good news in areas such as improving safety and port investment



DECLINES AND FALLS

Charter rates have been under pressure in recent months, one of many challenges operators in the bulk segment face – new regulations on emissions and ensuring the most cost-effective working conditions adding to the load.

While multi-purpose vessel (MPV) rates are expected to soften through 2023, the rate of decline is expected to be less than in competing sectors such as containerships and handysize dry bulk carriers, according to the latest forecasts from Drewry's *Multipurpose Shipping Forecaster* report.

Last year started with charter rates in all three main dry cargo sectors at unprecedentedly high levels, peaking in 1Q22. At that point, container ship rates were 900% higher than 2Q20 (the lowest point in the market over recent years), bulk carrier charter rates were 200% higher and MPV rates up almost 150%. But from that point there was only one way for them to go.

From the peak at the beginning of the year, charter rates in the container shipping sector lost almost 80% of their value to end November 2022 and handy bulk carriers 50%. The MPV sector is, however, doing better – at least for the

heavylift-capable sector – with long-term charter rates down just 10% from their peak.

The reasons behind this are largely to do with the demand for these vessels and the particular mix of cargoes that they can lift. The MPV sector benefitted for much of the year from spill-over cargo that was a by-product of widespread supply chain disruption. As those issues have unwound, project cargoes (from both the renewables and oil and gas sectors) have underpinned the loss in demand.

For the first time in some years, the total MPV fleet recorded growth last year and is likely to do so again in 2023. This is due to the extremely low demolition sales reported over 2022, although this was not surprising given the peak in charter rates. However, even so, given the impending International Maritime Organization regulations on emissions and carbon reductions, Drewry says it had expected a few more vessels to head to the beaches.

The organisation expects demolition rates to rise through 2023 back to pre-pandemic levels, on weaker earnings and increasing costs of looming emission regulations. However, most vessel candidates will be smaller craft at less than 10,000dwt and not heavylift capable.

Conversely, the majority of newbuilding orders are for the larger heavylift capable vessels. The net effect will be fleet growth of 1.2% in 2023, but the non-heavylift fleet will effectively stagnate, while the heavylift capable vessels are expected to see a rise of 2.5% in deadweight terms.

Modest fleet growth and rising competition for breakbulk and project cargo in the face of a weakening global economy will depress MPV charter rates through 2023. But the decline in rates will be less marked than anticipated for the competing sectors of container ships and dry bulk carriers.

MARITIME SINGLE WINDOWS

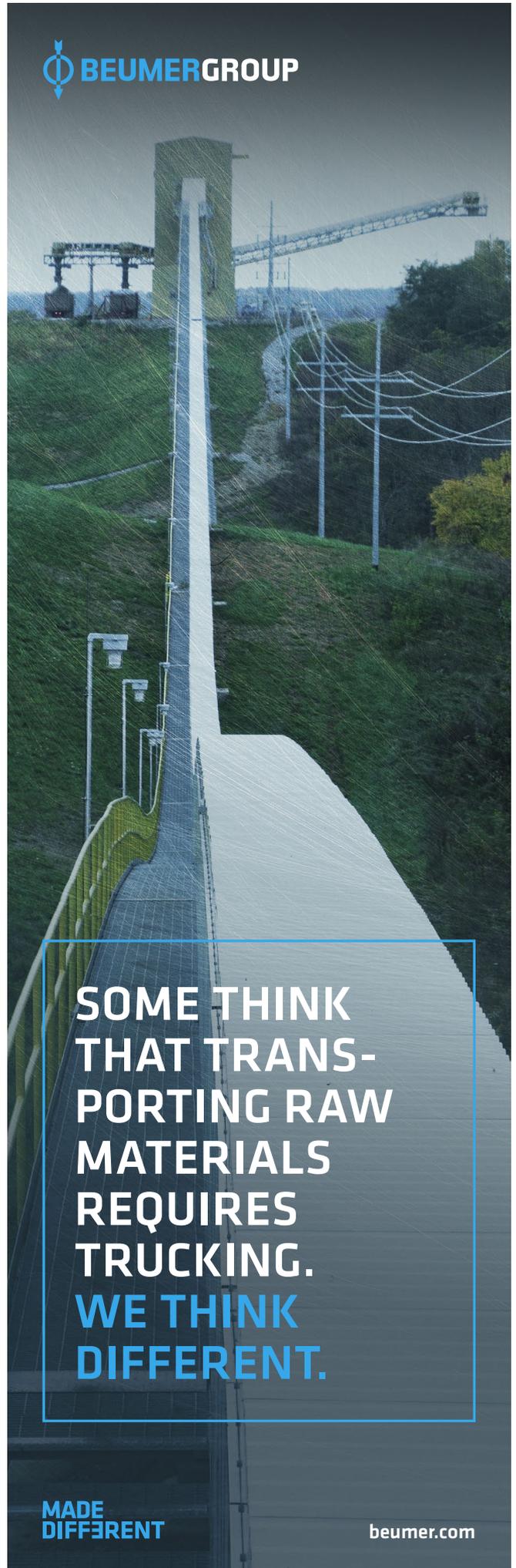
From 1 January 2024, it will be compulsory for ports around the world to operate Maritime Single Windows (MSWs) for the electronic exchange of information required on ships' arrival at a port, their stay and their departure. This mandatory change follows the adoption by the International Maritime Organization's (IMO) Facilitation Committee of amendments to the FAL Convention.

With this key date in mind, IMO hosted a two-day symposium in January, *Maritime Single Window 2024 – a window of opportunities*, jointly organised by IMO, the International Association of Ports and Harbors (IAPH) and BIMCO, with the support of the International Port Community Systems Association.

A host of experts from across the shipping and ports sectors explored how MSWs fit with national digitalisation strategies, the best approach to designing and implementing MSWs to suit member states' maritime trade facilitation objectives and objectives to achieve the greening of shipping.

Also discussed were the concept of interoperability and understanding how to apply industry standards to harmonise electronic data exchanges, as well as port call data requirements, and the development of strategic partnerships.

Opening the symposium at IMO's London headquarters, IMO



**SOME THINK
THAT TRANS-
PORTING RAW
MATERIALS
REQUIRES
TRUCKING.
WE THINK
DIFFERENT.**

Secretary General, Kitack Lim, said that making MSWs mandatory from 1 January 2024 was not only “a significant step towards accelerating digitalisation in the maritime trade”, but also “an opportunity for all stakeholders in shipping, and a necessary step forward”.

Lim said, too, that taking this step would accelerate the digitalisation and decarbonisation aspirations of international shipping. He praised progress made in recent years by the shipping and port industries and pledged IMO’s support to member states in finding tangible solutions to the forthcoming new obligations under the Facilitation of International Maritime Traffic (FAL) Convention.

In his opening remarks, IAPH’s President, Subramaniam Karuppiyah, warned that the covid-19 pandemic emphasised that the maritime industry is seriously lagging behind in its move to digitalization. Nikolaus Schües, President Designate of BIMCO, sounded an optimistic note, describing MSW as “an opportunity to be exploited and one we cannot afford to miss”.

A key panel discussion centred on the support that IMO member states can access to assist them in their MSW implementation journey.

Periklis Saragiotis from the World Bank and Kate Munn, a consultant, have been working together with Fiji on their MSW project. They backed the approach of “upstream analysis” to assess implementation readiness before making any adaptations or simplifications to systems, thereby avoiding digitising inefficient procedures.

Fiji is a good example, said Saragiotis, of the World Bank and IMO cooperating with a member state. “If we work together and coordinate and try to send a message to the client and government that we’re here to help, that’s a very powerful message.”

Antigua and Barbuda have received technical expertise in-kind support for their MSW implementation from Norway. They settled on a system developed specifically with small island developing states in mind that can be modified and adopted as required.

Wayne Mykoo, representing the Antigua and Barbuda Department of

Marine Services and Merchant Shipping, said the project underscored IMO’s ability to support members to meet their obligations.

Another IMO initiative is that of the Single Window for Facilitation of Trade (SWIFT) Project. Under its auspices, Singapore is implementing a pilot project with Angola to establish an MSW platform developed for medium ports based on the system implemented successfully in Antigua and Barbuda.

Gavin Yeo from Singapore’s Maritime and Port Authority summarised where they’ve got to: the project is currently developing prototypes for the Angola team on which they will provide feedback so that improvements can be made during the build process.

IMO’s e-learning courses offer another form of support. Delegates heard about a one-day modular course that is being constructed to help disseminate knowledge around the benefits of good implementation of an MSW. It will be of particular use to developing countries, ports and agencies planning to implement their own MSW, said Jarle Hauge of the Norwegian Coastal Administration, who is putting together the resource.

Summing up IMO’s broader perspective on where shipping is with its move towards digitalization, Jose Matheickal, Chief of IMO’s Department of Partnerships and Projects said he believes the digital transition is gathering pace in the developed world but developing countries are still to catch up.

“Things are not happening the same in the global south as the global north”, he said. He emphasised that the economic and regulatory drivers – in the form of FAL – are in place, and reminded delegates of the contribution to decarbonization that MSWs will bring.

SAFETY CODE FOR STAFF

A new mandatory safety code for ships carrying industrial personnel – aimed at ensuring the safety of people transported to work on offshore facilities including wind farms – has been adopted by the International Maritime Organization’s (IMO) Maritime Safety Committee (MSC 106), which met in November last year.

The new Chapter XV of the International Convention for the Safety of Life at Sea (SOLAS) and the associated new International Code of Safety for Ships Carrying Industrial Personnel (IP Code) were developed by the IMO Sub-Committee on Ship Design and Construction (SDC 8).

The aim is to provide minimum safety standards for ships that carry industrial personnel, as well as for the personnel themselves, and address specific risks of maritime operations within the offshore and energy sectors, such as personnel transfer operations.

Such personnel may be engaged in the construction, maintenance, decommissioning, operation or servicing of offshore facilities, such as wind farms, as well as offshore oil and gas installations, aquaculture, ocean mining or similar activities.

The amendments and Code are expected to enter into force on 1 July 2024.

SAFETY OF SEAFARERS

The International Maritime Organization’s Maritime Safety Committee was updated on the latest developments regarding seafarers and shipping in the Black Sea and the Sea of Azov.

The Committee was also provided with an update on the latest developments regarding the successful operation of the Black Sea Grain Initiative.

LOWESTOFT BOOST

The Port of Lowestoft, owned and operated by ABP, the UK’s leading ports group, has invested more than £600,000 to enhance its infrastructure and support customer Peterson’s business growth.

Peterson has recently announced a new contract to provide integrated logistics services to ODE Asset Management (ODE AM). These services will include quayside services, fuel bunkering, road transport and other logistics support for offshore assets in the southern North Sea managed by ODE AM.

Over the past 12 months, ABP has made a number of investments to upgrade Town Quay within the



MRS GREIFER

OUR EXPERIENCE - YOUR ADVANTAGE

Rope-, Motor-, Hydraulic-Grabs

The perfect grabs with unbeatable reliability, leading in efficiency and quality, expedient and economical.



MRS GREIFER GmbH

Talweg 15-17 • 74921 Helmstadt • Germany
Tel: +49 7263 912 90 • Fax: +49 7263 912 912
export@mrs-greifer.de • www.mrs-greifer.de

MRS GREIFER

Inner Harbour, Peterson's main base in Lowestoft. These include the enhancement of security features, resurfacing, reconfiguration of buildings, installation of new fencing, sub-surface fuelling facilities and power upgrades, which together create a well-equipped area for customers.

Speaking about the new deal with ODE AM, Jason Hendry, managing director for England and renewables strategy at Peterson, says: "We are delighted ODE AM has chosen Peterson as its logistics partner in the southern North Sea, and we look forward to supporting its operations from our Lowestoft base.

"We have made a long-term commitment to the Port of Lowestoft, and we feel confident that ABP's recent infrastructure improvements, together with our own plans to establish a new control tower at the Port, will help us to deliver service excellence to all of our customers in the years ahead."

ABP has also invested in its marine

services by acquiring state-of-the-art pilot boats across the group and recruiting and training new marine pilots. These enhancements will contribute to attracting more business from southern North Sea energy companies to Lowestoft.

SPACE SAFETY IN SPOTLIGHT

InterManager has welcomed a commitment by the International Maritime Organization (IMO) to review guidance governing safe working in enclosed spaces onboard ships.

Heralding the move as a significant step forward in crew safety, the association says it will work with the IMO, flag states and other maritime partners to make sure lessons are learned from the many fatalities that have occurred in enclosed spaces and also ensure new legislation is workable and effective.

InterManager submitted a comment paper to the IMO's Maritime Safety Committee 106 meeting, co-sponsored by a number of industry partners, in

response to China's proposal to revise IMO Resolution A.1050(27), which sets out recommendations for entering enclosed spaces aboard ships.

InterManager's paper highlighted additional information that it believes should be considered and provided high-level information relating to enclosed space incidents.

The ship and crew management trade body has been collating statistics on deaths and accidents in enclosed spaces since 1999 and reports that during this period, enclosed spaces have claimed the lives of 122 seafarers and 45 shore workers.

However, InterManager Secretary General, Kuba Szymanski, fears these figures could be higher still and says he believes there is under-reporting by shipping authorities.

"This is an opportunity for the shipping industry, led by the IMO, to comprehensively assess the dangers posed by the range of enclosed space and oxygen-depleted areas

onboard ships and to make meaningful recommendations that will remove or reduce risk, backed up by robust procedures that should aim to ensure no seafarer or shore worker dies while carrying out their jobs," he says.

In its submission, InterManager and its co-sponsors advise re-examination of previous submissions to address issues already raised, such as cargo hold gas monitoring, an appreciation of oxygen depleting cargoes, cargoes that are fumigated and cargoes that emit toxic gas.

It states: "The scope of the revision needs to be broad and comprehensive in order to take into account both the human element and ship design factors that have contributed to previous enclosed space incidents. This would undoubtedly mitigate against, and hopefully prevent, such incidents occurring in the future."

The submission highlights a need to consider design of access as a means of reducing the number of such incidents, pointing out the risks posed by areas such as hold access ladders, specifically the enclosed trunk ladder.

InterManager points out that previous submissions on enclosed space risks have discussed "the repetitive systemic nature of the enclosed space incidents" and this is a matter that it has campaigned about, urging the shipping industry to delve deeper into accident investigations.

The submission draws attention to industry-led investigations into enclosed space accidents, commenting: "These reviews have resulted in the emergence of several distinct themes focussing on; design and construction, gas evolution, movement and entrapment within the ship structure, and the human element prevalent in many enclosed space incidents, such as the rush to rescue a single casualty resulting in the death of many, the disregard of procedures and local adaptation of unsafe practices.

Likewise, it has been identified that in many cases ship and shore personnel are subject to time pressure, which may result in them rushing or missing checks to meet artificial deadlines that often result in entry into spaces for which they are not fully prepared. These aspects

have resulted in countless casualties where a known breach of procedure in an enclosed space has often ended in further loss of life."

TRAPPED SHIPS AT RISK

Marine markets face a profusion of "total loss" claims for trapped ships early in 2023, one year after the shut-down of Ukrainian ports, a London audience of practitioners was told recently.

Ukrainian ports were closed for vessel entry and exit from February 25, 2022, the day after the Russian invasion, and mines are reported to have been laid, effectively blocking as many as 100 vessels in ports and up rivers. The full value of vessels trapped is unclear, but it could be as much as \$800m to \$1bn.

At the time of the invasion, many of the vessels had war risks policies, but on February 24 war risks insurers began to use their right to demand extra premium to extend the cover.

A market briefing recently, organised in London by the Association of Average Adjusters and the International Underwriting Association, highlighted the depth of the marine insurance issues involved, and to emphasise this it was entitled *Do Mention the War!*

Burkhard Fischer, vice-chairman of the Association of Average Adjusters and a partner with Albatross Adjusters in Limassol, joined with Jonathan Bruce, a partner at HFW and deputy head of the firm's global insurance and reinsurance group, to survey key issues over the detention of ships. Among debatable matters is premium charged for a vessel after it has been seized, arrested, or detained.

Bruce said of the current blockage at the ports: "This is a novel situation and there is therefore quite a lot of uncertainty. Unless things change quickly, it seems likely that there will be a lot of deemed total losses all in one 'clump' next February, and some quick decisions will need to be made.

"Most likely, disputes can be avoided through sensible discussion and creative solutions, but there is potential for flies in the ointment, for example if vessels get destroyed by missiles. There are likely to be disputes also with reinsurers about what is considered the number of occurrences."

He said that if trapped vessels were on charter, extra premium might have continued to be paid, but over time that would presumably have stopped



and most of the policies lapsed or been cancelled. In some cases, loss of hire has probably been paid by war risks insurers, but such payments were subject to limits. In many instances crews will have been evacuated, leaving only a few members for maintenance.

Bruce noted that since August, three ports had reopened for grain exports, although agreement with Russia has been under threat. Fischer added that, following the Suez Canal crisis in 1967 the Institute Detainment Clause was introduced, and a detainment clause is now automatically included in the Institute War and Strikes clauses.

An arbitration took place in November-December 1981 seen as a test case on how to deal with a vessel trapped in the Shatt-al-Arab, and it was held that shipowners had lost the free use and disposal of their vessel. It was thus reasonable to consider the vessel a constructive total loss after 12 months from notice of abandonment.

SUPPLY CHAIN INVESTMENT

The UN Conference on Trade and Development (UNCTAD) in its flagship Review of Maritime Transport 2022 has called for increased investment in maritime supply chains. Ports, shipping fleets and hinterland connections need to be better prepared for future global crises, climate change and the transition to low-carbon energy, it says.

The supply chain crisis of the past two years has shown that a mismatch between demand and supply of maritime logistics capacity leads to surges in freight rates, congestion, and critical interruptions to global value chains.

Ships carry more than 80% of the goods traded globally, with the percentage even higher for most developing countries, hence the urgent need to boost resilience to shocks that disrupt supply chains and fuel inflation and affect the poorest the most.

“We need to learn from the current supply chain crisis and prepare better for future challenges and transitions. This includes enhancing intermodal infrastructure, fleet renewal and improving port performance and trade facilitation,” UNCTAD secretary-general

Rebeca Grynspan said. “And we must not delay the decarbonisation of shipping.”

Logistics supply constraints combined with a surge in demand for consumer goods and e-commerce pushed container spot freight rates to five times their pre-pandemic levels in 2021, reaching a historical peak in early 2022 and sharply increasing consumer prices. The rates have dropped since mid-2022 but they remain high for oil and natural gas tanker cargo due to the ongoing energy crisis.

Dry bulk freight rates increased due to the war in Ukraine and related economic measures, as well as the prolonged covid-19 pandemic and supply chain disruptions.

An UNCTAD simulation projects that higher grain prices and dry bulk freight rates can lead to a 1.2% increase in consumer food prices, with higher increases in middle- and low-income countries.

DREDGING CONCERNS

The British Ports Association (BPA) has written to the UK’s Environment, Food and Rural Affairs (DEFRA) select committee to express concerns over the Committee’s recommendations on dredging.

Recently, the Committee wrote to ministers with a series of recommendations that included reviews of dredging activity, reviews of licence conditions, the “minimising” of dredging until investigations are complete, and new dredging assessments. In their response, the government defended the current process for issuing dredge disposal licenses.

The BPA welcomes the government’s response and is calling on Defra to continue to defend the robust procedures already in place to assess and approve hundreds of dredge disposal licences. The Committee’s recommendations have been based upon the idea that there are two competing theories to explain the



MACHINE, REPAIR AND SERVICES

COMPANY NEWS



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

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

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

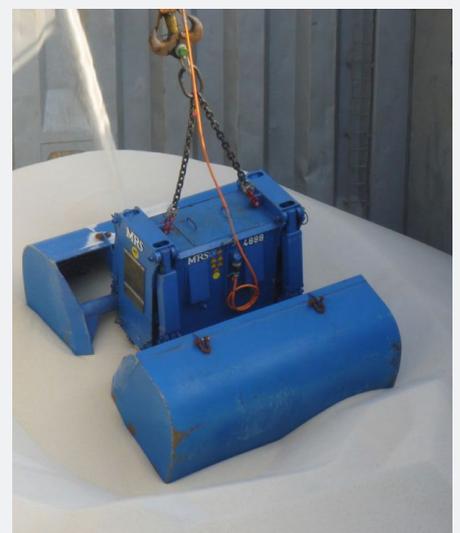


Each grab is manufactured under the industry's strict quality controls, according to the QAP approved by our experts. We are only too aware that delays in shipping can result in exorbitant costs so we keep a full stock of spare parts, and our committed after-sales service team is available to see to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

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



For more information, contact:
MRS Greifer GmbH
 Talweg 15 - 17
 74921 Helmstadt
 Tel: +49 7263 9129-15
 Fax: +49 7263 9129-12
 Email: export@mrs-greifer.de
mrs-greifer.de



cause of the mortality event, one put forward by regulators and another by a marine scientist commissioned by the local fishing industry. The latter concludes that dredging activity may have had an impact.

Having reviewed a copy of the paper, which has not been formally published, the BPA is concerned that recommendations that could have far-reaching consequences for the ports industry are being made based on its conclusions.

The BPA says it does not believe the conclusions reached in the paper are credible or even reflective of the results found by the researcher. The results in the paper suggest that more than 5,000 dredge disposal events would have had to occur in a single day to have the impact stated in the report. The paper also contains a number of factual errors, the BPA says.

The BPA's letter to the Committee offers to provide additional evidence on the importance of dredging to the UK economy and on its environmental impact.

Mark Simmonds, BPA's director of policy and external affairs says: "We have become increasingly alarmed at some of the statements and recommendations that have been made based on what we believe is unconvincing or erroneous evidence. We are pleased that the minister has defended the robust procedures that are in place and the expert advice available from regulators. We hope that Defra ministers continue to back the government's own expert scientific advice.

"Dredging is fundamental to the safe continued operation of UK ports, which are in turn critical to UK logistics, energy, defence, and indeed fishing. No port dredges more than the minimum necessary to allow for the safe navigation of vessels, not least because of the cost.

Dredging is a routine practice in most ports, nevertheless there are strong processes in place to protect the marine environment and activity is overseen by world-class marine scientists at various regulators and agencies."

IN-DEPTH LOOK AT LNG

SEA-LNG has produced its overview of liquefied natural gas (LNG) as a marine fuel in 2022-2023. *A View from the Bridge 2022-2023* highlights how the shipping industry has advanced along the LNG pathway to decarbonisation in 2022 and outlines what progress is anticipated in 2023.

Last year was another very strong year for LNG vessel orders, with numbers almost equalling those in 2021, the record year to date, despite exceptionally high LNG prices. The growing, multi-sector order book and continuing build-out of infrastructure reflect the recognition from shipowners and fuel suppliers that LNG delivers immediate and important local air quality benefits and greenhouse gas (GHG) compliance today and offers a low-risk, incremental pathway to decarbonisation, the company says.

The shipping industry is making newbuild investment decisions now that will impact GHG emissions today and for the next 25-30 years, the typical lifetime of a deep-sea vessel. While regulators and industry are agreed on the net-zero emissions destination, the implications of the pathway are rarely discussed, SEA-LNG says. The total

pathway emissions associated with many of the alternative fuels being discussed may be much higher than those associated with LNG and its bio and synthetic variants.

There is growing recognition that decarbonisation will not be a "big bang" process where the industry moves in a single step from fossil to zero-emission, renewable fuels. In 2023, the commercial availability of bio-LNG will continue to scale up.

As one of the cheapest of the alternative fuels under discussion, bio-LNG offers an immediate next step on the LNG pathway to decarbonisation, and allows owners to transition safely and easily from fossil LNG – meaning vessels ordered today will be able to continue operating within increasingly stringent GHG emissions regulations up to and beyond 2050, the company says.

A View from the Bridge includes additional statistics, quotes and infographics on the LNG orderbook, bunkering infrastructure, local emissions, alternative fuel pathways, practical decarbonisation challenges, regulatory compliance, bio-LNG cost and availability, renewable synthetic e-LNG projects, methane slip and much more.



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.

Newtonstraat 17

1704 SB

Heerhugowaard

The Netherlands

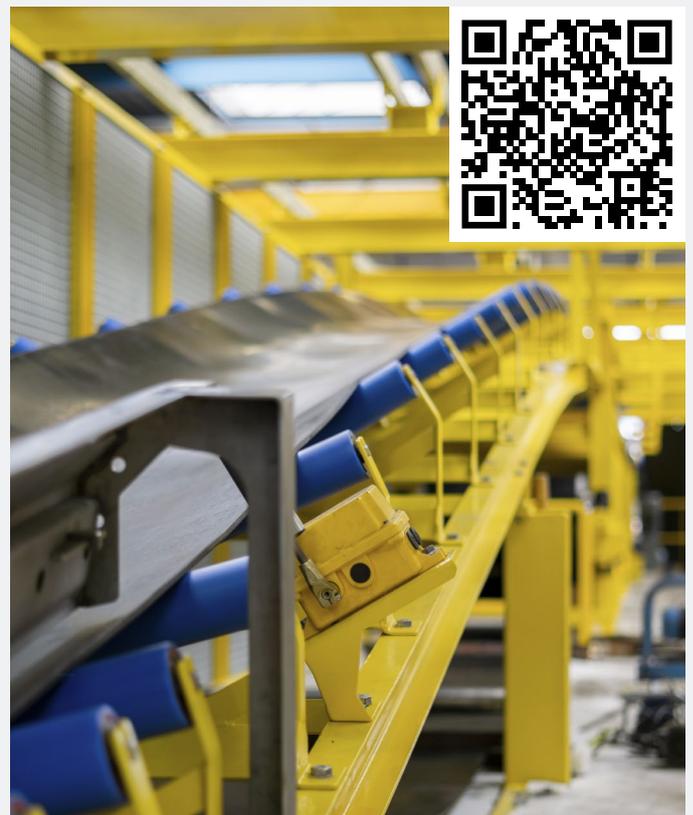
Tel: +31 (0)72 5716688

Email: info@heilighbv.com

heilighbv.com



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



ONWARDS AND UPWARDS

Improving levels of service and efficiency is a key element of the crane and grab segment and many market players have been co-operating to provide an enhanced service for their customers



H *heavy lift and transport service provider Mammoet has announced a strategic partnership with Bay Crane Services, a leader in the crane rental, specialised transportation and construction industries in the north eastern United States.*

After working together on several projects dating back 25 years, the partnership will focus on servicing the renewable offshore wind requirements of that area of the US.

Rick Bohne, director of sales and marketing for Mammoet in the US and Mexico, says: "Establishing this partnership meets our goal of bringing the best level of service to our client-partners. As a global player, we recognise the importance of leveraging like-minded local leaders in this industry to ensure every possible advantage, local and global, is available to serve our clients' project needs."

Kenneth Bernardo, Bay Crane Companies CEO, adds: "Mammoet and Bay Crane have worked together on a multitude of projects in the north east region over the years. This strategic partnership presents clear advantages to both companies, as well as the offshore industry. We are excited to offer up our

portfolio of both global and regional market experience to provide safe, efficient, and innovative solutions to the renewable energy industry in the US."

Dogger Bank development

Mammoet UK, based in Thornaby, Teesside, has been chosen by GE Renewable Energy to supply onshore heavy lifting and transport for the staging and assembly of turbine components for Dogger Bank Wind Farm. Dogger Bank Wind Farm is a joint venture between SSE Renewables, Equinor and Vårgrønn.

Mammoet will employ multiple lifting and transport crews for simultaneous operations to support with the loading of equipment and tower assembly in the marshalling harbour, a key piece in constructing the project. The team will utilise cranes and self-propelled modular transporter axles at Able Seaton Port, the Dogger Bank Wind Farm marshalling harbour.

Work on preparing the marshalling harbour and receiving components started at the end of last year.

Nathan Fahey, GE project director for the Dogger Bank Wind Farm, says: "We are delighted to announce that we have selected Mammoet UK as our cranes and logistics supplier for the Dogger Bank Wind Farm. The cranes and associated equipment the company will provide and operate for us will be essential to the smooth operation of our marshalling harbour on Teesside, where 277 sets of blades, nacelles and towers of our Haliade-X wind turbines will be erected and transit over the course of the project."

Darren Adams, Mammoet's group commercial officer, adds: "Mammoet is delighted to work in close partnership with GE to help build the world's largest offshore wind farm. The project is a large step towards a net-zero future, delivering a boost for the local economy and wider 2030 and 2050 emissions targets.

"By utilising Mammoet's strong presence in the UK, headquartered from Teesside, backed up by its network of international engineering hubs, we will enable the delivery of clean,

cost-efficient energy to around six million homes."

Simon Bailey, commercial director for Dogger Bank Wind Farm, adds: "We're delighted to see another company from the north-east of England winning valuable contracts in our supply chain and playing a significant role in the construction of the world's largest offshore wind farm. We look forward to working with GE and Mammoet on achieving this exciting milestone at Able Seaton."

GE Renewable Energy announced in May 2021 that it had finalised all supply contracts for the 3.6GW Dogger Bank Offshore Wind Farm, due to become the largest offshore wind farm in the world upon completion.

Dogger Bank Wind Farm is located more than 130 km off the north-east coast of England and each phase will be able to produce 6TWh of renewable electricity, totalling 18TWh annually, when complete in 2026 – equivalent to powering the equivalent of six million UK homes each year or around 5% of the UK's electricity demand. Due to its size and scale, the site is being built in three consecutive phases: Dogger Bank A, Dogger Bank B and Dogger Bank C.

Technology increases accuracy

Meanwhile, Mammoet has developed a new technology platform that reports emissions data from heavy lifting equipment in real time. The system allows customers to accurately predict and monitor carbon output arising from large heavy lifting and transport projects.

Project planners looking to meet increasingly strict emissions regulations have needed to rely on estimates of total emissions, drawn from the make and model of equipment involved and how long they have been used. Mammoet's new technology increases the accuracy of this reporting by using data taken directly from the embedded electronics of on-site equipment.

The system, codenamed Daisy, transmits this data over mobile networks from local devices attached to the embedded systems of cranes and SPMT combinations. This can then be accessed

from any worldwide location, providing a clear audit trail for governments and other authorities.

This allows organisations working at locations where emissions are regulated tightly, such as inner cities, tunnels and indoor facilities, to minimise emissions at the project site. Analysis of this data will uncover new ways to cut down emissions-driving activity, for example by reducing idling time during projects.

The system is currently in use in the Netherlands, monitoring the carbon emissions of a fleet of mobile cranes. It is planned for rollout across Mammoet projects according to customer demand during 2023.

Jacques Stoof, head of innovation at Mammoet, comments: "Daisy will be the most advanced system to accurately report CO₂, NOx and NH₃ emissions at equipment level at the operating location, improving on the generic approach the industry is currently using."

"Based on the actual reported emissions, clients will be given the option to choose for a more sustainable, less emitting fuel type in order to minimise their emissions footprint during construction."

This development is another aspect of Mammoet's commitment to enabling the energy transition, providing the tools and insight needed by its customers to work towards key 2030 and 2050 climate targets.

Mathias Hoogstra, head of sustainability at Mammoet, adds: "With this significant step, we are able to assist clients and empower our own reduction ambitions. Daisy's factual emissions data allows us to take smarter decisions, reducing our footprint in a more efficient manner. This helps our clients and ensures we achieve our sustainability goals towards 2030."

The launch of Daisy follows Mammoet's recently-announced partnership agreement with energy company Vattenfall to develop new wind farm cranes powered from renewable sources, and the completion of the world's first heavy transport project undertaken using a fully electric-driven SPMT combination.

INDIAN INITIATIVE

Konecranes and Larsen and Toubro (L&T), a large Indian multinational company, have signed a licensing agreement for the manufacturing and distribution of Konecranes port cranes in India, expanding Konecranes' footprint in this market.

The first products have been sold under this agreement: two shipyard jib cranes will be delivered to the Cochin Shipyard in Cochin, Kerala province.

The agreement between Konecranes and L&T's minerals and metals business unit covers manually operated ship-to-shore cranes, rubber-tyred gantry cranes and rail-mounted gantry cranes across Konecranes' brand portfolio. Konecranes shipyard cranes are also included.

After-sales support will be provided by Konecranes and L&T in cooperation.

The arrangement will help both L&T and Konecranes to smoothly introduce technologically superior and proven products and services to the Indian ports and shipyard market. It will also support the Indian government's Make in India initiative, while Konecranes will be able to grow the brand presence of its ports offering in India.

The first order under this agreement was from Cochin Shipyard for two shipyard jib cranes, received in November of 2022. The cranes are level-luffing, single-boom jib cranes, the first with a 75t lifting capacity and 85m outreach, and the second with a 40t lifting capacity and 75m outreach. L&T will manufacture them at its Kanchipuram factory in Tamil Nadu

province using design and components from Konecranes, with Konecranes supervising the entire delivery. The cranes will be delivered within 24 months to the Cochin Shipyard.

"This agreement will broaden the reach of Konecranes port cranes in India, a dynamic market with great potential," says Shyam Pathak, sales director south Asia for Port Solutions, Konecranes. "We look forward to working with L&T to build a customer base that will benefit from our specialist expertise and global service network."

Nassau order on track

Nassau Container Port (NCP) has ordered an eco-efficient Generation 6 Konecranes Gottwald mobile harbour crane for container handling at its terminal at Arawak Cay, Nassau, Bahamas. The order was booked in November 2022 and the crane will be delivered in July this year.

With a joint government and private shareholding, Arawak Port Development and Nassau Container Port (NCP) plan to facilitate port growth and business expansion in the region. Its NCP operations play a significant role in this task as the largest container handling operation in Nassau, Bahamas.

Throughput has recovered to pre-pandemic levels and NCP expects this upward trend to continue. So, it decided to invest in a new crane with the advanced technology necessary to simultaneously increase capacity and take them further along the path to electrification.

"Terminal development is a continuous process, and we're interested in the best available lifting equipment that suits our needs both now and in the future," says Dion Bethel, president/CFO of APD. "Konecranes was able to offer us an easily adaptable, high-performance hybrid solution that will help us build even more capacity as we ready our port for shore power and greater energy efficiency. We also appreciate Konecranes' digital services, which provide deep insight into the crane's performance and condition.

NCP chose Truconnect® remote monitoring with the customer web portal yourKonecranes. The crane sends its data via a secure mobile connection to the Konecranes' cloud service, accessible through yourKonecranes. Here customers get a full overview of their crane, with information such as the exact location of the crane on the quay, its fuel consumption and handling performance, even if it is offline. NCP can receive a detailed analysis of every load cycle and diagnostic message.

"Generation 6 Konecranes Gottwald mobile harbour cranes are building a strong reputation around the world for the many benefits they bring to port facilities. We're excited that NCP has chosen us for their new container handling crane as they develop their terminal. This order confirms their confidence in the technology of the Generation 6 crane with its high productivity, reliability and eco-efficiency," says Alan Garcia, sales manager, port solutions at Konecranes.



LOG GRABS SUCCESS

In New Zealand, Napier Port's senior crane operators recently safely and successfully loaded logs on to the *Norse Mobile* bulk cargo vessel using log grabs custom-designed and built for use on the port's existing mobile harbour cranes.

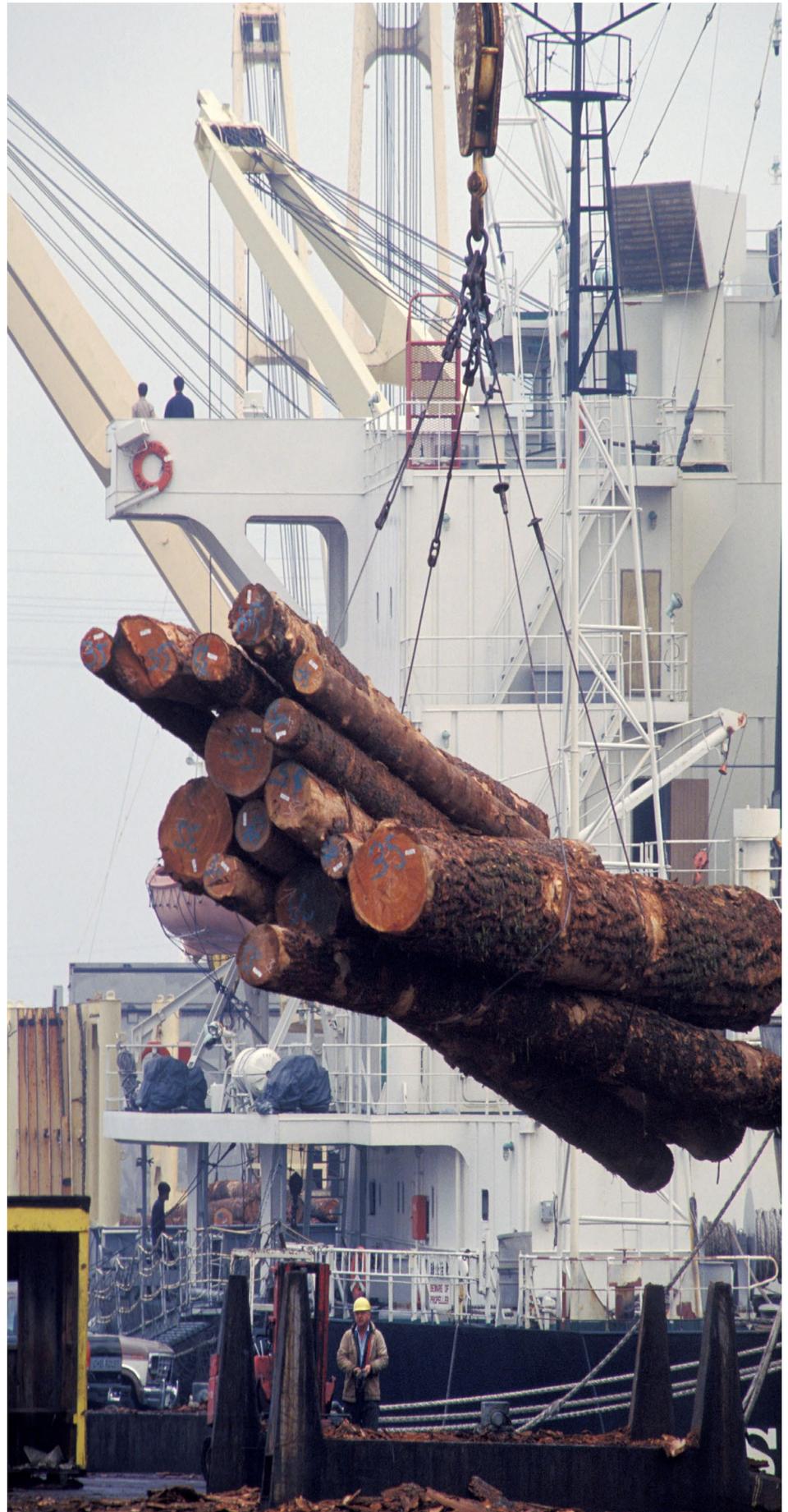
Napier Port CEO Todd Dawson was on board the *Norse Mobile* to observe the initial operational trial and was very pleased to watch this new infrastructure in action.

Dawson says: "Our new log grabs are a significant safety improvement for log-loading operations on port and are set to enable operational efficiencies with an increased throughput of logs. Not only is it a boost in productivity for vessels calling to Napier, loading logs on to charter vessels also represents a new service offering and revenue stream to Napier Port."

"Alongside our new log-debarking facility, and other infrastructure projects in the pipeline, we are continuing to develop and invest in efficient cargo solutions for our customers and create greater value right across our operations."

The port's bulk cargo and crane teams have worked closely with Page Macrae Engineering over the past 18 months to develop the prototype log grabs to suit the specific operational requirements at Napier Port. Introducing log grab infrastructure to port operations reduces the need to rely on a ship's own smaller cranes to load logs and will also allow Napier to welcome log vessels that don't have cranes at all.

"Over the past few months, we've also worked collaboratively with our stevedoring tenant C3 to develop, plan and carry out this trial. A big thank you to their local operations team who have been genuine partners throughout this project. From an operational standpoint the feedback on the ground has been fantastic and we're excited to fine-tune this new operation going forward," added Dawson.



NEGRINI: ADDING REMOTE ASSETS

COMPANY NEWS

Negrini has introduced a new tool to further enhance its extensive range of electro hydraulic grabs. Remote Control Industria 4.0 is ideal for routine maintenance, as well as to improve the efficiency and operation of customers' production processes.

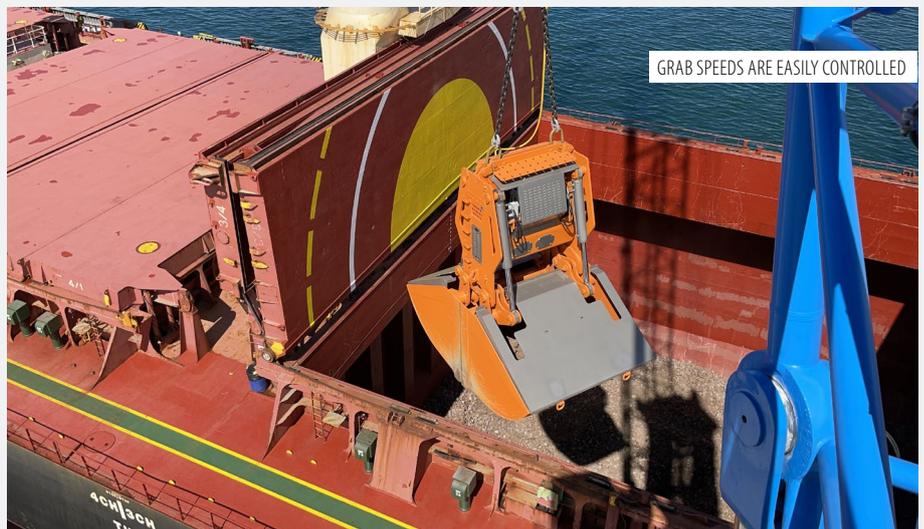
STATE-OF-THE-ART FEATURES

- » Monitoring and control of processes in electro-hydraulic equipment
- » Real-time scans and diagnostics
- » System communication via wi-fi or data sim
- » Notifications via email, sms or smartphone, tablet and PC
- » Preliminary production analysis
- » Routine maintenance alert
- » Failure prediction
- » Immediate alarm in case of failure or malfunction

THE SMART GRAB

With Remote Control Industria 4.0 installed, the grab parameters automatically adapt to the type of material being handled without the need for human intervention, therefore maximising production and reducing costs.

In the presence of high-density materials such as mineral, the grab speed is reduced and the hydraulic pressure is increased – parameters that are not suited to lighter materials such as coal or cereals, where we see a change in speed



and reduction in hydraulic pressure – thereby reducing energy wastage and wear.

The most important advantage offered by the Remote Control Industria 4.0 device installed on Negrini's equipment concerns the processing of data, thus allowing preliminary production analysis and failure prediction. Notifications are sent via email and sms and each time an event occurs, either an incident, arrest or maintenance request is recorded.

Costly machine downtime is therefore avoided while maximising production, reducing periods of non-activity and minimising expenses normally incurred by corrective maintenance works. The client and Negrini Srl have total control over the condition of the equipment via wi-fi or a data sim, using a smartphone, tablet or PC, and will receive all notifications sent by the system so as to always be informed of machine requests and events.

For more information, visit negrini.org



Negrini company, established in 1967, specializes in engineering and manufacturing a comprehensive range of grabs and buckets for rope machines and crawler mounted cranes; they are employed to do many jobs. Negrini buckets and grabs are very well-known for quality as well as for the very accurate and skilful engineering work; in fact Negrini supports their clients by analyzing the job to be done and, if needed, by adjusting the standard design of grabs and buckets to enhance their performance once in operation.

VIA TORRICELLI 4 - CASTELFRANCO E. (MO) - ITALY



www.negrini.org

Since 1908,
taking the best
from the past
to build a
better future.

Providing reliable and innovative
solutions for our customers
is our mission since 1908.

▲
Bedeschi 600t/h
shiploader for urea with
"sandwich conveyor"
technology installed

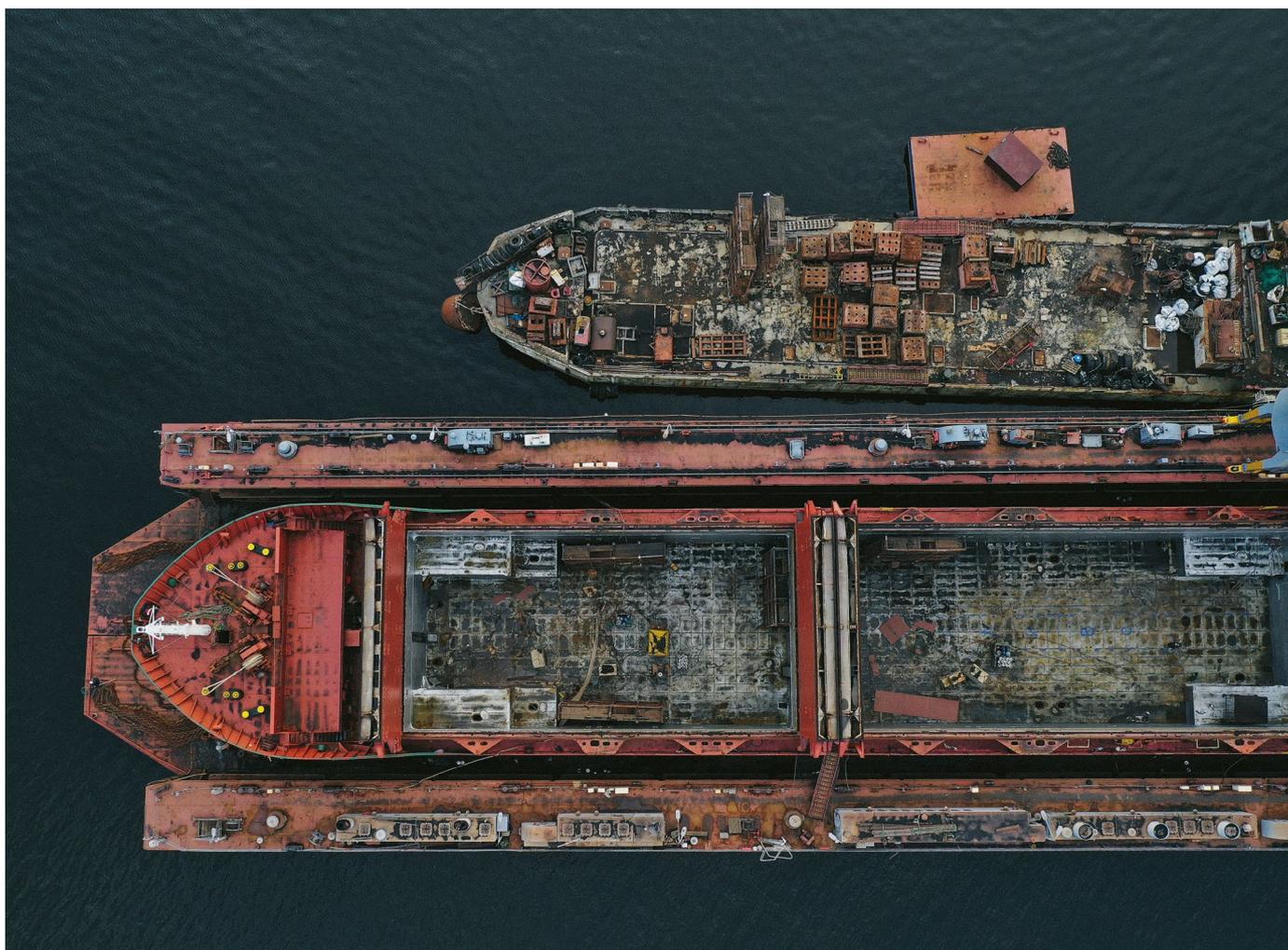
www.bedeschi.com



SEEKING SUBSTITUTES

BY BASIL KARATZAS

Ever since the invasion of Ukraine by Russia one year ago, one of the greatest material concerns has been about the grain trade out of the Black Sea



Ukraine's and Russia's grain exports are considered the world's breadbasket and make up almost one-third of the world's grain trade.

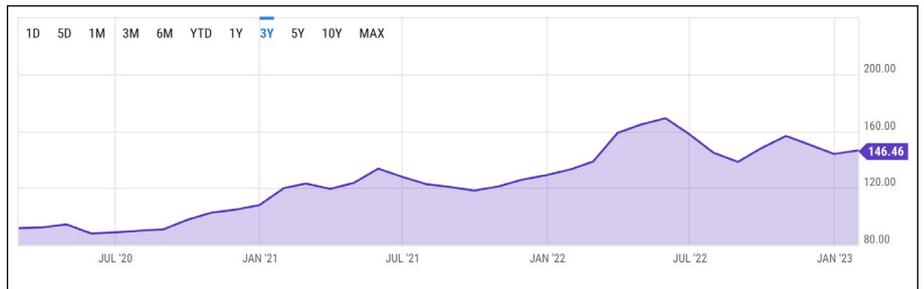
Grain exports from the Black Sea have been affected as harvests in the region have been directly affected by the war (think of farmland, farmers, and farming equipment) and also inland transport (as grains are generally shipped by trucks and small vessels down the rivers to seaports for exports) and sea-going transport (with the Black Sea mined, it's effectively a war zone that requires war insurance premiums and nerves of steel – not of interest to many a shipowner).

There have been well-established trading patterns and trading arrangements between grain exporters in the region and importers globally that count their business relationships in terms of decades. A great deal of the grain exports logically heads to countries in the region such as Egypt, whereby approximately 59% of its grain imports (approximately \$1.6bn worth) come from the Black Sea; likewise, for Turkey and its approximately \$1.4bn in grain imports or 62% of its grain imports).

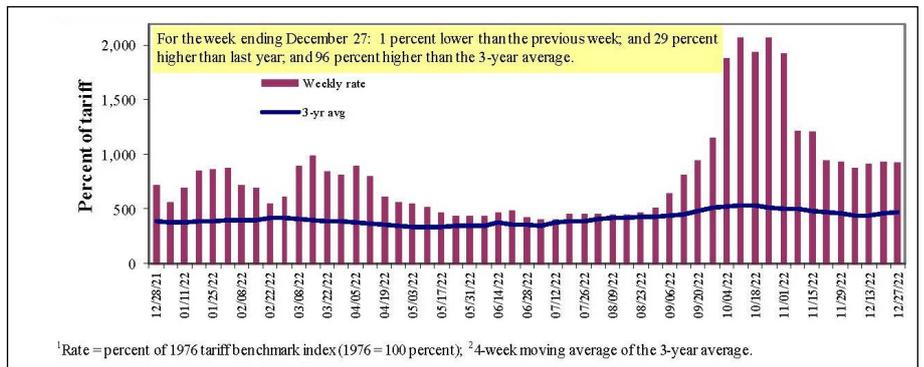
There is a long list of grain importing countries from the Black Sea and although their imports may amount to a few decades of millions of dollars (for example \$20ml for Namibia, \$11m for Madagascar), the importance of such trade is much more critical for these countries. They are generally less developed countries, and economically and politically and commercially more dependent on the “kindness of strangers” to source and pay for such imports.

Given that Russia is a resource economy, the war with Ukraine has affected a long list of commodities, ranging from the most visible energy products (such as crude oil and natural gas) to phosphates and fertilisers – and, of course, grains.

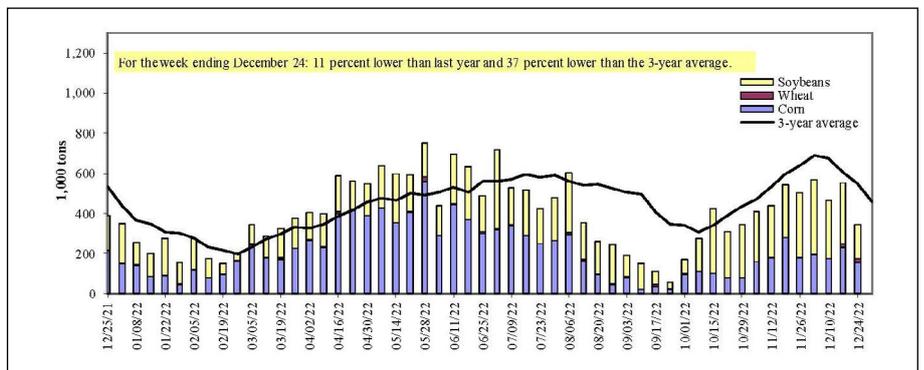
However, there is a tangible difference between energy sources/commodities and grains: as painful as the lack of the former may be on an economy, life can go on, while lack of grains is a matter of sustenance for livestock, people and human society.



GRAPH 1



GRAPH 2



GRAPH 3

MARINE APPRAISERS, SURVEYORS & BROKERS

- SHIP-BROKERS, VESSEL SALES & AUCTIONS, JUDICIAL SALES
- SHIPPING FINANCE ADVISORY / BUSINESS BROKERS
- BROWN / BLUE WATER, JONES ACT AND INTERNATIONAL SHIPPING
- MARINE APPRAISERS (ASA)
- MARINE SURVEYORS (CMS-NAMS)



KARATZAS
MARINE ADVISORS & Co.

Basil Karatzas
(713) 545-5990
info@bmkaratzas.com

WWW.KARATZAS.COM

WWW.KARATZAS.AUCTION

The impact of the war on the energy markets has monopolised the front pages since the inception of the war, while grains have been the subject of trade and specialised investment press.

The immediate reaction to the threat of reduced grains exports from the Black Sea was that other grain-producing countries would effortlessly step up to fill the trade gap, namely, countries in both South (Argentina and Brazil) and North America (US and Canada), as all these countries have been the traditional mainstream agricultural products exporters competing in the world markets.

For those in the maritime industry, the joy of such international substitution could not be contained, as ton-mile (distance per unit of volume transported) would increase materially, simply by virtue of shipping the commodity over longer distances (US Gulf to Egypt is a 30-day voyage versus a 10-day voyage from Odessa).

A year after the invasion, there is enough stock of grain trade patterns to generate a quick summary of the grain markets:

It is said that nothing happens in vacuum, and indeed, 2022 was a peculiar year in terms of weather patterns as

well. Both South and North America experienced unusual circumstances of drought, so much so that not only harvesting was below expectations, but also navigation itself was also affected. In Argentina, Paraná River experienced its lowest watermarks of the past 77 years, curtailing exports by 25% since dry-bulk vessels could not be loaded to their marks due to draft restrictions.

In North America, the mighty Mississippi, the world's fourth largest river, experienced low water levels at the end of summer 2022, especially in the Memphis region, forcing hopper barges to be shipped partially loaded. As a result, US grain exports have not lived up to expectations in 2022.

As Graph 1 shows, inland barge movement in the lower Mississippi River for grains for export have been lower than the three-year average, especially for corn, based on data from the US Department of Agriculture.

Graph 2 shows how inland barge freight costs have moved materially above the three-year average, reflecting the higher cost of fuel and also the higher costs of transport due to barge under-utilisation and barge-dislocation.

The international price of grain skyrocketed upon the news of the Russian

invasion (along with the price of any other commodity). However, since the second half of 2022, grain pricing in the world markets has gradually stabilised, albeit at historically elevated levels, (as shown in Graph 3, the Grains Price Index based on World Bank data) based on the expectations that still world grain production and stocks are sufficiently strong to feed the world in 2023.

We want to think there will be plenty of grains as essential food material for humans (and also as feedstock for livestock) to avert any famine in our times. On the other hand, one has to be very cognisant that at present, there is minimal room for error.

With the world population growing, increasing demand for grains as food, changing weather patterns affecting harvesting and shipping, and the world's Black Sea grains exports under continuous threat, it will not take much to throw the market off balance.

Basil M Karatzas is the CEO of Karatzas Marine Advisors and Co, a shipping finance advisory, marine appraisals and surveys, and ship-brokerage firm based in New York. karatzas.com



BEDESCHI: LEADING THE WAY IN THE FERTILISER INDUSTRY

COMPANY NEWS

The fertiliser market is facing exponential growth due to the growing global population and continuous demand for food production. The covid-19 outbreak affected several sectors in the handling industry, including fertilisers. However, in the past year and a half, demand has increased, thus stabilising the market.

The fertiliser industry includes a wide variety of materials, such as urea ammonium nitrate, monoammonium phosphate, diammonium phosphate, potassium chloride and sulphur. The challenge in handling fertiliser is that this type of

material is corrosive, generates dust, easily breaks and is hygroscopic.

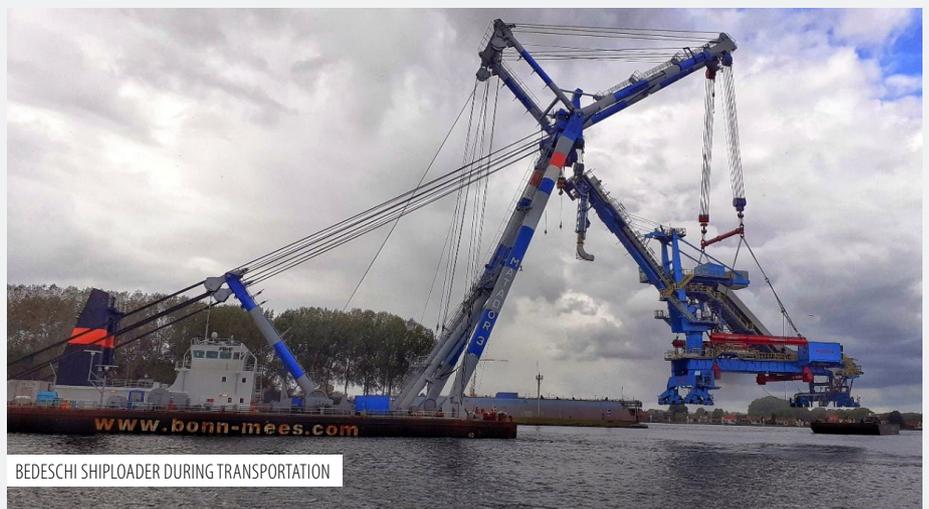
Bedeschi is renowned for its outstanding experience and knowledge of every type of fertiliser. When it comes to handling the product, Bedeschi always takes into consideration the different measures available to preserve the material.

Since fertiliser is highly corrosive, the company tends to use, as much as possible, materials that won't be affected, such as stainless steel or plastic components made of glass-reinforced plastic, with high-durability paint for structural parts.

Fertiliser easily breaks, so it is essential to meet the highest environmental standards and to guarantee gentle treatment of the material. Bedeschi has dedicated special attention and in-depth studies to the loading chutes, for example, with the controlled flow chute to allow vessel loading, the speed is kept below acceptable values and the dropping height is limited to avoid degradation in cargo quality. In addition, to avoid dust that is generated while handling the material, not only is the choice of chute extremely important, but also the belt speed, with the use of a



BEDESCHI 1000T/H SHIPLOADER FOR FERTILISER INSTALLED IN INDONESIA



BEDESCHI SHIPLOADER DURING TRANSPORTATION

pipe conveyor and enclosed conveyor and suppression system for dust control.

Fertilisers are hygroscopic materials, so protecting them from water or rain is extremely important. For this reason, Bedeschi always uses an enclosed or pipe conveyor when handling the product.

Thanks to the outstanding achievements of its research and development department, which is particularly focused on green technologies, Bedeschi is able to design state-of-the-art systems and environmentally friendly solutions to meet clients' needs. Long-term collaborations with industry giants such as YARA and OCP prove the quality of Bedeschi equipment.

The following are some solutions supplied by Bedeschi to the fertiliser sector

YARA SLUISKIL, HOLLAND

Bedeschi manufactured for YARA's terminal in Holland a SHL 28/1200 shiploader for urea with a loading capacity of 600t/h. The shiploader has recently been delivered from Mammoet's quay to Yara's quay.

The shiploader is now installed in YARA's dock and is in operation; the most significant technological innovation of the whole project is the "sandwich conveyor" placed on the main gantry to overcome

the limits of the incline required to connect the feeding point at the jetty gallery level to the shiploader boom."

The term "sandwich conveyor" refers to two belts placed one on the top of the other in order to gently convey the material inside an enclosed channel. The advantages of this application are clear: first of all, the possibility of overcoming steep slopes at the maximum incline angle granted by conventional conveyors.

Further advantages include environmental safety due to the fact that the material is completely enclosed between the two belt loops, meaning the emission of dust into the air is unlikely to happen.

Bedeschi has enjoyed a long-term partnership with YARA, already supplying one 250t/h shiploader for urea operating in France, a 500t/h shiploader to handle various types of fertiliser operating in Italy and one 500t/h shiploader for urea operating in Germany.

OCP, MOROCCO

OCP, the world leader in phosphates, has chosen Bedeschi again as material handling partner for a new project. Bedeschi will supply three new automated storages: two for fertiliser and one for sulphur, for a global storage capacity of 300,000 tons of material.

The new equipment will be installed in the chemical complex of Phosboucraa, 30km from the city of Laayoune, in the South of Morocco.

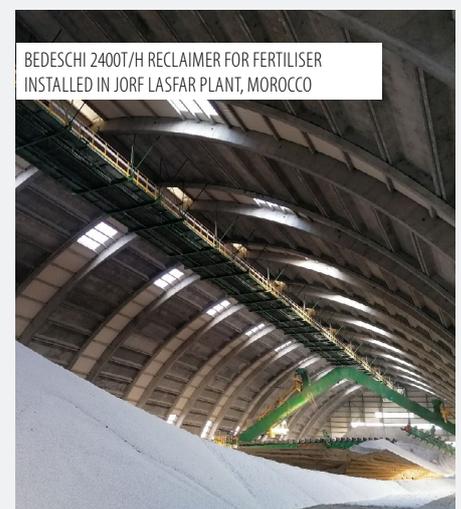
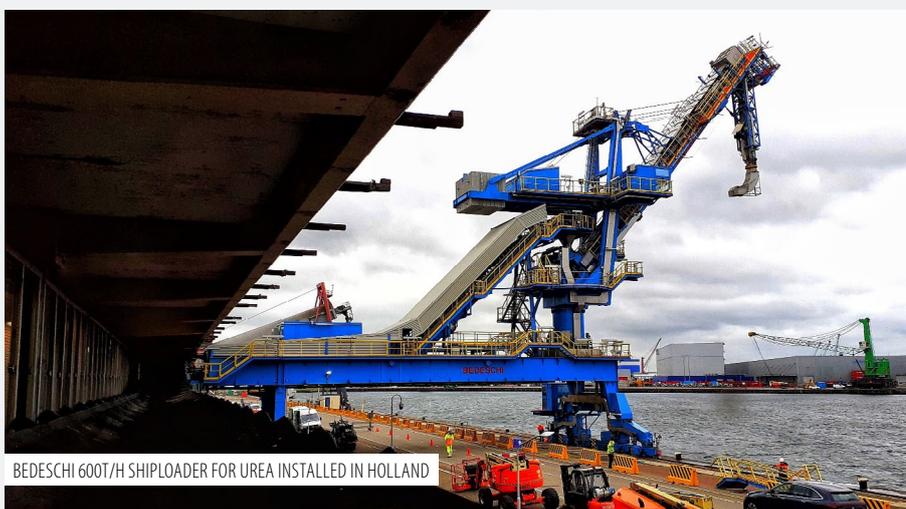
The new project is of strategic importance for the development of the industrial axis known as "southern axe". The supply consists of material handling equipment for the storage of sulphur in import and the storage of fertiliser in export. Bedeschi will supply, among other things, three trippers, three reclaimers and six conveyor belts with a capacity of up to 2,000t/h. The equipment will be similar to that already supplied to OCP for the Jorf Lasfar plant in Morocco.

BARATA, INDONESIA

The supply of a SHL 25/1400 shiploader, which is now operating on the Demarga Jetty in Gresik, Indonesia, to load fertilisers (NPK, NPS) at a capacity of 1,000t/h on vessels up to 30,000 DWT.

The order has been finalised with Barata Indonesia, an engineering company that took care of the civil works. The end user is PT Petrokimia Gresik, which has already chosen Bedeschi for a circular and a longitudinal storage with PAL PD built on the same site over the past five years.

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



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.

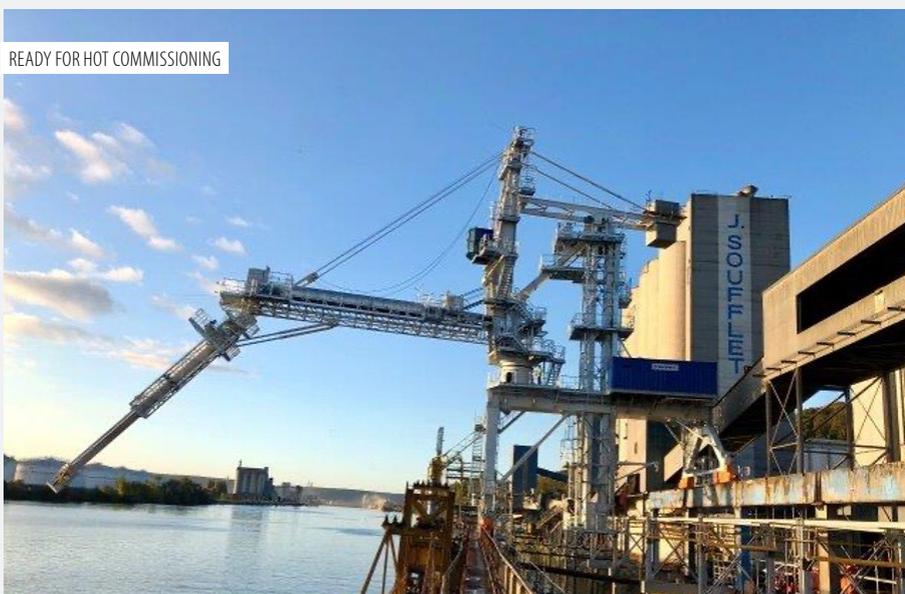
Heavy lift cranes set the shiploader into position at the site and Neuero was able to begin dry testing. The next step was hot commissioning after the site conveyor was ready.

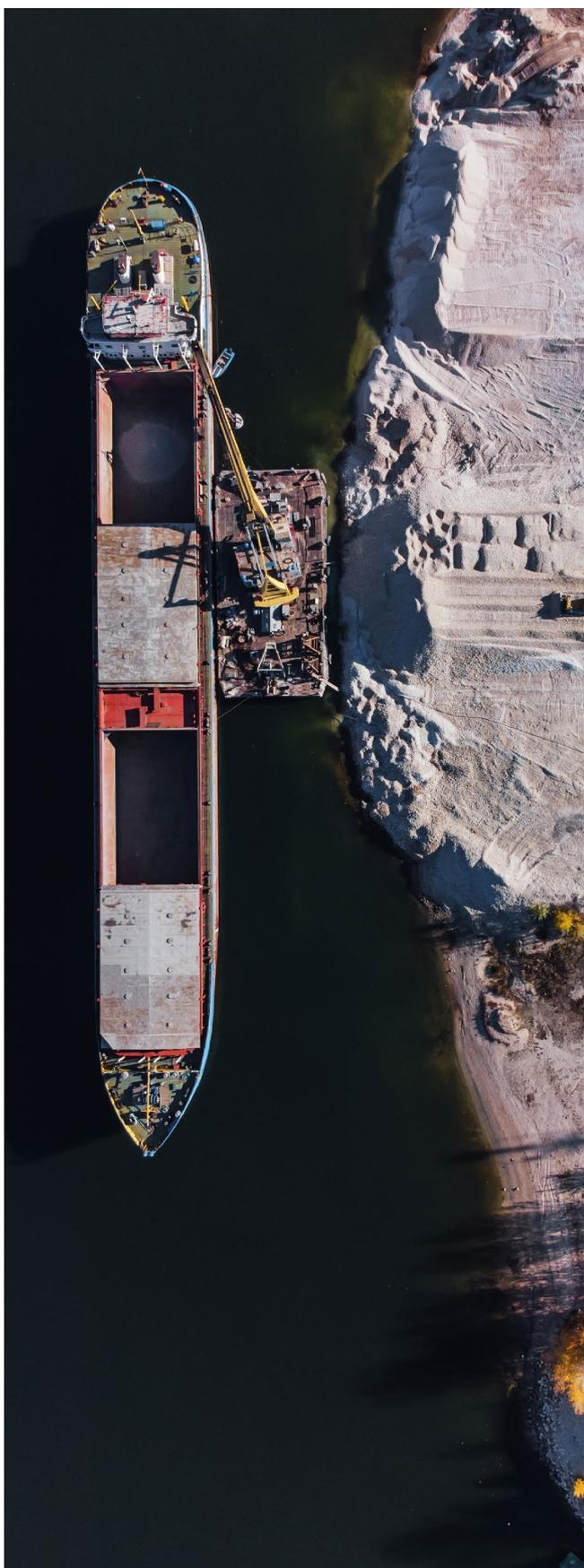
So what is the difference that makes the Kiko DSH operate so efficiently and with the highest environmental standards available today? The answer is a combination of mass flow and pendulum movements. The mass flow allows loading

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





HARD TRUTHS

Although it is likely to be a tricky year ahead for the cement industry, increased environmental awareness will help to give a boost to the sector

Cement producers are facing a difficult year in 2023, according to the World Cement Association (WCA), following the post-covid high demand of the past two years. According to WCA director Emir Adiguzel, a number of issues are set to come into play, including tighter monetary policies, increased freight rates and high costs or fluctuations in the cost of energy.

Speaking at the WCA's annual conference last year, he told delegates that aside from pressure pushing cement producers towards higher prices, multinational cement companies will continue to divest cement assets in emerging markets, which means that players in those markets, including China, will be able to acquire cheap European cement assets.

Middle-sized cement producers may also benefit from global multinational cement producers moving out of the market.

Delegates heard that the biggest limiting factor in decarbonising the cement industry is not technology, but the sector's drive to act now. The conference, which took place in Dubai, heard that there were many opportunities to reduce carbon emissions through product portfolio optimisation, using alternative fuels and calcined clay or belite cement. Economic incentives were another limiting factor, as cement emits more carbon than steel.

Governments need to increase incentives including carbon pricing and green procurement for public products in order to push change to happen faster, the conference heard.

HAZEMAG ON TARGET

In January 2022, Hazemag received an order to supply an Apron Feeder HAF 25142 and a primary Center Sizer HCS 1025 from one of the leading cement and aggregate producers around the world to ensure the continuous production of its facility in Florida.

This modular plant will process 2,000t/h coral limestone with flint and clay inclusions in the future. The feed size is up to 122cm and is crushed to 25cm.

A great deal of attention was paid not only to proven and reliable machine technology, but also to professional support in plant design.

Despite the difficult circumstances, the covid-19 pandemic and the war in Ukraine, production has been within the agreed timeframe and the equipment is now ready for delivery.

The new plant will go into operation before the end of this year.

DUST-FREE SOLUTION

Bruks Siwertell has delivered a new Siwertell road-mobile ship unloader for dust-free cement handling operations in Belle Chasse, Louisiana, US for returning customer, Cemex. The 10 000 S next-generation unit adds to a portfolio of Siwertell technology used by the Mexico-based multinational building materials company.

"We are the only company able to offer a mobile ship unloader around this size," explains Pedro Alfaro, Project Development Engineer, Bruks Siwertell. "This was a significant driver for the contract, along with our ability to deliver the unit within a short timeframe."

"The road-mobile system also offers a great deal of flexibility, enabling the operator to easily transport ship unloading capabilities between sites," Alfaro continues. "It is now working hard, and keeping up with significant rises in cement demands."

Siwertell screw-type technology has totally enclosed conveying lines, which ensure no spillage and keeps fugitive dust to an absolute minimum. "Environmental protection was another key element behind Siwertell technology being selected," he adds.

The ship unloader was delivered towards the end of 2022 and offers a continuous rated cement handling capacity of 300t/h and can discharge vessels up to 10,000 dwt.

CIRCULAR SYSTEMS

Cemex has announced the launch of Regenera, a business that provides circularity solutions across Europe, the Middle East and Africa (EMEA), including recovery, management, recycling, and co-processing of waste.

Regenera leverages Cemex's substantial international footprint and the ability of its production processes to use non-recyclable waste and industrial by-products as more sustainable substitutes for fossil fuels and natural raw materials. Regenera is actively working on several major projects across the EMEA region.

In France, Regenera operates a multi-service dock located in an industrial harbour in Paris offering a wide range of circular economy services to the construction industry. The company receives a variety of materials, including construction debris, excavated material and inert soil, which it sorts, processes, and transforms into recycled aggregates or inert material used to restore quarries.

In Egypt, Regenera has signed a three-year agreement with the NGO Very Nile to support waste removal efforts from the Nile River. The recovered non-recyclable materials will be used to substitute fossil fuels at Cemex's Assiut cement plant, with other materials being recycled or upcycled.

Additional projects are also underway in CEMEX's wider global business.

In Mexico, Regenera is already processing almost two million tons of waste streams per year, and is now working with the government of Mexico City on its "Zero Waste Plan". Meanwhile, in Colombia, Regenera has signed an agreement to work with Tetrapak, to receive and separate multilayer cartons at its facility and return those that can be reused or recycled.

Regenera aims to serve a diverse client base that includes industrial, manufacturing, construction and waste collection companies, NGOs, and governments. It provides sustainable solutions for three major waste streams: municipal and industrial, construction, demolition, and excavation (CDEW), and industrial byproducts.

Sergio Menendez, regional president for Cemex EMEA, comments: "Growing a circular economy is a key pillar of our dedicated climate action strategy, Future in Action, as it not only reduces waste being sent to landfill, but also helps to preserve natural resources and reduce emissions. The launch of Regenera is therefore the latest step in our efforts to be a net-zero CO₂ company globally by 2050."

"We believe that Cemex and other companies in the building materials industry can be a major contributor to a more circular society, and our role in utilising waste and by products is key to a greener economy."

Cemex's Future in Action programme is pioneering ways to increase the use of waste and residues as alternative raw materials and fuels. At the forefront of the circular economy in the construction value chain, Cemex is committed to achieving true carbon neutrality.



BEUMER: RELIABLE TRANSPORT COMES IN A U-SHAPE

COMPANY NEWS

Beumer's U-shape 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 ideal for the cement and mining industry, as well as in port terminals if high capacity is required with little space available.

The closed pipe conveyors are suitable to protect 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 larger 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 space available is restricted? "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 the pipe conveyor. Filarowski mentions an example: the pipe conveyor is a volumetric system. If we consider the starting basis of a tube diameter of 150 and a belt width of 600mm, the conveying capacity amounts to 100 cubic metres per hour. The P-U-shape conveyor achieves a capacity of 170 cubic metres with the same size. "Thus we can offer the customer approximately 70% higher conveying capacity".

COMPARING THE U-SHAPE CONVEYOR

The T-U-shape conveyor, on the contrary, is suitable in case the owner relies on the advantages of a troughed belt conveyor, but has to consider the 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 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," says Filarowski. "The bigger the troughed belt conveyor, the bigger the related space saving".

For more information, visit:
beumer.com



UNDERWATER ODYSSEY

Ensuring that paints and coatings are eco-friendly is a priority for manufacturers, as recent advances illustrate

Effective anti-fouling of vessels has always been a key element in improving the performance and therefore costs of operating vessels and there have been a number of advances by specialist companies in this respect.

For example, I-Tech's research and development team's efforts enhance the power of Selektope in biocidal antifouling coatings while opening up new route into foul release coatings.

Over the past five years, I-Tech's scientists have discovered new ways in which Selektope can be introduced to marine antifouling coatings in combination with other biocides with little or no effect on formulation chemistry or performance.

I-Tech has enhanced the performance of the technology in self-polishing co-polymer (SPC) marine coatings by improving the dispersion of the active substance. Positive static test results have also provided proof of concept that Selektope can be used in silicone-based foul release coatings, a new application area for the technology.

Selektope is an organic, non-metal biocide that prevents hard fouling. It repels barnacle larvae from a coated surface with non-lethal effect using a novel, biotechnological

approach achieved by the active agent medetomidine. Through natural receptor stimulation, the swimming legs of barnacle larva kick at a higher frequency so that they cannot attach to the coated surface.

Traditionally, Selektope is supplied in powder form for direct introduction to a paint batch during the production process. It can also be dissolved in solvent in-situ and then added to a paint batch in solution. Although the controlled release of Selektope in SPC coatings has proved successful using traditional methods with multiple products commercialised to date, I-Tech re-research and development efforts in the past few years have focused on further improving controlled release.

Silyl acrylate SPC coatings are generally sensitive and gelation and instability problems can arise if the paint products are stored for too long. Gelation in SPC coatings creates issues during the application process since paint with a higher viscosity can clog up the tip of the spraying nozzle, resulting in the paint not being sprayed well, or even at all.

If the paint is thinned to make it easier to spray on to a surface, it may no longer have the right properties, which could

influence the general performance of the coating.

Following two years of R&D work, I-Tech has obtained proof of concept that if Selektope is pre-adsorbed on a carrier compound, in this case zinc oxide, prior to being introduced to a paint matrix, the process of gelation is slowed, and the in-can stability of the silyl acrylate paint is improved. Also, antifouling performance is improved, owing to the improved dispersion of the biocide in the paint.

Also studied was the addition of Selektope to silicone-based foul release coatings via pre-adsorption on zinc oxide. If Selektope is not properly incorporated into a foul release coating matrix it will leach to the surface of the coating too fast. To-date, this has inhibited the use of Selektope in this antifouling coating type.

Static panel testing conducted off the west coast of Sweden has yielded strong, positive results and R&D efforts in this field of research are ongoing.

Test results showed that whereas undamaged foul release coatings are generally efficient at preventing fouling, damaged areas in foul release-coated surfaces are at high risk of biofouling accumulation. This demonstrated

that damaged foul release coating surfaces need additional biocidal protection against fouling.

Markus Hoffmann, technical director at I-Techm comments: "This work is significant for two reasons: enhancing the current use of Selektope in SPC coating types and opening up new routes for us to explore the use of this novel technology in foul release coatings.

"The fact that the addition of Selektope, pre-adsorbed on pigment particles does not require fundamental paint reformulation makes this R&D progression even more impactful since it can be adopted immediately by our customers. Our next steps will be to expand our knowledge base. We will also conduct further work to refine the process of adsorbing Selektope on zinc oxide and explore other pigments as potential carriers."

GIA EXPANSION

Two companies have become the newest members of The Global Industry Alliance (GIA) for Marine Biosafety – Armach Robotics and Jotun.

Armach Robotics, an in-water cleaning service provider, and Jotun, which manufactures coatings, join at the end of a busy year for the GIA.

Jotun will bring experience in antifouling coating technology, proactive in-water cleaning services and innovations in biofouling management.

Petter Korslund, regulatory affairs manager for Jotun, says: "GIA is an important industry initiative to work together and co-operate towards a more sustainable shipping industry. As a global leader in maritime coatings and clean hull solutions, it is our mission to contribute to cleaner hull on vessels, enabling the shipping industry's ambition for decarbonisation and biodiversity."

Armach Robotics will add to the Alliance's discussions and work, bringing its perspective of in-water cleaning services. Karl Lander, director - regulatory compliance and outreach at the firm, says: "Armach is excited to work with GIA and its partners on addressing the

negative impact biofouling has on the global shipping industry."

GIA is an initiative of the International Maritime Organization's GloFouling Partnerships project. It brings together private sector companies from a wide range of ocean-based industries, such as shipping, offshore oil and gas, technology research and fouling control systems manufacturers, including anti-fouling coatings, in-water cleaning systems, BioPass, filtration systems and ultrasonic.

Together, these respective sectors work towards sustainable and practical solutions that can facilitate the implementation of biofouling management regulations.

Biofouling is the accumulation of micro organisms, plants, algae, or small animals on ships' hulls and other wetted surfaces. It can create irreversible effects on marine biodiversity by introducing potentially invasive aquatic species into new environments. Biofouling also increases the drag of ships, forcing them to burn more fuel to maintain speed, thus contributing to higher greenhouse gas emissions.

The GIA has also published two reports on various aspects of biofouling.

The first analyses the impact of ships' biofouling on greenhouse gas (GHG) emissions. It found that keeping ships' hulls free from just a thin layer of slime could reduce a ship's GHG emissions by 25%.

The second study compares current and emerging regulations and practices for biofouling management.

In addition, the GIA has also released a short animation video to increase awareness of GHG and good biofouling management.

SEA ZERO GETS UNDERWAY

Paint manufacturer Jotun is one of the partners in the Sea Zero project Hurtigruten Norway started in spring 2022, with the aim of enabling zero-emission passenger and freight transport along the Norwegian coast by 2030.

Together with 13 partners, Hurtigruten has been granted NOK 67m from Grønn Plattform, which contributes

to research and innovation-driven green transformation and lower greenhouse gas emissions, and is managed by the Research Council, Innovation Norway and Siva.

With the funding, all the partners have planned to start the research and development part of the project early this year.

ENVIRONMENTAL IMPACTS

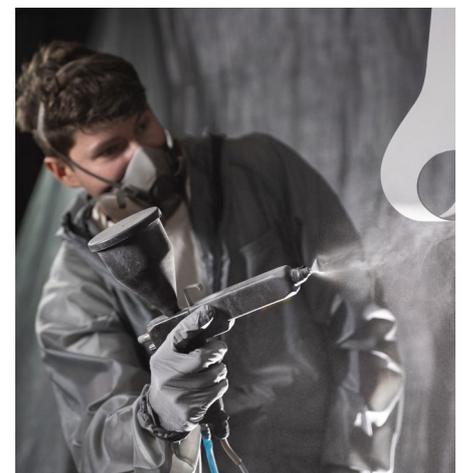
Reducing environmental impact and operating costs are a major focus for shipping companies globally. Selecting the right underwater coating technology is critical in reducing costs and environmental impact, while maintaining vessel efficiency.

Hamburg-based Pronav Ship Management operates a fleet of several liquefied natural gas (LNG) carriers, including four Q-Flex LNG vessels and two conventional, 145,000m³ capacity LNG vessels. All six vessels are coated with Intersleek biocide-free technology.

By using Intersleek technology, the environmental impact of these vessels has been significantly reduced compared with similar vessels coated with biocide-containing technology.

An evaluation has been carried out on the reduction in paint volume, volatile organic compound content and biocide release.

Utilising biocide-free technology also reduces exposure of personnel during coating operations and minimises cost and time in drydock due to the reduced number of coats.



SAFETY IN THE SPOTLIGHT

As well as the risks on board ships, changing climatic conditions are adding new hazards to ocean-going traffic and ports alike



Nearly nine in 10 major ports globally are exposed to damaging climate hazards, resulting in escalating economic impacts on global trade, according to new research from the University of Oxford's Environmental Change Institute (ECI).

Ports are crucial for the economy; they handle the vast majority of globe trade, are important hubs for industry and transport, and large providers of employment. But, by their very nature, ports are located in hazard-prone areas along the coast and close to rivers – exposed to storm and floods – and will have to cope with sea level rise and more severe storms because of climate change.

The research found 86% of all ports are exposed to more than three types of climatic and geophysical hazards.

This could cause physical damages to port infrastructure and disrupt port operations – which will have far-reaching consequences.

As a measure of how big the problems could be, Hurricane Katrina (2005) shut down three ports in the US that handle almost half the country's agricultural exports. And the 2011

Tōhoku earthquake and tsunami damaged maritime assets worth \$12bn. Nevertheless, the climate risks faced by ports have not been quantified on a global scale – until now.

In the study, published in Communications Earth and Environment, researchers from the ECI provide a detailed picture of climate risks for 1,340 of the most important ports globally. It combines a new geospatial database of port infrastructure assets with the most detailed available information on natural hazards, including earthquakes, cyclones and flooding, as well as localised information on “marine extremes” (wind speeds, waves, temperature, overtopping).

“We found 86% of all ports are exposed to more than three types of climatic and geophysical hazards,” says research lead Jasper Verschuur. “Extreme conditions at sea (for example storms) are expected to cause operational disruptions to around 40% of ports globally.

“What’s more, ports are exposed to other hazards, including river flooding and earthquakes, so port designers and operators have to take multiple hazards into consideration.

“That’s not always happening at the moment. For instance, the foundations of quay walls need careful consideration when exposed to earthquakes, the orientation and design of breakwaters when exposed to extreme waves and surges, and the drainage system when exposed to fluvial and pluvial flooding. If that doesn’t happen, we could see major disruptions to global trade and supply chains.”

On top of the physical damages, port downtime associated with these natural hazards puts trade worth \$67bn at-risk every year.

The largest climate risks are faced by large ports in Asia, the Gulf of Mexico and those in Western Europe. However, despite the absolute risk being particularly large in high-income countries, the impacts could be greatest in middle income countries’ ports.

The climate risk totals \$7.6bn per year, most of which is attributed to tropical

cyclones and river flooding of ports. This number is more than half as large as a previous estimate of the climate risk of road and rail infrastructure on a global scale, illustrating that, although ports only encompass relatively small areas, the high value and density of assets can contribute to the climate risk on a national and global scale.

On top of the physical damages, port downtime associated with these natural hazards puts trade worth \$67bn at-risk every year, which could result in costly delays, revenue losses, and impacts to the wider economy.

Large ports in upper middle and high-income countries need to make sizeable investments to manage their risk in light of increasing climate change, which could become prohibitively expensive.

On the other hand, infrastructure upgrades are needed to protect small ports in low-income countries from hazard impacts and frequent disruptions, which can have systemic impacts to economies they serve. At these ports, the impacts of climate change on economic activity can be reduced by improvements to infrastructure to make them more disaster-resilient and ensure year-round operations.

The study shows ports are at the forefront of climate impacts. It underlines adaptation of ports is urgently needed. Verschuur says: “Luckily, initiatives are ongoing to upgrade outdated and inefficient port infrastructure at many ports. However, these efforts fall short given the expected climate change challenges ports will face over the next few decades.

“Our paper allows organisations to prioritise global investments to adapt ports, as well as help identify the most suitable interventions.

“Altogether, our study shows ports are at the forefront of climate impacts. It underlines adaptation of ports is urgently needed, and quantified risk analysis, as presented in our paper, can help in prioritising investments and help make the business case to accelerate adaptation finance.”

AMMONIUM NITRATE RISKS

Global cargo handling association ICHCA International focuses on helping ships transporting ammonium nitrate to manage risks in a whitepaper detailing guidance for fire prevention and mitigation.

The risks posed by poor conditions of storage of this common compound, which is used extensively in the fertilisers and explosives industries, have been well documented, but awareness of the dangers of fire during transportation by sea is less well known.

The objective of the guide, *Ammonium Nitrate Fire Risk on Board Ships*, is to outline best practice with respect to the management of risk on vessels chartered to ship the compound through ports around the world.

The whitepaper outlines in detail ammonium nitrate’s peculiar reactions to heat and subsequent conflagration, as well as the nature of its decomposition. These characteristics mean that the specifications of vessels’ equipment, including deck cranes, hatch covers, hold linings, fuel tanks and pumps, also forklifts and other handling devices, must be precise. The whitepaper offers comprehensive guidance on these particulars.

Above all, from a fire prevention point of view, emphasis is put on compliance with the International Maritime Dangerous Goods Code, which typically requires ammonium nitrate stowage on deck only. The Code does, however, allow an exception for certain forms of the compound and fertiliser containing it to be stowed below deck. The rules for this are outlined in clause 7.6.2.8.4.

“This seemingly unremarkable clause is in fact crucial to safe shipping of ammonium nitrate,” explains the paper’s lead author Brian Devaraj. “7.6.2.8.4 states that certain UN Numbers of the product may be stowed under deck in a clean cargo space capable of being opened in an emergency, including need to open hatches in case of fire to provide maximum ventilation and to apply water. This of course precludes a hold containing ammonium nitrate to be over-stowed with another cargo.”

The intention of the clause is that all a vessels' hatches – including tween decks – shall be openable in case of an ammonium nitrate fire. There is, however, potential to misunderstand this point and ICHCA is working with the International Maritime Organization and stakeholders to clarify the wording of the clause. Several jurisdictions, that handle the product in significant quantities, have taken heed of this risk and the related IMDG requirements.

STATE-OF-THE-ART SENSOR

Researchers at Bournemouth University have developed and patented a new corrosion sensor that could improve the safety and reliability of large structures such as bridges, aircraft, military vehicles and gas pipelines.

The device can detect defects and risks in major infrastructure at a much earlier stage than the methods that are currently used. As well as improving safety, it could reduce the need for time consuming repairs which can come at significant cost and inconvenience to industries and the public.

"Our doctors often encourage us to take health screenings regularly, so they can diagnose conditions at an early stage which gives us better options for treatment," says Zulfiqar Khan, professor of design engineering and computing at Bournemouth University who led the development.

"This sensor works on the same principal. If we can spot health risks in vehicles and mechanical structures before corrosion reaches an advanced and dangerous stage, we can avoid costly, lengthy repairs and hopefully prevent structures from being scrapped altogether."

While other corrosion sensors are used by industry – and some can even be bought on eBay – they all require cables to be plugged in to a computer. This means that maintenance must take place with a worker present at the site.

Professor Khan's device is wireless so it can be attached to a structure and its readings could be continuously monitored off-site.

As a further benefit, the sensor can be used on any kind of surface, whereas most current devices only work on

metallic surfaces, which the electricity from the sensor must pass through.

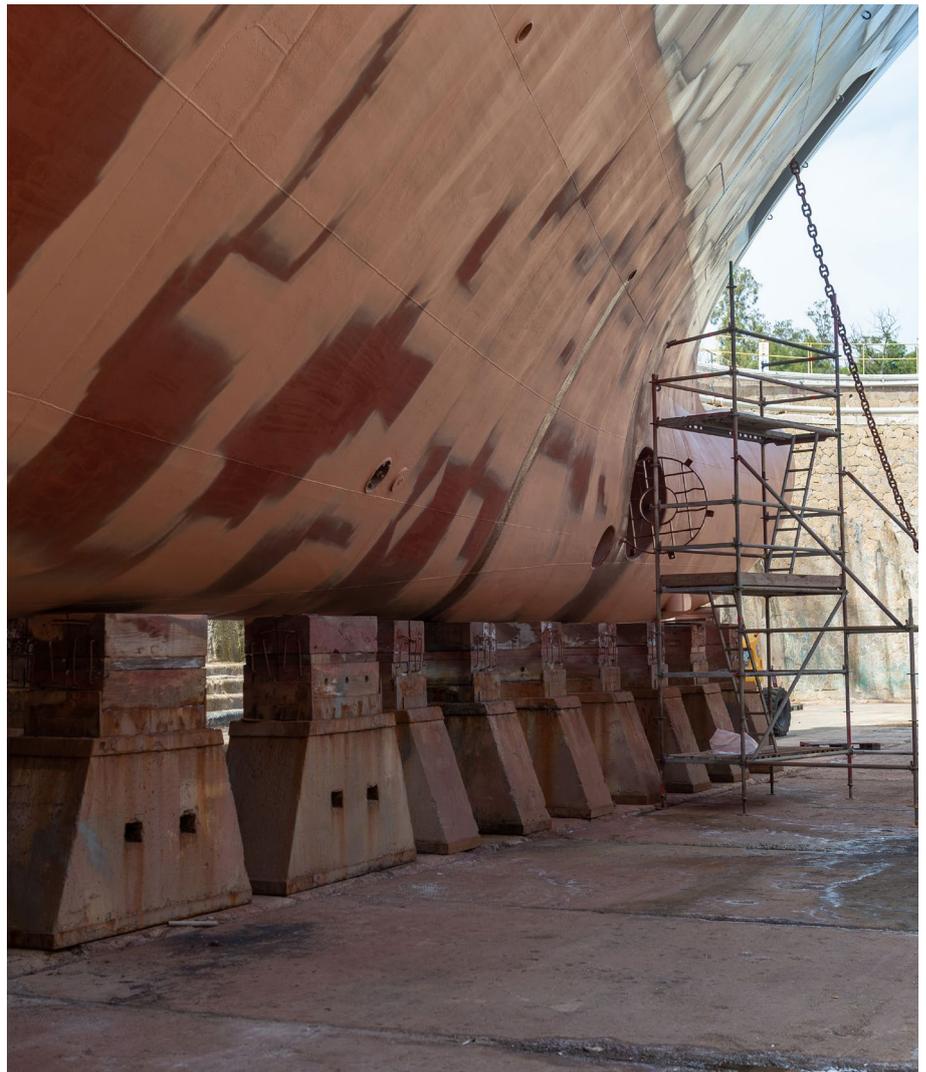
"The aerospace industry, for example, would prefer a sensor that can detect failures beneath non-metallic coatings. Currently, this involves removing a patch of the non-conductive coating to make the conductive surface available – this could be counter-productive as it can initiate corrosion more rapidly," explains Professor Khan.

"Unmonitored failures lead to costly consequences. Scheduled inspections are tedious, time consuming and are mostly limited to visual or surface failures. Our latest sensor technology is a futuristic, much needed solution. It can work remotely, it works on metallic and non-metallic surfaces and can detect defects several millimetres below the surface which are not visible to the naked eye," he continues.

The technology has now been granted patents in the UK and the US and Professor Khan and his team are keen to work with partners so that it can be rolled out across industry and engineering and construction companies can start realising the benefits.

As well as benefits for operational infrastructure, the device would help companies with large fleets of vehicles or machinery that may be kept in depots and not regularly used or serviced.

"It is a bit like coming home from work and deciding you want some food that has been at the back of the cupboard, only to find that it is past its use-by date," Professor Khan says. "Our device can continually monitor mechanical structures to ensure they always remains in date and will not have to be thrown out."



ABP AIR INITIATIVE

Associated British Ports (ABP), the UK's leading ports group, has published an update to its Southampton air quality strategy, *Cleaner Air for Southampton*, outlining the progress made by ABP and companies operating within the port as well providing an action plan to improve air quality even further in future.

First published in 2018, the report outlines a number of measures that have been undertaken by ABP, its customers, shipping lines and wider stakeholders across the port to deliver improvements in air quality.

Over the past 12 months, the port has seen major successes with improvements such as the introduction of shore power to enable cruise ships to turn off their engines while alongside; the use of alternative cleaner fuels; and further investment in rail infrastructure and port equipment.

Around half of ABP Southampton's power comes from solar generation. ABP's initiatives are helping to drive an overall reduction of 40% in energy consumption since 2009 against a doubling of port throughput.

Alastair Welch, director of the port, comments: "As a major employer and a responsible neighbour, we are proud of the role we and the wider port community have played in accelerating air quality improvements in Southampton.

"We will continue to implement initiatives and share our experiences with others to ensure these improvements continue."

CYBER SECURITY TRAINING

Korean Register has launched maritime cyber security officer e-learning training in conjunction with maritime technology company SIRM Italia. The training will be delivered to Oltremare, a company in Assarmatori National Shipping Association that provides training to its members.

The new course covers administrative security and cyber risk assessment, as well as understanding and practice of maritime cyber security. The course is designed for ship officers who are required to undertake cyber security-related audits and surveys.

Lee Hyungchul, KR chairman and CEO, says: "With so many computer-based systems onboard, ships are vulnerable to cyber risk. Therefore, comprehensive cyber security preparedness is now essential for any maritime industry.

"This e-learning training allows superintendents and crews at all levels to continue their training, to understand and take actions to manage cyber security risk. We will provide quality training to European customers, starting with providing this cyber security e-learning training to Oltremare."

Claudio Aleandri, CEO of SIRM Italia adds: "With rapid advancement in technology, the shifting cyber threat landscape and increased digitalisation, organisations are exposed to greater cyber security risks that may potentially have an adverse impact on their business objectives.

"It is imperative to prioritise and plan defences to avert those risks effectively. Organisations should be able to identify what could go wrong and determine the levels of cyber security risk that they are exposed to, developing adequate assessment and adapting ICT infrastructure.

"Improving an internal cyber risk awareness culture, through dedicated training, is the strategic approach to protect organisations and facilitate their governance."

WAVE ANALYSIS UPDATE

As part of the International Association of Classification Societies' (IACS') ongoing commitment to safe ships and clean seas, a long-term review of wave data has now concluded with the publication of a revised version (Rev.2) of IACS Recommendation No. 34, which provides advice on sea states as well as wave spectrum, spreading, heading distribution and vessel speed.

Accurate wave data remains of paramount importance as this data is used to represent the ocean environment, underpinning wave load prescription, which in turn greatly impacts hull structural requirements.

IACS Recommendation No. 34 describes wave statistics intended for the design of sea-going ships above 90m and includes the effect of bad weather

avoidance. It is based on North Atlantic trade, which represents the most severe conditions ships tend to operate in.

Following indications that the representation of North Atlantic waves in the existing IACS Recommendation No. 34 may have become outdated, IACS began work in 2016 on a long-term review of wave data, tasked with investigating if and how Recommendation No. 34 could be improved using more recent data sources, with modern data showing both an increase in mean significant wave height for the North Atlantic and that more extreme weather is being experienced in recent years, including the existence of rogue waves and the possible effects of climate change.

Several sources of wave data, including altimetry (measurements from satellite), hindcast model (re-analysis of past weather) and wave buoys were used to derive the scatter diagram from a combination of vessel tracks and hindcast wave data. These new data sources represent a significant improvement in the quality of data, given that previous wave data was collected in the second half of the 20th century from visual observations on board ships.

The IACS project team's global hindcast datasets are built on global coverage over an extended period of time and have been analysed and validated through the use of measurements from buoys and altimeters. By taking into consideration publicly available AIS ship position data, this allowed the wave data to be mapped to actual ship position and time when generating the corresponding statistics whose analysis showed that bad weather avoidance had a significant impact on the wave statistics of the sea states encountered.

The resulting updated simple scatter diagram, using validated datasets of wave data and ship positions will facilitate more accurate estimation of design loads such as pressures, motions, accelerations, hull girder loads, all contributing to the improved standardisation of safety levels of the fleet.

This data will be used by individual Classification Societies when reviewing their current rule requirements including, by IACS members, for common

structural rules. This significant new data source will also be of value to other industry stakeholders who use wave data for individual projects.

IACS secretary general Robert Ashdown says: 'This extensive project to update and improve one of the key data sources that go into modern ship design is indicative of IACS' ongoing commitment to safer shipping and provides a valuable tool for stakeholders who rely on accurate wave data in their work.'

ACCIDENT INVESTIGATION

The UK Marine Accident Investigation Branch (MAIB) has started investigating the causes of the death of pilot Francesco Galia while transferring from a transfer vessel to a large ocean-going ship in the Humber Estuary on 8 January this year. The accident has sparked calls for improvements regarding the safety of maritime pilots transferring to and from ships.

The cause of this accident is unknown and will take some time to be fully understood by investigators, and a MAIB report will be produced to give recommendations for best practice going forward.

In response to the accident, the UK Maritime Pilots Association (UKMPA) is calling for improvements in safety and training.

"It is with great sadness that we report the tragic death of a highly experienced UK maritime pilot," says UKMPA. "We extend our deepest condolences to loved ones, friends and colleagues, and offer our support to all those affected by this terrible news.

"This tragedy highlights the risks and challenges faced by maritime pilots every day they go to work. They are responsible for safely navigating ships in and out of ports and harbours, often under complex and hazardous conditions, transferring from one vessel to another by nothing more than a rope ladder. This is always a risky procedure."

"Without the dedication of maritime pilots whose daily work keeps UK ports open, the nation would grind to a halt in a matter of days. 95% of all UK trade comes in and goes out by ship.

"We urge the maritime industry and regulatory authorities, once again, to prioritise safety and training with regard to the transfer of pilots

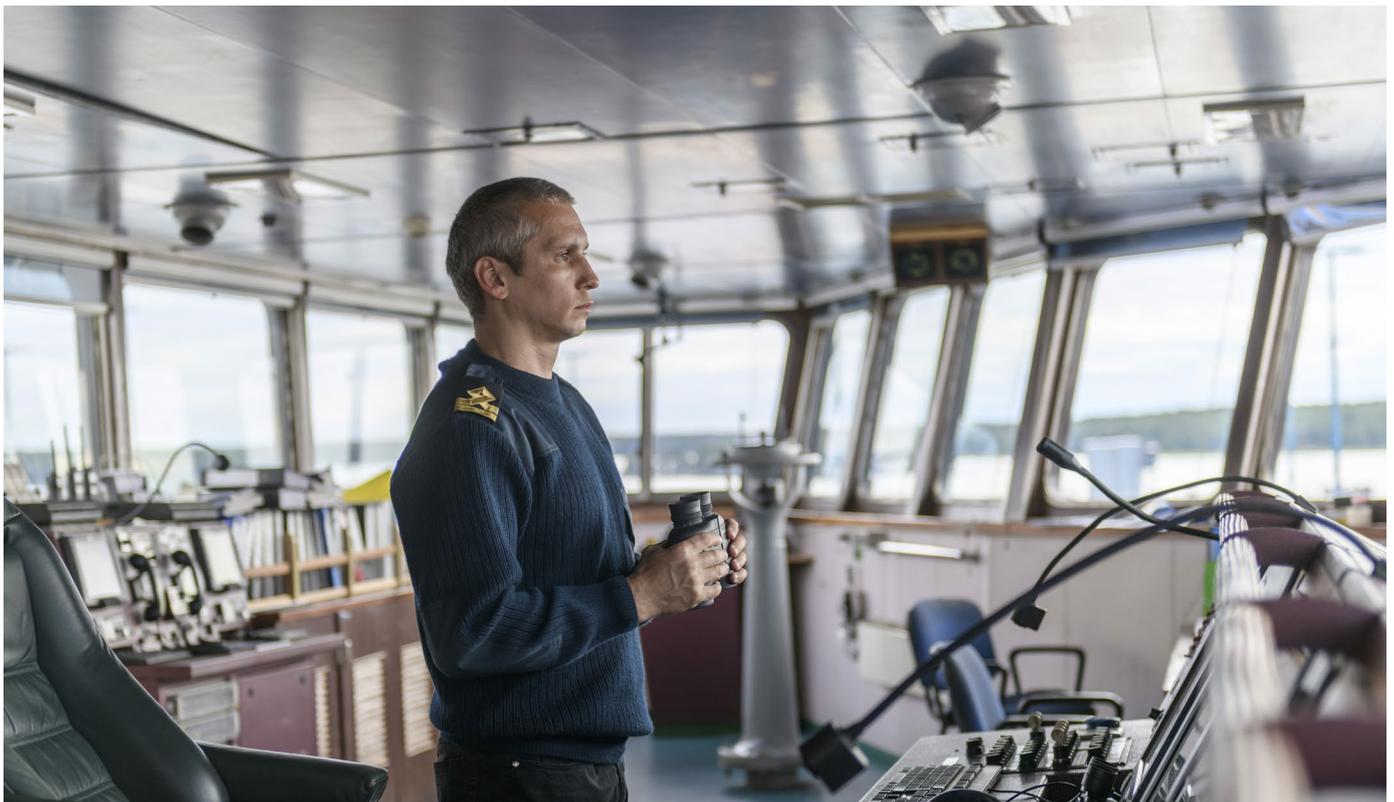
and crew and to invest in safe and reliable technologies and procedures to ensure that our maritime pilots and seafarers return home safe after every voyage."

In 2022, UKMPA and the British Tugowners Association published the second edition of the *Pilots' Pocket Guide and Checklist* to raise awareness of good practice and improve safety.

Also last year, the International Chamber of Shipping and the International Maritime Pilots' Association produced a new edition of the *Shipping Industry Guidance on Pilot Transfer Arrangements*, amid industry concerns about poorly rigged ladders causing severe injuries or fatalities.

The requirements in SOLAS V/23 are the minimum standards for equipment installed and arrangements for pilot transfers on ships on or after 1 July 2012.

SOLAS V/23.2.3 also states that a pilot ladder shall be certified by the manufacturer as complying with V/23 or "with an international standard acceptable to the organisation" and refers to ISO 799:2004 Ships and marine technology – pilot ladders.



SMOOTH OPERATORS

BY ESA HENTTINEN

The executive vice president of NAPA Safety Solutions looks at how data and simulation tools are charting a new course for maritime sustainability



ESA HENTTINEN, EXECUTIVE VICE PRESIDENT, NAPA SAFETY SOLUTIONS

For the past few years, a key focus of meetings at the International Maritime Organization (IMO) has been carbon emissions and how its member states can agree to push shipping decarbonisation further. The global regulator still has a long way to go on setting more stringent targets, but it is not the only driving force towards sustainability. The months and years ahead will cement the key role of digital tools in helping the maritime sector achieve (and exceed) IMO targets.

Little was achieved in terms of setting more challenging decarbonisation targets at the IMO's Marine Environment Protection Committee (MEPC 79) in December last year. This puts more pressure on decisions to be made in July at MEPC 80, where shipping's global regulator is due to adopt a revised strategy to reduce greenhouse gas (GHG) emissions from shipping. This will be a defining moment of 2023, and perhaps the whole decade, for shipping's decarbonisation journey, with the potential adoption of a net-zero target for 2050 and market-based measures on the cards.

Whatever happens at that crucial meeting or beyond, we're confident that the maritime sector has access to the necessary technology and expertise to reach net zero. This is a transition that must begin today and, as an industry, we have a duty to make the most of tools already available to reduce our carbon footprint. That's why we joined the Global Maritime Forum's call to decarbonise shipping by 2050, and continue to find new ways for the industry to collaborate and accelerate the green transition.

Turning obligation into opportunity

Digitalisation will be at the heart of change both on the ship and shore side, and IMO's recognition of this was demonstrated in its Facilitation Committee meeting in May 2022. The Committee adopted amendments to the Facilitation (FAL) Convention, which will make the single window for data exchange mandatory in ports around the world from 2024.

This marks a significant step in the acceleration of digitalisation in shipping, helping ensure that crews only have to input information required on arrival, stay and departure

of ships in ports once and that digital technology helps make it available where it is needed.

This is only one way in which data exchange between ship and shore can support safer and more sustainable shipping. For example, we already see maritime pioneers using cloud-based platforms to facilitate collaboration between seafarers on board and fleet operations centres on shore. This enables these teams to monitor a wide range of operational and safety parameters, plan, and optimise operations to the fullest to reduce emissions, without compromising safety.

We believe that the capacity to collect the right data, share it and use it smartly, will be one of the trends that will define 2023. The need for data becomes more pressing as reporting requirements increase, but this is also an opportunity to turn obligation into opportunity.

In the digital era, ports and shipping companies can fully use information that was previously lost on paper, or hidden in spreadsheets and harness it

to find new insights and efficiencies, create new collaborative models, and simulate different scenarios for their low-carbon future.

Evaluating options

Data collection obligations defined under the IMO's Carbon Intensity Indicator (CII), which requires ships to improve their energy efficiency, start this year – even though the regulation is still undergoing fine tuning by MEPC. Since 1 January, it has become mandatory for ships to calculate their attained Energy Efficiency Existing Ship Index (EEXI) to measure their energy efficiency and to initiate the collection of data for the reporting of their annual CII rating. The first annual reporting will be completed in 2023, with the first CII ratings given in 2024.

As a wide range of operational measures, clean technologies and fuel options are emerging to help shipowners achieve and maintain high ratings, the industry seeks to make the right choices. However, there won't be

a "one size fits all" solution for all fleets and vessel types. Being able to predict the performance of new solutions and their operational and safety impacts will be essential to help companies progress with confidence.

The latest generation of digital tools can model, simulate, and predict the impact of different measures. NAPA's CII Simulator, for example, uses data on a vessel's past and current routes and performance to predict its CII rating, showing the impact of each voyage on the overall result. The platform can simulate the impact of different measures and operational profiles, such as using weather routing, slow steaming, hull cleaning, or installing energy saving devices, on the vessel's CII rating at the end of the year.

Optimising arrival times

The importance of digital technology to deliver "just in time" arrivals is well established, but this isn't the only way in which it can help reduce emissions in the last mile of a vessel's journey.



NAPA is co-ordinating a collaborative project that tackles the wasteful practice of “sail fast then wait” (SFTW), which sees ships sailing at speed across oceans only to wait at anchorage outside ports.

Combining an innovative contractual framework and state-of-the-art digital technology, the Blue Visby Solution optimises arrivals, enabling vessels to reduce their speed – and emissions – without impacting their commercial performance.

In a nutshell, the different parties involved in a voyage agree to a dynamic “queuing system”, where the Blue Visby algorithms help optimise and stagger arrival times for groups of vessels travelling to the same port.

Taking into consideration parameters such as the performance and characteristics of each vessel, port congestion at destination, and weather conditions, the Blue Visby algorithm provides an optimal target arrival time for each vessel, while keeping their order of arrival as if they had sailed independently without the solution. This enables vessels to slow down and still arrive one after the other, which reduces unnecessary waiting times outside ports.

By tackling SFTW, the Blue Visby solution will help reduce emissions for maritime journeys by 15% on average. If applied globally, the solution has the potential to reduce the carbon footprint of the global shipping fleet by more than 60 million tonnes of CO₂ per year – which is larger than the total emissions of an entire country like Norway.

Crucially, the project addresses industry concerns about the sharing of sensitive information, as the algorithms that assign a target arrival time to each vessel only require minimal data input from the companies, in addition to publicly available AIS data.

Furthermore, the anticipated 15% reduction in emissions from the wet and dry bulk fleets will make a tangible difference for the environment without impacting commercial viability, as the speed reduction would be as little as one knot on average.

Reducing rubbish – and workloads

The battle against maritime pollution is fought on multiple fronts, with garbage and ballast water included in the MEPC’s remit. The impact of maritime plastic pollution continues to attract public scrutiny, and MEPC 79 adopted a resolution that means more ships will have to keep logs on what they are throwing away.

The resolution MEPC.360(79) expands the requirement for a garbage record book by lowering the threshold down to ships of 100 gross tonnage and above (from the current threshold 400 gross tonnage and above). This has been done to expand tracking and reporting of accidental discharges to the sea that may involve plastics.

MEPC 79 additionally mandated more detailed and standardised reporting of ballast water operations in the *Ballast Water Record Book*. As the saying goes, “you can’t manage what you can’t measure”, and this also applies to the management of ballast water, with its risks of spreading invasive species.

As the reporting burden for crews is increasing all the time, the need for streamlined, digital reporting solutions grows. NAPA Logbook is continually evolving to stay ahead of regulation, to ensure that crew can easily manage this environmental reporting by automating log entries and record-keeping. Moreover, as a digital logbook, it allows teams to use the information they gather to find new insights and efficiencies, rather than leaving valuable data on paper.

Redesigning ships

Like MEPC 78 before it, MEPC 79 participants couldn’t agree on more stringent greenhouse gas targets for shipping, but pressure is mounting for an agreement to be reached at MEPC 80. This will drive the adoption of future fuels further than current CII regulations are likely to, leading to further crucial decisions for the industry.

Innovative ship designs will characterise the next decade and with digital twins, we are able to assess how new systems may affect a ship’s stability and operations, which helps inform decisions on where additional tanks for new fuels or new systems such as batteries should be installed on a ship, for instance.

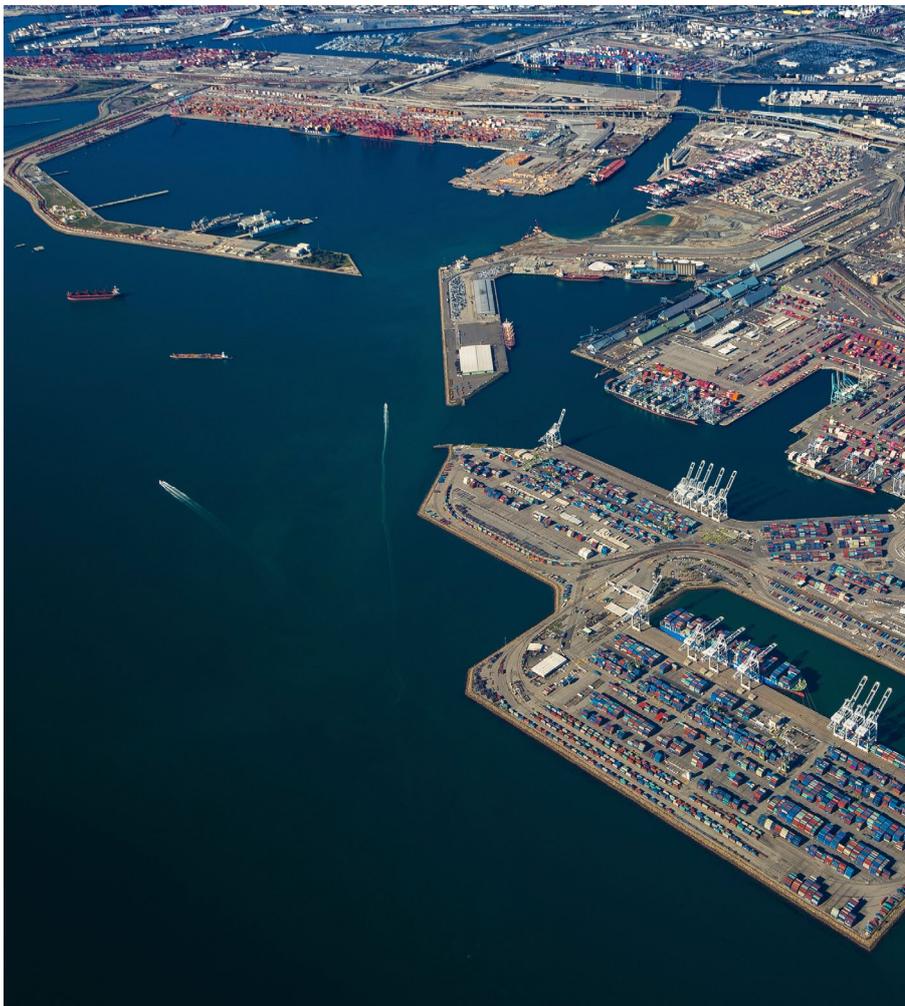
NAPA’s design and stability tools can calculate the impact of the added weight on the vessel’s stability parameters, including trim, heel and draft. Moreover, the effects on the ship’s vertical centre of gravity can be modelled and checked against data on daily loading conditions provided by NAPA Stability.

Overall, if we’re going to see any major changes to shipping’s green regulatory landscape, it’ll be in summer 2023. But in the meantime, with the implementation of CII, and new data to record and manage, there is plenty for ship owners to do – and no better time to start measuring and optimising all aspects of operations.



GOING FOR GROWTH

Funding initiatives and state grants are giving US ports a much-needed financial boost



US ports have secured funding from the US Department of Transportation Maritime Administration in recent months, with more than \$703m in grants awarded for infrastructure improvement projects.

The Port of Beaumont, awarded \$26.4m for construction of two projects that will help bring a container on barge operation to fruition, is one of 41 ports awarded grants through the 2022 Port Infrastructure Development Program.

The \$26.4m grant will fund two port infrastructure improvement projects, including the Lot 6 Barge Dock Strengthening Project and the Lot 14 Multi-purpose Container Marshalling Yard, both of which will increase outdoor storage capacity, alleviate current capacity constraints, and support future growth.

The Lot 6 component includes construction of a relieving platform to strengthen an existing barge dock at the Port of Beaumont, which will allow the port to move containers via barge from Beaumont to Houston. Work includes strengthening and hard-surfacing an existing 26.14-acre dirt lot, which currently serves as one of the Port's primary outdoor storage areas.

“We are hopeful that the completion of these two projects will aid in bringing a container on barge service to life and are confident that expanding services offered by the port of Beaumont will meet the growing need for sustainable transportation options while reducing emissions, providing safety benefits, and reducing barriers to entry for local manufacturers,” says board president Pat Anderson.

The proposed container on barge operation has the potential to annually remove more than 17,000 vehicles from the I-10 corridor between Beaumont and Houston, decrease vehicle miles travelled by 3,083,520, reduce CO₂ emissions by 4,829 metric tons, and support additional job creation in the community.

HOUSTON SUCCESS

The port of Houston had its best year to date in 2022. Container annual volume was up 14%, reaching just shy of four million TEUs, at 3,974,901 TEUs. This is

nearly double the volume posted six years earlier in 2016 and 492,526 TEUs more than in 2021. Total tonnage was up 22% for the year, reaching 55,060,963 short tons, a new record.

In December, however, volumes dipped compared with the record 2021 activity, a softening of demand that mirrors other gateways across the country. A total of 292,027 TEUs were handled at Port Houston during December, a 12% decrease compared to December 2021. Loaded container imports decreased by 16% in December, while this was the top December ever for exports, which increased 7% year-over-year.

Steel imports through Port Houston were up 25% in December and 49% for the year. At more than five million short tons, it was the highest year for steel import tonnage at Port Houston in more than five years. Steel import products with large increases include line pipe, standard pipe, oil country goods, heavy

structural shapes, and wire rods. While down 29% for the month of December, auto import units ended the year 7% up.

Bagged goods imports were up 50% compared with the previous year. “The volumes we’ve experienced this year at Port Houston have been incredible, and we never wavered in our commitment to do our part to efficiently move cargo through our terminals,” says Roger Guenther, executive director at Port Houston.

“The record growth seen over the past couple of years has been supported by continued investments in Port Houston terminals as well as the immense dedication of the Port Houston staff who are committed to moving our region’s cargo.”

For more than 100 years, Port Houston has owned and operated the public wharves and terminals along the Houston Ship Channel, including the area’s largest breakbulk facility and two of the most efficient container terminals in the country.



MISSISSIPPI ATTRACTS FUNDS

Major port terminal operators based in New Jersey and Switzerland have committed \$800m toward a planned \$1.8bn container facility on the Lower Mississippi River.

New Jersey-based Ports America and Switzerland-based Mediterranean Shipping Company, through its investment and development subsidiary Terminal Investment Limited, will be involved in the project, along with the Port of New Orleans.

State officials said the facility will be able to serve vessels of all sizes, increasing Louisiana's import and export capacity. Port officials say the project will create new jobs while preventing the loss of jobs to competing ports in Houston or Mobile, Alabama.

The head of the US Economic Development Administration said recently that a \$50m federal grant won by a coalition of south Louisiana organisations should put New Orleans in pole position to be the nation's primary hub of clean hydrogen innovation.

The coalition, called H2theFuture, was one of 21 winners to get a piece of \$1bn earmarked for regional economic projects in the American Rescue Plan, the \$1.9tn stimulus bill signed by President Joe Biden.

The \$50m grant to H2theFuture was one of the larger awards under the programme and it was the only project focused on developing clean hydrogen technology. It will be matched by a \$24.5m grant from the state with the goal of building a hydrogen innovation ecosystem in south Louisiana.

Louisiana is also bidding for a grant when the Department of Energy distributes a \$7bn pot of funding among six to 10 designated regional clean hydrogen hubs.

The \$74.5m H2theFuture money will be split between 35 organisations. Some \$10m is earmarked for the creation of the NeXus Center at the University of New Orleans' Research and Technology Centre. The centre will focus on commercialising clean hydrogen technologies to attract more funding from the public and private sector.

AVONDALE INVESTMENT

Port of South Louisiana chief executive Paul Matthews says that the port has entered into a sale and purchase agreement with T Parker Host to purchase Avondale Global Gateway.

As the Western Hemisphere's second largest tonnage port, the acquisition of the 254-acre global logistics hub along the Mississippi River will allow the port to be more competitive in traditional international trade and focus on the new frontier of renewable energy development.

A former shipyard, T Parker Host has transformed Avondale Global Gateway into a centre of multi-modal commerce and combines river, road, and rail connections with ample storage and laydown space with a strategic location on the West Bank of the Mississippi River.

Accommodating ships, barges, rail, and trucks, the site offers immediate access to regional and interstate highway systems and is positioned at the interchange of six Class I railroads, creating the capability to distribute cargo in all directions.

"The state's largest port is ready to own the state's greatest industrial icon," says Matthews. "This acquisition establishes Avondale Global Gateway as a permanent Economic Development arm of the State of Louisiana."

The acquisition of Avondale Global Gateway will strengthen the port's bid to be the premier gateway for US import and export traffic, the goal to facilitate economic development in the River Parishes and Southeast Louisiana through waterborne commerce.

Since purchasing the property in 2018, T Parker Host has invested significantly in redevelopment. With this transaction, the port will enter into a long-term agreement with T Parker Host to serve as the terminal operator.

Adam Anderson, president and CEO of T Parker, says: "As we look toward the next phase of Avondale Global Gateway's evolution, we are confident this public private partnership with the Port of South Louisiana positions the site at the forefront of the new frontier of renewable energy development, propelling the State of Louisiana into this new economy."



According to a recent economic impact study, Avondale Global Gateway is expected to create more than 4,500 jobs and have a total economic impact of \$32bn in output and increase Louisiana payrolls by \$8.6bn by 2027.

The Port of South Louisiana ranks as the primary US grain exporter and second largest US energy transfer port. Port SL is home to seven grain transfer facilities, four major oil refineries, 11 petrochemical manufacturing facilities and several other facilities.

LONG BEACH DEVELOPMENT

US President Joe Biden has signed into law the Water Resources Development Act (WRDA) of 2022, the biennial legislation authorising federal flood control, navigation and ecosystem improvements, which include the Port of Long Beach's Channel Deepening Project.

"We are grateful to members of the House and Senate and the Army Corps of Engineers who championed this bill, the many lawmakers from both parties

who voted for it and President Biden," says Board of Harbor Commissioners president Sharon Weissman.

"Their overwhelming support recognises how vital international trade through the Port of Long Beach is to the US economy."

The Port's Channel Deepening Project is one of only five navigation projects nationwide that met the goals of the Corps' planning process to make the cut for construction authorisation under the new water resources law.

"This project will widen and deepen the harbour, which serves one of the world's top 10 busiest container port complexes," says port executive director Mario Cordero. "Increasing the safety and efficiency of vessels transiting our waterways supports our mission to remain competitive while reducing pollution from port-related operations."

Key elements include deepening the Long Beach Approach Channel, easing turning bends in the main channel to deepen a wider area, deepening parts of the West Basin, constructing an

approach channel and turning basin to Pier J South, improving the breakwaters at the entrance to Pier J, and depositing dredged material in nearshore sites for reuse or in federally approved ocean disposal sites.

The Army Corps of Engineers says deepening and widening channels in the harbour will lead to improved vessel navigation, safety, and national economic benefits valued at more than \$15m annually.

The project's operational benefits include more room for the largest tankers and container vessels to transit the harbour and fewer delays related to tidal flows. Deeper, wider channels also reduce the need for large vessels to transfer liquid bulk cargo or containers to smaller vessels before entering the harbour.

Environmental benefits include lower fuel consumption because ships will be able to manoeuvre more efficiently through the harbour. Burning less fuel reduces vessel pollution – emissions of particulate matter, nitrogen oxides and



GREEN FOR GO

Handling the transition to the use of new sources of energy is just one of the challenges facing the German ports' sector this year



According to port management company Bremenport's managing director Robert Howe, 2022 was a year of steady growth with further expansion planned for 2023. Although Howe acknowledges that attracting the right workers to replace those retiring in the coming years is a challenge, the management company has concentrated on ensuring the port can attract the right recruits to fill specialised positions.

Howe explains that with the Port Development Concept 2035, the government has adopted an ambitious programme for the future. "The implementation of the formulated goals will massively change the port in the coming decade. Ports must become more economical, sustainable, digital and climate-neutral. This creates a work package that can only be achieved through a joint effort by all actors in the port," he says.

In view of the energy requirements required by Germany, ports are of central importance if the energy transition is to succeed. Bremen's ports have the potential to develop as a base port for the import of hydrogen. With a CO₂ terminal, Bremen can play a key role in the implementation of the new carbon capture and storage technology. This creates the opportunity to capture climate-damaging emissions, transport them via the port to suitable disposal sites and thus make an important contribution to combating climate change.

In close co-operation with the terminal operators, the overseas port can be developed into a climate-neutral district with its own renewable energy supply. Together with the port community, a smart port strategy can be developed and implemented in order to catch up with other ports.

Port infrastructure improvement projects are also important and one example is the construction of the Columbus quay, with the first major section due to be completed shortly.

On the basis of the plans drawn up by Bremenports, the Senator for Science and Ports will submit proposals for the new construction of container

quays, which the port authority believes will be vital if the port is to remain competitive.

Also envisaged is further expansion of the railway infrastructure at the terminal, and transport development of the overseas port and traffic planning round the port are also key components.

Further major investment projects are on the agenda, notably the construction of the new north pier in the fishing port and the planning of a new swing bridge to Columbus Island.

"The Senator for Ports has announced an investment offensive. Bremenports is working to ensure that this offensive can be implemented quickly," says Howe, "because more important than today's figures are the projects for tomorrow."

Global impacts

Many ports, including those in Germany have felt the impact of the war in Ukraine, as well as the downturn in the global economy generally. Disruption to global supply chains resulting from the ongoing covid-19 issues have continued to challenge ports, not least the implementation of China's zero covid policy.

"In recent months, the energy crisis as a result of the Russian attack on Ukraine and the still strong effects of the pandemic have once again made this very clear to us," says Claudia Schilling, Senator for Science and Ports. "But despite all the challenges, the port and logistics industry, as well as the employees on the ships and in the ports, have ensured supplies for the German and European population in these difficult times. And we, as a state, will continue to live up to our responsibility for Bremen's ports by making quays and terminals fit for the future."

The transformation of industrial society towards climate neutrality also poses major challenges for ports. Shipping and the operation of port facilities contribute significantly to CO₂ input.

At the same time, ports can make a significant contribution to creating a climate-neutral energy supply. Competition requirements are changing

and new business models are emerging. Sustainability is becoming the model for action of the future in several respects.

In an address to mark the new year, Dr Schilling called for a significantly stronger financial commitment from the federal government to German seaports.

At Bremenports' new year's reception of in Berlin, the senator said: "Climate neutrality and energy security cannot be achieved without the seaports." This requires new handling facilities for hydrogen imports and for the shipment of offshore facilities.

According to Schilling: "Our ports should not only be climate-neutral, the energy of the future should also be landed here and fed into the grids to be expanded, so that Germany as an industrial location will still function in 20 years' time. I think it is of fundamental importance, not only for the ports, but for the German economy as a whole, that this is heard and understood in Berlin.

"A transformation of the German economy towards climate neutrality will only succeed if the ports are upgraded and expanded accordingly."

This could not be achieved with state budgets. "That is why the federal government must set the course for greater financial participation in port burdens with a new national port strategy."

At the new year event, Jan Ninnemann of HTC Hanseatic Transport Consultancy commented: "We must ensure that ports remain competitive in the face of the many challenges". In view of the expansion targets for offshore wind energy, considerable investments in port infrastructure are required. Ports are seeking to become climate neutral by and in addition, great efforts are needed to prepare German ports for the import of hydrogen.

Meanwhile, the spokeswoman for activist group Fridays for Future, Annika Rittmann, reminded those that shipping itself has a considerable need for action. Clean shipping must be implemented much faster than currently planned. She said there was a lack of a strategy for seaports to jointly exert more pressure on international shipping.

GREEN TALKS

The Hamburg port authority Hamburger Hafen und Logistik (HHLA) has been holding talks with COSCO Shipping Ports and the Federal Ministry for Economic Affairs and Climate Action.

Referring to the publication of a mandatory announcement by COSCO Shipping Ports (CSPL) on the Hong Kong Stock Exchange on 6 January 2023, a HHLA spokesperson stated: "We can confirm that in objective, constructive talks between HHLA, CSPL and the Federal Ministry for Economic Affairs and Climate Action, it has been possible to agree on concrete conditions for CSPL's participation in HHLA Container Terminal Tollerort.

"HHLA and CSPL are currently in talks to clarify the final details and are aiming to finalise the transaction soon. HHLA is pleased to continue the co-operation with its long-standing business partner COSCO on a new level."

Since October 2022, HHLA and CSPL have agreed under certain conditions to discuss a shareholding of less than 25% in HHLA Container Terminal Tollerort with the German government. The parties have agreed not to disclose the contents of the agreement.

Innovative solution

Other activities by HHLA include a pilot project for highly automated and electric container logistics at the HHLA TK Estonia terminal in Tallinn in partnership with HHLA International. The aim of the project is to develop solutions for the gradual automation of trucks within live operations.

HHLA Next is investing in technology start-up Fernride's innovative solution to drive forward automation and sustainability in logistics and to address the lack of truck drivers.

Fernride equips trucks and tractor units with sensors and cameras so that they can be remote-controlled via mobile networks.

In the drive towards automated transport logistics, Fernride's approach lies in the gradually increasing autonomy of trucks and tractor units. The combination of autonomous driving technology of the vehicles and human expertise in remote operation already offers a reliable service available now in live operations. This creates an immediate added value and speeds up the journey towards more sustainable logistics.

Simone Lode, managing director of HHLA Next, comments: "We at HHLA Next invest in digital and sustainable business models in maritime logistics.

We see great potential in autonomous driving solutions, also because of the current lack of truck drivers.

"With Fernride, we are investing in a company that has already implemented a viable solution with a partner network of respected companies from industry and logistics with very good results. In addition, the project highlights our focus on sustainable logistics."

Hendrik Kramer, chief executive of Fernride, adds: "HHLA is the perfect partner to use our platform for autonomous electric trucking in ports. The advantages of remote control can already be actively used by a part of the workforce within ports. With our solution, truck drivers can now also benefit. HHLA shares our ambition to scale this technology internationally, and the port in Tallinn offers ideal conditions in which to lay the foundation for this."

HHLA Next is providing the new portfolio company with access to subsidiaries in the HHLA Group. A pilot project will start early this year at the HHLA TK Estonia terminal in Tallinn – the first Fernride project at a container terminal.

The goal of the project is to determine the technology's operational reliability in automated container handling and to validate the technology's viability for future business opportunities.



Philip Sweens, managing director of HHLA International, comments: "This partnership with Fernride as part of the pilot project in Tallinn will help us to jointly explore new opportunities and to create workflows at our international terminals that are future-orientated and sustainable. We look forward to our collaboration with Fernride and hope this project will be the beginning of a long partnership."

Trucks and tractor units equipped by Fernride will be remote-controlled by teleoperators, who receive and send targeted commands in real time by controlling the gas pedal, brakes, steering wheel and joystick. Fernride's algorithms can be further trained using data from the real-life operation in order to roll out additional autonomous functions.

Truck drivers can be more flexibly deployed through the use of this new technology, which has a positive impact on operating procedures. In addition, the option to work remotely increases both the attractiveness of the job profile and safety on the respective premises.

Hydrogen boost

HHLA has commissioned Linde Engineering to build a hydrogen filling station, which will be part of the test centre for hydrogen-powered port logistics in the Port of Hamburg.

The hydrogen filling station is being developed within the scope of HHLA's Clean Port and Logistics (CPL) cluster to fuel hydrogen-powered heavy goods vehicles and terminal equipment and to test them in operation. HHLA will operate the filling station as part of its cluster activities in the Port of Hamburg.

Linde Engineering and HHLA are thus creating a reliable refuelling infrastructure for heavy equipment in the port. The filling station is expected to begin operation in 2023.

The filling station is centred on an energy-efficient high-pressure ionic compressor that compresses the hydrogen up to 450 bar. This will allow equipment such as straddle carriers, empty container stackers, forklift trucks, reach stackers, terminal tractor units and trucks to be refuelled with hydrogen efficiently. Moreover, the filling

station incorporates various options for expansion.

"Our commissioning of Linde Engineering to build the hydrogen filling station is the next milestone for our hydrogen activities in the CPL cluster. With the construction of the filling station, the required infrastructure is now being created to speed up the transition to emissions-free heavy goods logistics and port operations, and to drive forward the decarbonisation of logistics," explains Georg Böttner, head of the HHLA Hydrogen Network.

"We are delighted to support this forward-looking project with our technology. Efficient and, most importantly, safe refuelling of various hydrogen vehicles is essential for sustainable and seamless port operations," emphasises Alexander Unterschütz, executive vice president components at Linde Engineering.

HHLA established CPL as an innovation cluster to test hydrogen-powered equipment in port logistics.

The aim of the project is to examine how hydrogen can be used to reliably supply power to harbour technology and port logistics.

HHLA is working with partner companies from around the world to develop solutions to bring hydrogen-powered heavy goods vehicles and terminal equipment to market quickly and to put in place the measures necessary for their use. The concepts developed for operation, safety, repair, maintenance, refuelling and supply are tested and optimised in practical operation.

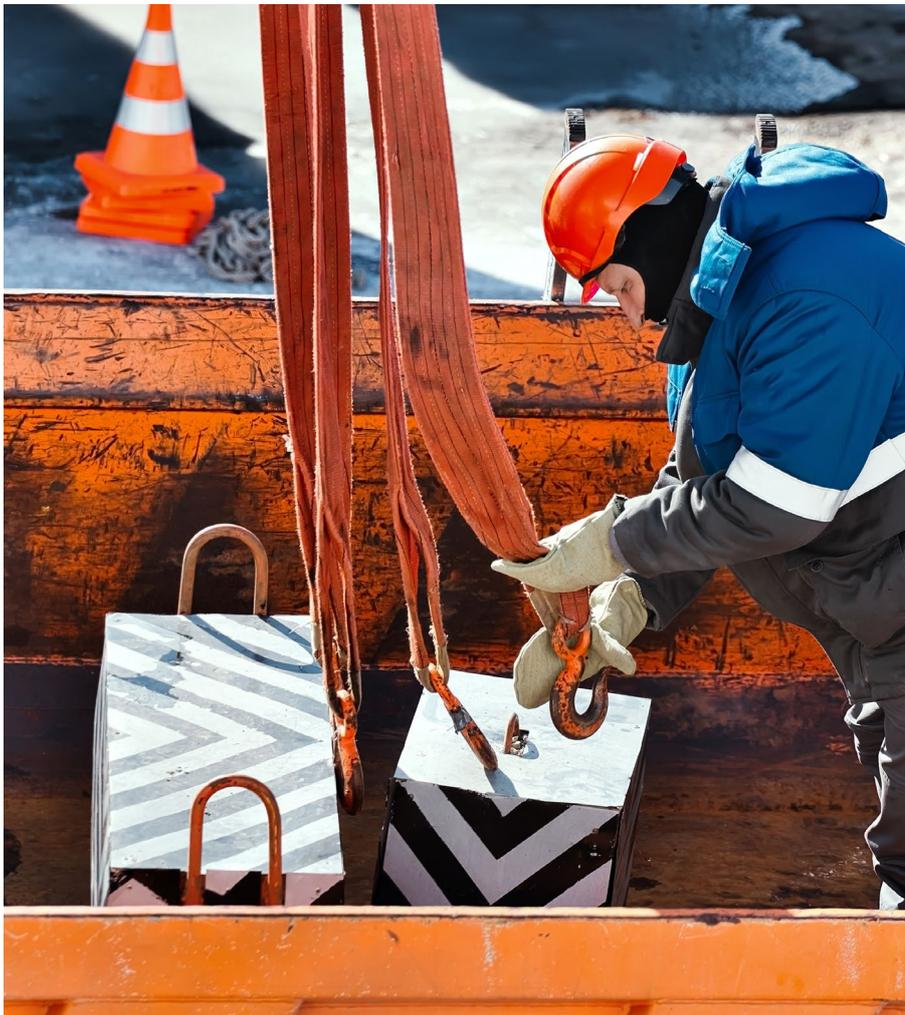
The heart of the CPL innovation cluster is a test centre at HHLA Container Terminal Tollerort in Hamburg, where hydrogen-powered equipment can be tested on actual port handling operations and heavy goods transport.

The cluster is sponsored by the Federal Ministry of Transport and Digital Infrastructure as part of a national innovation programme for hydrogen and fuel cell technology.



SYSTEMS OFFER SOLUTIONS

Coming up with new ways to improve performance has been key to improving port safety, efficiency and automation and also plays a part in cutting port costs at a time when there are many demands on operational finance



A survey of shipowners conducted by design and engineering consultancy Houlder has highlighted that reliance on ad hoc collaboration between shipowners, and between technology companies and owners, is currently a major barrier to the decarbonisation of shipping.

The research – based upon owner feedback from across the container, tanker, bulk, cruise and ferry sectors – uncovers that while the potential impact of more in-depth interaction is significant in achieving carbon reduction commitments, this is not currently being delivered in a way that owners need.

Every senior industry player interviewed confirmed that there is a willingness to collaborate and that it is critical to achieving rapid, fundamental change. However, collaboration is less evident in practice, as owners focus on achieving emissions reductions while safeguarding competitive advantage.

The research unearthed two core areas for improvement: collaboration between owners and clean technology providers, as well as collaboration between owners themselves.

Owners identified a lack of good quality and relevant operating data as a key barrier to the uptake of

clean technology. There is also a perceived shortage of independent corroboration for the claims made by some technology vendors.

None of the participants accused technology providers of suggesting deliberately misleading results, but reflected that the data in a brochure will inevitably relate to another ship. So the results (and the unintended consequences) of any technology intervention need to be recognised as a retrospective, and sometimes fundamental, design changes.

BLUE WORLD BOOST

Danish fuel cell manufacturer Blue World Technologies is extending its activities in shipping. With a methanol fuel cell-powered auxiliary power unit (APU), the company wants to replace conventional diesel generators for power supply on board ships.

Blue World Technologies is a developer and manufacturer of high-temperature proton exchange membrane (HT PEM) fuel cells and started production late last year. The company's focus on the maritime industry is supported by the Bill Gates-founded Breakthrough Energy Ventures, which in August 2022 entered as an investor and completed Blue World's series-B round of a total of €37m.

With the decision of extending the company's activities within development and manufacturing to cover APU systems for marine usage, the company will be able to provide modular APU solutions in the megawatt range for direct integration in new builds as well as retrofits in existing ships.

"Especially within the past couple of years, we have seen that the use of renewable methanol as shipping fuel has turned into a global trend, with more and more methanol-driven vessels, cruise ships, and large ocean-going container ships being built," says Mads Friis Jensen, co founder of the company.

"As a provider of APUs for shipping, Blue World Technologies will support this trend by offering high-power methanol fuel cell solutions with high electrical efficiency, long durability, and low

maintenance costs. Combining our core technology with the entire production from components to finished systems, our customers will benefit from our first-hand technological know-how."

The methanol fuel cell system of Blue World Technologies can supply the electricity needed on board a ship using a simple and modular cabinet configuration consisting of 200kw cabinets that combined can provide an energy load in the megawatt range. This means that the energy supply can be tailored to specific customer needs.

To compensate for the green premium of e-fuels such as methanol, the Blue World methanol fuel cell APU system will have an energy efficiency of 45-60%. This will lower the operating costs and thereby enable a cost-efficient use of e-fuels.

Renewable methanol is considered to be one of the most potential fuels of the future in shipping, as its use allows for climate-neutral operation. Globally, renowned shipping companies have started to upgrade their fleets to this green fuel.

In addition to net-zero CO₂ emissions, the Blue World fuel cells will ensure

an operation where no NO_x, SO_x, and harmful particles are emitted.

In the coming years, Blue World will expand its production capacity and aims for taking a further step into the maritime market with methanol fuel cell systems for propulsion.

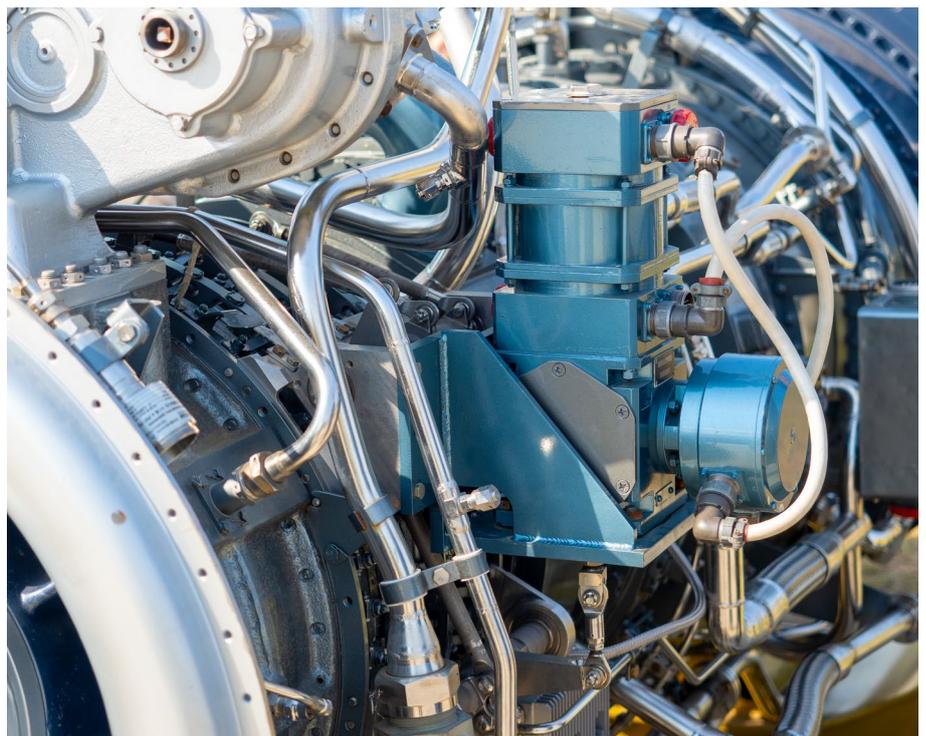
DISBURSEMENT ANALYSIS

Maritime technology start-up Harbor Lab has secured €6.1m in funding to further develop its shipping disbursement analysis software programme.

Disbursements are all expenses that the agent makes on behalf of the operator while the vessel is in port. Port expenses are the second largest cost behind bunkers for a shipping company and amount annually to more than \$120bn.

The Athens-based company is the first to offer SaaS (Software-as-a-Service) disbursement account analysis software that automatically calculates and evaluates port expenses against real-time port tariffs. It will use the capital injection to acquire talent to scale up its core products, which are already bringing significant savings and greater transparency to the maritime industry.

HarborLab CEO and founder



Antonis Malaxianakis says: “Many digitalisation gaps have been closed across shipping in recent years, however the disbursements process in shipping companies is often inefficient and administration-heavy, with little visibility for the ship operator of the actual costs associated with port calls.

“Harbor Lab’s DA Tool addresses these issues and can save operators around \$2000 per port call, when a vessel operates in the spot market, and \$1,500 when she is on time charter.”

Costs paid on disbursements often include port dues, towage and pilotage fees, which combined represent the second-largest operating cost after fuel for a ship operator.

Through the Harbor Lab DA Tool, the ship operator can appoint a representative in port, confirm decisions and compare fees for items paid through their disbursements account, reducing administration by up to 500% – an operator can handle six to eight vessels manually but 40 through the platform.

By leveraging the total volume of port calls processed through Harbor Lab’s platform, operators secure discounts on marine services and agency fees, producing savings that can reach on average seven times the amount spent on Harbor Lab’s services.

DEMURRAGE PORTAL

Voyager Portal has launched a new web-based tool for optimising the often complex demurrage process, while streamlining claim calculations and management.

Providing greater insight from port operations, the company’s new demurrage module reduces processing time by automatically capturing, logging and registering the data from SOFs (Statements of Fact) to help companies improve contracting and port operations.

“Demurrage has always been a risk factor and a significant cost in bulk and break-bulk shipping, especially during any supply chain disruption when problems with demurrage can be accentuated,” says Matthew Costello, CEO, Voyager Portal, adding that disruptions caused by the war in Ukraine has already seen dry bulk demurrage

rates soar to US\$70,000 per day for shipments from Russia.

“Extracting data from SOFs has always been a tough problem to solve, until now. Our new demurrage module helps our customers unlock insights and demurrage-saving opportunities 95% faster than they could before.

“With accurate and comprehensive data in hand, insights can really help with demurrage claims and the upfront negotiation of contract clauses for COAs or spot deals,” Costello explains.

“Enhancing shipping operations and demurrage through technology has always been Voyager’s core business. But this new tool is a real game changer for charterers, traders, shipowners, brokers, agents, surveyors, terminals, or any other group that makes decisions based on information extracted from statements of facts,” he said.

DUSTING DOWN

BossTek, which produces atomised mist technology for dust control, has introduced a new model that suppresses indoor particulate emissions for industries such as demolition and raw material handling.

The compact DustBoss DB-10 is the latest addition to BossTek’s line of atomized mist cannons. Engineered for enclosed working environments, the easily manoeuvrable unit provides excellent suppression in a compact, portable design. The outcome is effective airborne particle control with fewer emissions, less standing water and a safer, more compliant workplace.

“Our customers are well-acquainted with our technology, but before the DB-10, the smallest machine could nearly cover a football field, which is far too powerful for most indoor applications,” says Mike Lewis, dust control specialist at BossTek.

“Our first customer to use the DB-10 was a demolition contractor removing dusty drywall, plaster and tile containing potentially hazardous materials. These all produce highly regulated dust emissions.”

The compact mist cannon is mounted on two wheels with a tall handle. The equipment is light and easy to manoeuvre, while still offering dust

control. A ¾ HP fan delivers 3335 CFM of airflow, powered by 120-volt current. Mounted on the front of the cannon is a circular manifold with 12 atomising nozzles that fracture pressurised water into a fine mist. The fan forces air through the barrel then pushes millions of tiny droplets in a cone-shaped pattern up to 9m.

Using the 0-50° vertical adjustment, the mist can reach into the rafters of warehouses or be directed at specific emission zones. It is offered with a standard wheeled carriage but can be specified with alternate mounting as needed.

Beyond space constraints, the DB-10 solves several issues associated with dusty indoor operations. During indoor demolition, for example, harmful dust can fill the area and drift across the site line, creating a violation, but atomised droplets stop dust at the point of emission.

Workers are often assigned to use hoses for small-scale dust suppression, which adds to the labour cost, whereas the DB-10 requires no labour to run. Moreover, being in proximity of large machinery and falling material can be hazardous to personnel.

One driver of the new design is the fact that hoses create droplets up to 100x larger than atomised mist, far too large to capture airborne particulates. They can use up to 100gpm of water, causing excessive standing water and runoff, a potential hazard. The DB-10 addresses all these issues.

“The dust emissions from indoor demolition or concrete cutting and breaking can create tiny particles that you can’t see,” Lewis points out.

“These can get into your lungs and cause serious breathing issues, but the mist droplets are small enough to capture individual particles at the moment of emission and drag them to the ground.”

HOLD RESEARCH RELEASED

Nippon Yusen Kabushiki Kaisha, NYK Bulk and Projects Carriers and the Maritime Technical International Network recently completed a 35-day experiment using IoT sensors to measure the holds of dry bulk vessels, effectively confirming

the effectiveness of the system in actual voyages.

The quality of the hold environment during the voyage is an important factor in maintaining the quality of marine transport on dry bulk vessels. At present, it is common for crew members to periodically enter the hold to visually check the condition of the cargo, but there are issues such as the risk of crew members overlooking abnormalities and the inability to enter the hold to conduct inspections during rough sea conditions.

To solve these problems, technologies for monitoring the hold environment using equipment that requires wired communications and a power supply have been developed, but their use has been limited because they require construction work to be done on the ship and large investments.

The three companies have therefore developed a new system that does not require any construction work on the vessel. The new system is a comprehensive management system for reducing the risk of damage to cargo. It features 24-hour remote monitoring and data collection of the holds of dry bulk vessels, analyses of past data, and visualisation of cargo-damage risks based on predictions of future conditions.

In dry bulk vessels, it is difficult to supply power to wireless communication and sensor parts from the hold. IoT sensors using LPWA wireless communication technology can be used to monitor the transport environment, such as temperature and humidity in the hold, and the sensors can be remotely monitored in real time from the ship's bridge during the voyage.

In addition, the system has a function to notify the crew with alarms or other means if it observes data that could cause damage to the cargo. Furthermore, sensors monitoring temperature and humidity can be replaced to monitor acceleration, water leakage, illumination, CO (carbon monoxide), etc.

By accumulating this data, it will be possible to predict conditions based on past data analysis, which is expected to further improve the quality of transport.

DUST CONTROL SYSTEM

US-based Superior Industries, a manufacturer and global supplier of bulk material processing and handling systems, has completed development of a new modular skirting system. The easy-to-install accessory controls dust and prevents spillage within conveyor load and transfer zones.

"Our crews visit and collect data from thousands of conveyor systems each year and we figure about half of them would benefit from material containment components," says Paul Schmidgall, chief engineer in Superior's conveyor components division. "That's one out of every two conveyors spilling valuable material, spewing harmful dust, and creating unsafe work environments."

The new skirting system retrofits to any brand of existing structure with little or no field fabrication. Two sets of adjustable legs aid in this universal installation. Additionally, easy-to-adjust clamping mechanisms are used in place of nuts and bolts to hold skirtboard rubber tight against the belt.

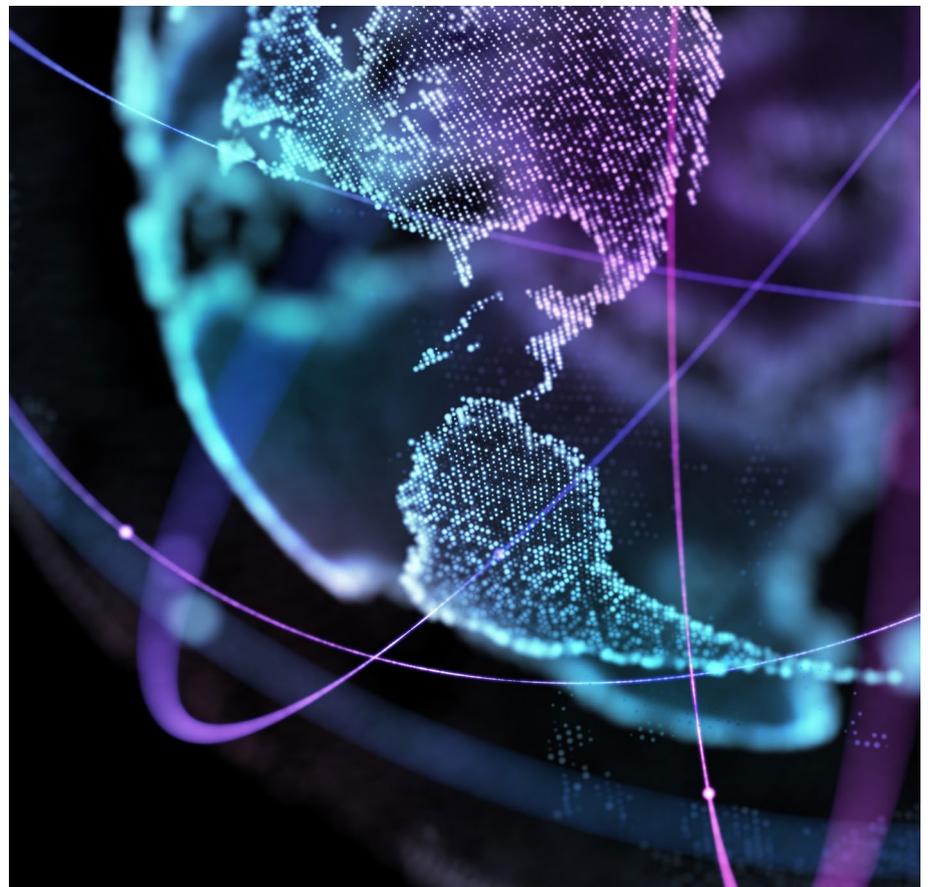
DIGITAL SOLUTIONS

Dry bulk operator Oldendorff Carriers has signed a deal that will see it invest in leading maritime digital solutions provider Alpha Ori Technologies.

Peter Twiss, chief executive of Oldendorff Carriers, says: "Oldendorff is pleased to be an investor in Alpha Ori Technologies. Having considered various clean tech, optimisation and fuel savings products on the market, we believe AOT has the right mix of talent, technologies and futuristic vision to be a transformative force in shaping the future of the maritime industry.

"With this investment, we not only want to support the digitalisation and decarbonisation journey of our industry but also benefit from it directly."

With a diverse range of products that includes SmartShip, SmartVoyager, ShipPalm and VIO, AOT is aiming to transform the maritime industry by harnessing the power of real-time data, generating insights for faster decision-making, and helping customers achieve cost efficiencies.



PORT AND TERMINAL OPERATIONS FOR BULK CARGOES – Short Course

**28-31 MARCH
2023**

For anyone concerned about or responsible for the safe handling and storage of bulk materials in ports and on the sea

Course Leader: Mike Bradley, Professor of Bulk and Particulate Technologies and Director of The Wolfson Centre, University of Greenwich

abto
ASSOCIATION OF BULK
TERMINAL OPERATORS

 UNIVERSITY OF
GREENWICH

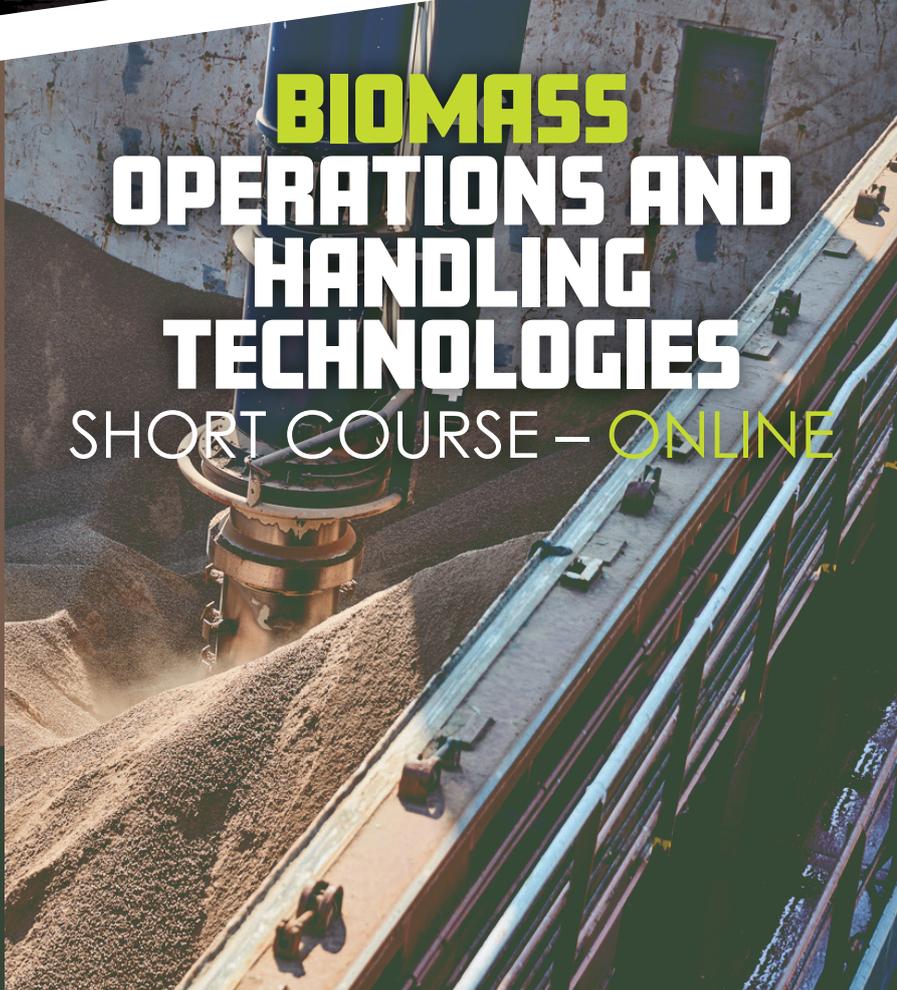
The Wolfson Centre
for Bulk Solids Handling Technology



**DESIGNED TO
HELP DELEGATES
IDENTIFY AND
RESOLVE COMMON
PROBLEMS
WHEN HANDLING
VARIOUS BIOMASS
MATERIALS**

**17-21 APRIL
2023**

**BIOMASS
OPERATIONS AND
HANDLING
TECHNOLOGIES**
SHORT COURSE – **ONLINE**



BULK TERMINALS LISBON 2023

THE ONLY EVENT AIMED AT THE ENTIRE BULK TERMINALS INDUSTRY

The Annual Conference of the Association of Bulk Terminal Operators (ABTO)

25-26 OCTOBER 2023

INCLUDING A BOAT TOUR OF LISBON HARBOUR AND BULK TERMINAL VISIT

Organised by

abto
ASSOCIATION OF BULK
TERMINAL OPERATORS

THE ONLY
EVENT AIMED AT
THE ENTIRE BULK
TERMINALS
INDUSTRY

The 2023 conference will set the scene with the traditional analysis of bulk markets, continuing with a full programme focused on the concerns of operators – offering sound practical solutions to terminal operators for improving safety, streamlining operations and ensuring environmental protection.

The conflict in Ukraine had a serious impact throughout 2022 on bulk trade flows. This will undoubtedly continue this year. And while the world may be opening up, the effects of covid-19 will continue to affect global supply chains. Lisbon will examine the impact of both 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

Port and local organiser



Porto de Lisboa

Supporting Organisations



Media Partners



For more details and to register, visit: bulkterminals.org/index.php/events

The beginning of a new era

The all-electric transshipment crane CBG 500 E
www.liebherr.com

LIEBHERR

Port and transshipment solutions

