BULK TERMINALS *international*

WINTER 2024/25

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

ON TRACK FOR SUCCESS

All the latest innovations to ensure smooth operations for ports and terminals

BIG PICTURE

Paints and coatings to increase efficiency and protect vessels

ONWARDS AND UPWARDS

Why investment in cranes and grabs is key to port productivity

abto
ASSOCIATION OF BULK TERMINAL OPERATORS

bulkterminals.org

THE POWER OF GREAT BULK HANDLING

Reduced handling costs, shorter turnaround times, reliability and flexibility: Nemag grabs give dry bulk terminals throughout the world that competitive edge they need in today's demanding market.

Driven to achieve the best performance, we closely listen to our clients' needs. For almost a hundred years, Nemag's innovative grabs make it possible to realize the highest productivity at the lowest costs.

Explore our comprehensive range of high-quality grabs and discover the power of great bulk handling.
From coal and iron ore to wheat, scrap metals, minerals and clinker: Nemag has the optimal solution for every dry bulk flow!

Contact us find out how we can take your bulk handling to the next level.

THE COMPLETE TOOLBOX

Take a peek

Scan the QR code

nemag®

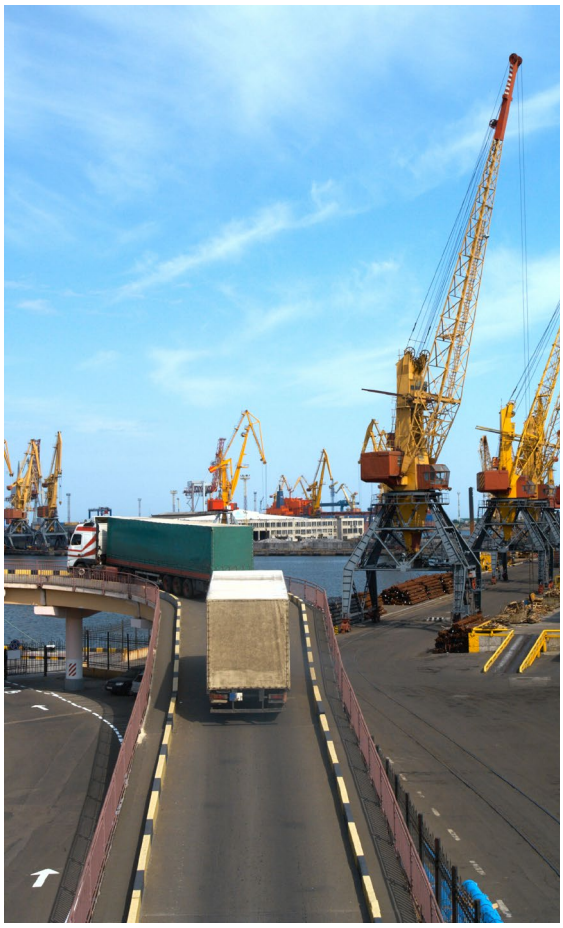
Deltastraat 15 • 4301 RC Zierikzee
T +31 (0)111 418 948 • **E** sales@nemag.com
nemag.com

Passion for Performance.

KEEPING AHEAD OF THE CURVE

BY SANDRA SPEARES

Bulk terminal operators and those that use their services continue to face a number of challenges as they set their priorities for the coming year



As cost pressures continue to be felt, many operators continue to battle with how to handle their time in the most efficient way possible. They also have an ever-growing number of choices to make on fuel use.

As the recent edition of the SMF confidence index shows (see page 9), a strong element of 'uncertainty' among different stakeholders was perceived as stymying progress in the development of a robust, global fuel supply infrastructure.

Such issues are not new to the maritime industry, which has been caught out in the past when seeking to ensure that it complies with new regulations as well as meeting the necessary deadlines. Equipment and operating facilities need to meet the necessary environmental criteria, as well as proving their efficiency. One example of this is in the paints and coatings sector. The latest products have to be eco-friendly on the one hand, while meeting the need to be fit for purpose on the other.

Technology also has a critical role to play in ensuring the most effective use of the port environment and there have been a number of new developments, which you can read about in this edition of *Bulk Terminals International*.

As ever, safety and security remain a top priority for the industry. We take a look at the growing problem of freight crime. Ensuring that cargoes and premises are adequately protected is essential to the running of any port facilility.

A number of these issues will be discussed at this year's not-to-be-missed ABTO conference, full details of which will be released soon.

We hope that you enjoy reading about some of the latest developments in the industry in this latest edition of *Bulk Terminals International*.

UNIVERSITY of GREENWICH

The Wolfson Centre
for Bulk Solids Handling Technology

THE WOLFSON CENTRE FOR BULK SOLIDS HANDLING TECHNOLOGY

AT THE UNIVERSITY OF GREENWICH, MEDWAY.

EXPERTS OFFERING CONSULTANCY ADVICE AND SHORT COURSES FOR ENGINEERS HANDLING POWDER AND BULK MATERIALS

»» ONLINE COURSES NOW AVAILABLE

CONSULTANCY SERVICES

Some of our Consultancy services include advising on:

- Storage and Discharge of bulk materials
- Pneumatic Conveying of bulk solids
- Spoiling of materials in storage and in transit
- Plant and Equipment design/redesign
- Ship Unloading/ quayside operations
- Control of plant wear
- Dust control
- Bulk Materials characterisation
- ATEX/DSEAR compliance
- Expert Witness services

SHORT COURSES FOR INDUSTRY

We also provide a range of short courses to help delegates identify potential bulk materials handling problems and advise on how to avoid and/or overcome these issues. They fall under 4 main categories

Pneumatic Conveying:

- Pneumatic Conveying of Bulk Materials
- Pneumatic Conveying System Design
- Rotary Valves; Design, Selection and Operational Issues
- Commissioning and Troubleshooting 'Hand's On' Pneumatic Conveying Systems

Storage of Bulk Materials:

- Storage and Discharge of Powders and Bulk Solids
- Design of Equipment for Storing and Handling Bulk Materials
- Biomass Handling, Feeding and Storage (can be adapted to other materials such as waste, recycled goods, pellets)

General bulk materials handling:

- Overview of Particulate Handling Technology
- Port and Terminal Operations for Bulk Cargoes
- Measurement of the Properties and Bulk Behaviour of Particulate Materials
- Dust Control in Processes

Specialist areas of concern:

- Caking and Lump Formation in Powders and Bulk Solids
- Undesired De-blending and Separation in Processes and Equipment
- Electrostatics in Powder Handling
- Numerical Modelling of Solids Handling and Processing
- Powder Handling and Flow for Additive Manufacturing

bulksolids.com +44 20 8331 8646

PUBLISHED BY abto ASSOCIATION OF BULK TERMINAL OPERATORS

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

INVEST IN THE BEST

SHIPLOADER
Fully mobile export system

ECO HOPPER
Dust free port operations

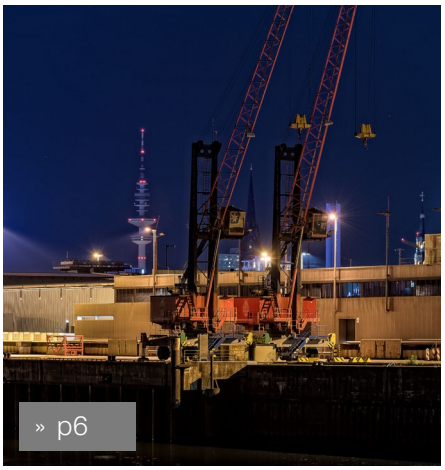
STORMAJOR®
Loading, unloading and stockpiling

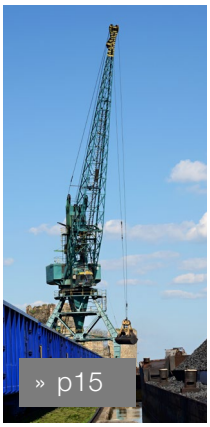
WE CONVEY QUALITY

SAMSON Materials Handling Ltd
sales@samson-mh.com
www.samson-mh.com

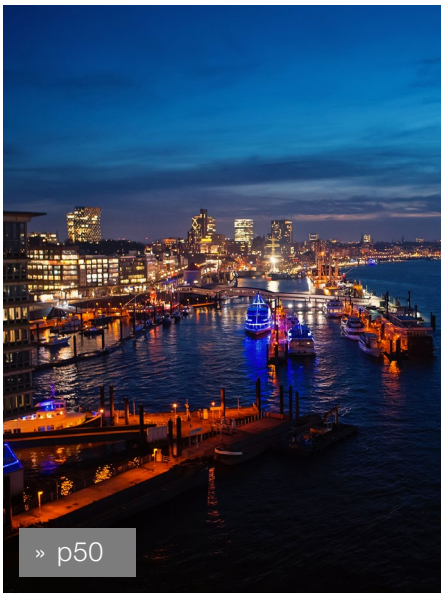
SAMSON
AUMUNDGROUP

CONTENTS


» p6


» p15


» p31


» p50

01 EDITOR'S LETTER

Sandra Speares on the challenges bulk terminal operators face as they set their priorities for the coming year

06 WELCOME

ABTO CEO Simon Gutteridge looks ahead to ponder the industry's prospects for 2025

08 WORLD NEWS ROUND-UP

All the latest industry initiatives, products and partnerships from across the globe

15 CRANES AND GRABS

Investment in equipment is essential to boost efficiency in ports at a time when financial pressures are most demanding

22 VIEWPOINT: CONVEYORS

Martin Engineering is responding to the US new dust emissions rule with simple solutions for staying compliant

24 CEMENT

In a challenging market, forecasts for demand may prove to be less positive than previously thought

27 VIEWPOINT: CARGO HANDLING

Cargo handling systems remain an under-debated area of technological innovation, despite their huge potential

31 PAINTS AND COATINGS

New eco-friendly paints and coatings help ships stay free of contaminants as well as improve their efficiency

34 TECHNOLOGY

New innovations play an important role in ensuring that vessels are better maintained and more efficient

38 PORTS AND TERMINALS

Terminal operators and users face a number of financial challenges, alongside operational constraints

42 SHIPBUILDING AND REPAIR

New environmental rulings on shipbuilding and repair pose a challenge for owners and operators

45 SAFETY

New IMO rules relating to charcoal cargo have come into force and BIMCO has issued advice on the rulings

48 SPOTLIGHT: CHINA

Why Donald Trump's victory in the US presidential election is "a step in the wrong direction" for international trade

50 SPOTLIGHT: GERMANY

A host of new innovations and investments are having a transformative effect on port operations

55 SPOTLIGHT: ITALY

A report has shone a spotlight on the evolving nature of freight crime in Italy and the steps needed to combat it

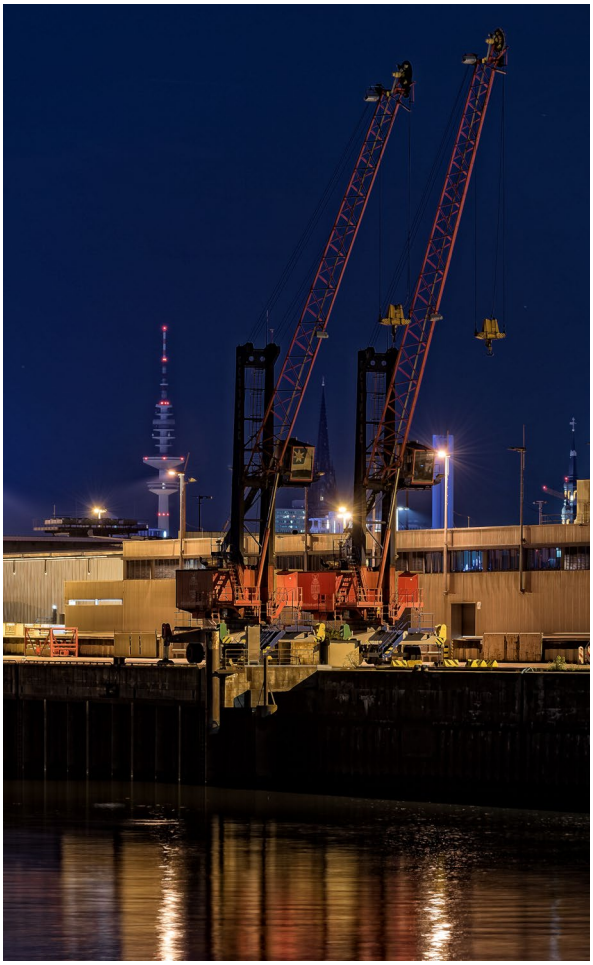
56 EVENTS

Events from around the globe

TIME TO REFLECT

BY SIMON GUTTERIDGE

Welcome to our first edition of *Bulk Terminals International* in 2025. As we look forward to rest of the year, what will be the likely prospects for our sector?



All things being equal, the global economic outlook in 2025 is expected to stabilise, with a projected GDP growth rate of approximately 3.5%. Emerging markets in Asia, Africa, and Latin America continue to drive demand for raw materials, fostering growth opportunities for dry bulk terminals.

China, the world's largest importer of iron ore and a major player in coal and grain imports, remains pivotal. Despite its gradual economic slowdown, China's policies on infrastructure development and urbanisation sustain robust demand for raw materials. Similarly, India's industrial growth and infrastructure push could further bolster the demand for bulk commodities

In contrast, developed economies may exhibit slower growth, but stable consumption patterns in key industries such as steelmaking and agriculture ensure a steady flow of bulk commodities

North American terminals benefit from strong agricultural exports and steady demand for industrial raw materials. Ports in the United States and Canada are focusing on enhancing efficiency and sustainability to remain competitive in the global market.

European terminals face challenges related to stringent environmental regulations and declining coal demand. However, the region's transition to renewable energy and circular economy initiatives presents opportunities for innovation and diversification.

Infrastructure development and regional trade agreements are driving growth in the Middle East and Africa. Investments in port expansion and modernisation are helping terminals cater to rising demand for bulk commodities like cement, bauxite and agricultural products.

Latin America's abundant natural resources make it a key player in the dry bulk market. Terminals in Brazil and Argentina

are capitalising on strong agricultural exports, while investments in port infrastructure are improving connectivity and efficiency.

Political and geopolitical factors

Previously studying supply and demand, factoring in uncertainties stemming from inflationary pressures and fluctuating commodity prices would be sufficient to make fairly accurate predictions.

However, to the same geopolitical tensions that have previously been discussed here – the conflicts in Ukraine and the Middle East – we now have to add rising tensions between China and Taiwan.

The Trump administration and slew of tariffs adds another layer of uncertainty – not just in terms the of how difficult it is to predict his administration's reaction to these geopolitical factors, but also as to far it will go with economic protectionism and the knock-on effect that will have on liberal world trading order. Ongoing economic rivalry between the US and China will affect trade volumes, impacting terminals reliant on specific trade routes.

Resource nationalism, with policies favouring domestic resource utilisation could alter export volumes from resource-rich nations. Also new trade pacts in Asia, Africa, and Latin America may foster increased intra-regional trade, creating opportunities for local terminals.

Commodity demand

Assuming no major upsets, what will be the demand for the different dry bulk commodities? Iron ore, primarily used in steel production, remains a critical cargo for the dry bulk market. In 2025, global steel production is projected to grow moderately, driven by urbanisation and industrial activities in Asia, Africa, and Latin America. China's focus on high-quality ore to reduce emissions and India's infrastructure push will sustain high demand for terminals specialising in this cargo.

However, decarbonisation efforts in developed nations, coupled with increased recycling of steel, may limit growth in seaborne iron ore trade.

Coal demand presents a mixed picture. While renewable energy sources continue to gain traction globally, coal remains a dominant energy source in many developing countries. Countries like India and South-east Asian nations are expected to increase their coal imports to meet energy requirements, offsetting declines in Europe and North America.

Global agricultural trade is set to grow steadily in 2025, underpinned by rising population and consumption in emerging markets. The Black Sea region, North America and South America will continue to dominate grain exports. However, as well as the geopolitical tensions already mentioned, climate-related disruptions could impact trade flows and freight rates, creating both challenges and opportunities for the dry bulk sector.

The minor bulks, including cement, bauxite, fertilisers and steel products, represent a diverse and growing segment. Infrastructure projects in developing countries, particularly in Africa and South East Asia, are expected to boost demand for these commodities. Additionally, the green energy transition will spur demand for raw materials like bauxite and nickel, vital for renewable energy technologies and battery production.

Environmental regulations and sustainability

Achieving environmental compliance is a major issue for dry bulk terminals in 2025. The International Maritime Organization's (IMO) 2030 and 2050 emissions targets have accelerated the adoption of sustainable practices.

Terminals are investing in technologies to minimise their environmental impact such as dust suppression systems to reduce particulate emissions during cargo handling, or the electrification of equipment in the transition from diesel-powered to electric equipment to reduce greenhouse gas emissions and align terminals with global sustainability goals. The need for investment in abatement technologies to ensure compliance with new regulations will put pressure on smaller terminals.

The elephant in the room of climate change, the cause rising of sea levels and extreme weather events (which has barely been considered, still less prepared for) will necessitate costly adaptations for all bulk terminal operators – if not this year, then soon enough.

Technological innovations

Technological advancements are transforming dry bulk terminal operations, enabling them to achieve higher efficiency and resilience. In 2025, several innovations will start to have an impact. Digital twin technology utilises real-time virtual models of terminal operations enhance decision-making, optimise resource allocation, and predict maintenance needs.

AI and machine learning technologies enable predictive analytics, helping terminals to anticipate demand fluctuations, optimise scheduling and manage inventory more effectively. Blockchain technology streamlines supply chain processes, minimising delays and improving reliability. While beneficial, integrating advanced technologies requires significant investment and expertise, which may be challenging for smaller operators.

Conclusion

In conclusion, the prospects for dry bulk terminals in 2025 will be shaped by a combination of global economic trends, technological advancements, environmental imperatives and regional dynamics.

Enjoy the winter edition of *Bulk Terminals International*.

Simon Gutteridge
Chief Executive
ABTO
ce@bulkterminals.org
www.bulkterminals.org

WORLD NEWS ROUND-UP

Marine fuel confidence seems to be the name of the game, according to a recent edition of the SMF Confidence index

In the second edition of the Sustainable Marine Fuel (SMF) Confidence Index, published recently, biodiesel topped the poll, pushing the 2023 winner, LNG-biomethane, into second place, while LNG e-methane retained its third position in the rankings.

Apart from the three frontrunners, confidence levels appear to have dropped across the candidate fuels year on year. Confidence in green methanol has fallen from 53.5% in 2023 to 40.6% and green hydrogen, from 42.7% to 29.2%.

Moving to the bottom of the Index, confidence in blue hydrogen dipped from 34.5% to 18.8%, and grey hydrogen, from 33.2% to 13.9%.

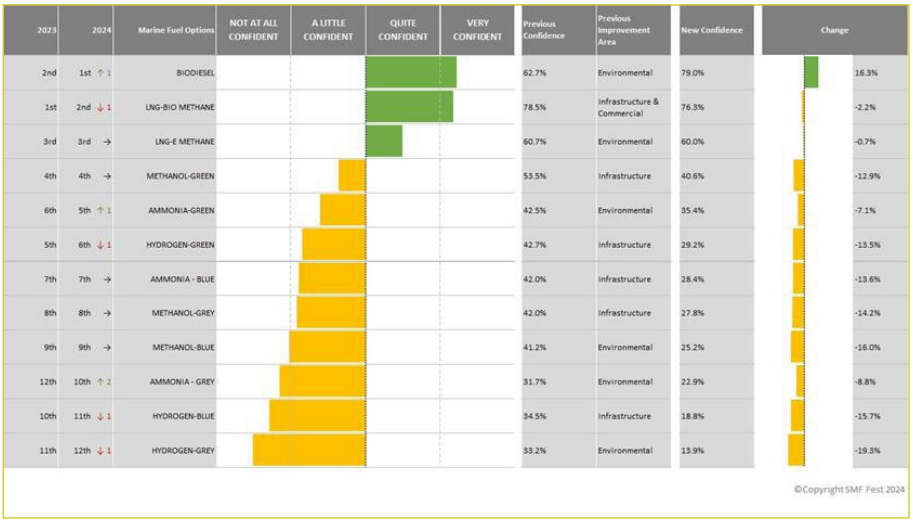
In 2023, confidence levels in methanol-fuelled shipping were very measured, in spite of a clear upswing in orders that year for methanol fuelled-vessels. However, last year's confidence levels in this fuel now look to have been quite bullish in comparison with 2024 voting, as green methanol has retreated from the 'quite confident' category into the 'little confidence' zone.

Among the green fuel variants, green ammonia moved up the pecking order, swapping places with green hydrogen, while there was little movement year-on-year between the blue fuel variants.

For the grey fuel variants, methanol retained its 2023 position, ammonia moved up two places from the bottom of the Index, while grey hydrogen dropped into last position.

The first SMF Confidence Index was launched at the inaugural Sustainable Marine Fuel Fest held in Valencia, Spain, in November 2023, with the intention to provide a 'moment in time' indication of how confident shipping and marine fuel industry stakeholders are that the groundwork required for maritime's energy transition, including its infrastructure and technology, is in place.

It is not a forecast of how likely it is that the shipping sector can meet the International Maritime Organization's decarbonisation end-of-decade milestones, out to 2050, but it does fill an information/perception gap that currently exists in the sector.



2023	2024	Marine Fuel Options	NOT AT ALL CONFIDENT	A LITTLE CONFIDENT	QUITE CONFIDENT	VERY CONFIDENT	Previous Confidence	Previous Improvement Area	New Confidence	Change
2nd	1st ↑ 1	BIODIESEL					62.7%	Environmental	79.0%	16.3%
1st	2nd ↓ 1	LNG-BIO METHANE					78.5%	Infrastructure & Commercial	76.3%	-2.2%
3rd	3rd →	LNG-E METHANE					60.7%	Environmental	60.0%	-0.7%
4th	4th →	METHANOL-GREEN					53.5%	Infrastructure	40.6%	-12.9%
6th	5th ↑ 1	AMMONIA-GREEN					42.5%	Environmental	35.4%	-7.1%
5th	6th ↓ 1	HYDROGEN-GREEN					42.7%	Infrastructure	29.2%	-13.5%
7th	7th →	AMMONIA - BLUE					42.0%	Infrastructure	28.4%	-13.6%
8th	8th →	METHANOL-GREY					42.0%	Infrastructure	27.8%	-14.2%
9th	9th →	METHANOL-BLUE					41.2%	Environmental	25.2%	-16.0%
12th	10th ↑ 2	AMMONIA - GREY					31.7%	Environmental	22.9%	-8.8%
10th	11th ↓ 1	HYDROGEN-BLUE					34.5%	Infrastructure	18.8%	-15.7%
11th	12th ↓ 1	HYDROGEN-GREY					33.2%	Environmental	13.9%	-19.3%

THE LATEST SMF CONFIDENCE INDEX

The Index charts and compares changes in industry confidence in shipping's energy transition according to four key criteria (Technology, Infrastructure, Commercial and Environmental Credentials) and across five deep sea vessel segments: containerships, dry cargo, gas carriers, passenger vessels and tankers.

These criteria/vessel segments are considered in relation to the use of 12 marine fuels (including grey/blue/green variants).

The new edition of the Index shows that the dial on shipping's decarbonisation has moved in some important respects as industry stakeholders are become more informed about the energy transition process and its challenges.

There is increased awareness of the environmental credentials of the alternative fuel options, and the conversation is moving on to focus on the commercial landscape for these energy sources, in terms of their availability, scalability and cost.

Voting for the 2024 Confidence Index and discussing its outcomes was a key element of this year's 'by industry for industry' Sustainable Marine Fuel Fest (SMF Fest) which took place in Porto in October.

The framework for the Index was developed by the event's industry partners who represent companies that that are proactive in delivering shipping's fuel transition. The industry partners involved in the 2024 event were Bureau Veritas, GTT, Hapag-Lloyd, SGMF and Wärtsilä. The participants in this year's Fest represented a wide range of stakeholders across the marine fuel value chain.

The results of the 2024 Confidence Index can be seen as a fair reflection of the tenor and tone of the many conversations in Porto.

There was close discussion about the production processes for the new fuels in shipping's energy mix as well as the availability (and cost) of green variants of these fuels. "No-one will pay more than they have to for the new fuels" was an oft-repeated phrase in conversations. Some participants also questioned the near- and longer-term future of the blue iterations of ammonia, hydrogen and methanol.

A lack of demand signals for fuels from shipowners was a key topic and a strong element of 'uncertainty' among different stakeholders was perceived as stymying progress in the development of a robust, global fuel supply infrastructure. Shipowners are unsure

about future fuel choices because they are not getting clear messaging from charterers about fuel preferences and routing schedules.

Owners may also be 'buying time' and opting for the cheapest fuel solutions while they decide on future fuel strategies, but there was consensus in the room that those owners and operators who can pass through fuel costs are better placed to take earlier and bolder decisions on new fuels.

Concern was also expressed over the future volumes of low- and zero-carbon fuels, particularly over the time taken for final investment decisions on production projects to be taken and the fact that only a small percentage of such projects stay the course and move to commercialisation.

The increasingly complex landscape of regulation and legislation also loomed large in discussions, particularly in relation to compliance obligations and cost implications, with the consensus being: "we don't need any more regulation – work with what we have".

A key takeaway from SMF Fest 2024 was that decision-making on future fuel strategies remains slow and cautious – while there are some (large and small) first movers at this stage in the energy transition, there are still not many 'close followers'.

The Confidence Index will be fully updated at the next SMF Fest, which will take place in autumn 2025.

FIGHTING FREIGHT CRIME

TT Club recently applauded the UK Parliament's calls for more resources to tackle freight crime.

The specialist freight transport insurer has long campaigned for heightening awareness of freight crime and the need for additional security and policing resources. TT therefore greatly welcomed the recent cross-party parliamentary debate on the issue, and the resulting support for increased governmental resource to resolve the growing risk.

The UK's House of Commons debate held in December was a significant step in highlighting an issue that has a high degree of impact on public safety and the UK's economy, in particular its future growth much relied upon by the current government. It also acknowledged the lack of resource specifically targeted at fighting freight crime.

TT has long supported the National Vehicle Crime Intelligence Service (NaVCIS) financially and practically, but says it is generally under-supported and under-funded. Its specialist freight crime investigation team currently has just one full-time serving police officer on secondment, a part-time analyst and a part-time data entry clerk. It does not have the resources to tackle organised crime on a national scale.

Mike Yarwood TT Club's Loss Prevention MD, says: "We very much welcomed the airing of this issue at a legislative level. The detailed aspects of both opportunistic and well planned theft; the lack of secure overnight parking facilities; the identification of crime hotspots as well as concerns over driver safety, which is discouraging female recruits, were all discussed and their significance put into perspective as priorities to be addressed."

The UK's road haulage industry, which moves 89% of all goods and 98% of agricultural and food products in the country contributes £13.5bn to the economy. This represents 5.6% of the UK's GDP. Every pound generated by the logistics industry creates three pounds down the supply chain and contributes to the economy, highlighting the widespread impact of freight crime for the UK.

Pointing to these facts, Rachel Taylor MP, who led the parliamentary debate outlined the principle political implication, "Tackling freight crime is essential to achieving the government's five missions," she said.

TT will maintain its efforts. Yarwood is vice-chair of the industry-led HGV Parking Capacity and Standards Task and Finish group, which the UK's Department for Transport helped establish. He is also leading the workstream focused on standards at lorry parking facilities and working with NaVCIS Freight and other industry stakeholders is producing an industry led report, which will advise the government on recommendations to reduce freight crime.

"Our report is aimed at providing a detailed analysis of the current state of freight crime and offer practical solutions to enhance security and reduce incidents," Yarwood says. "In underscoring the importance of industry and government working together to safeguard the logistics sector, we hope our collaboration will encourage others to add their weight to the efforts fight crime."

IMSBC CODE AMENDMENTS

The New Year heralded the entry into force of new regulations including major amendments to the International Maritime Solid Bulk Cargoes (IMSBC) Code. The amendments under Amendment 07-23 are:

- Revised cargo information to be given by the shipper to include "bulk density"
- Revised cargo information and declaration form to incorporate bulk density
- New Direct Reduced Iron cargo introduced to the Code
- Re-classification of fish meal from Group B, UN 2216 to MHB cargo
- 14 new cargoes added
- Revised IMO circular for list of solid bulk cargoes exempted from fixed gas fire extinguishing system incorporating some of the new cargoes
- Updated list of non-cohesive cargoes as per Appendix 3 to cover the new non-cohesive cargoes.

Note that Amendment 06-21 is only in force until 31 December 2024, and Amendment 07-23 will become mandatory on 1 January 2025.

The BIMCO Cargo section contains also a new cargo database covering all cargo schedules including the cargo description and carriage requirements in accordance with Amendment 07-23.

The new IMSBC Code & Supplement 2023 Edition, incorporating amendment 07-23 is available from specialist book sellers, price £95.

INTERCARGO YEAR

The International Association of Dry Cargo Shipowners (Intercargo) marked a transformative year in its 2023-2024 Annual Review, launching major initiatives while reaching record membership levels amid growing industry challenges.

Outgoing Chairman Dimitri Fafalios reflected on key developments during 2024, including the August launch of the Dry Bulk Centre of Excellence (DBCE) and its DryBMS portal, demonstrating the sector's dedication to operational excellence. The Association marked another milestone with its first-ever report communicating its messaging via environmental, social and governance and showcasing progress in environmental stewardship, social responsibility and governance.

Safety maintained its position as the foremost priority, with the latest *Bulk Carrier Casualty Report* revealing positive trends in ship loss reduction despite fleet growth. However, the organisation emphasised that continued vigilance remains essential, particularly regarding cargo liquefaction risks.

The Review addresses critical challenges, including the implementation of the International Maritime Organization's net-zero emissions target, maritime security concerns in the Red Sea region, and the implementation of the Ballast Water Management Convention's.
The publication offers detailed insights into the Association's technical work, policy positions and stakeholder engagement throughout the year and is available at: intercargo.org

Inspection timeline

Intercargo welcomes RightShip's recent announcement of a revised age trigger inspection timeline, following a constructive dialogue between the sector's stakeholders, with Intercargo at the forefront as the representative body and voice of dry bulk shipping.

Intercargo's Chairman Elect, John Xylas, says: "We are particularly pleased to have also formalised an agreement with RightShip for regular structured consultations. This collaboration will strengthen our active engagement and ensure that Intercargo's membership of dry bulk shipowners and operators, continue to contribute meaningfully in the development of pragmatic industry initiatives that genuinely promote safety and sustainability."

AMMONIA REQUIREMENT CUT

In light of the evolving regulatory landscape for ammonia as a maritime fuel, and the recent finalisation of the International Maritime Organization's (IMO's) draft interim guidelines on ammonia, the International Association of Classification Societies (IACS) announced the withdrawal of Unified Requirement UR H1, "Control of Ammonia Releases in Ammonia Fuelled Vessels", ahead of its scheduled implementation date of 01 January 2025.

This decision ensures alignment with the IMO guidelines and creates a clearer regulatory environment as ammonia use expands within the maritime sector.

The decision to withdraw UR H1 stems from the differences between its safety parameters and those outlined in the IMO Interim Guidelines. The IMO Sub-Committee on Carriage of Cargoes and Containers, at its 10th session, finalised the draft interim guidelines for the safety of ships using ammonia as fuel, with a view to approval by MSC 109.

These guidelines include several differences from IACS's original UR H1 requirements. The IMO Interim Guidelines establish a 220ppm threshold for acute exposure, without defining a hazardous concentration, and require preventing direct ammonia release during normal and controllable abnormal scenarios, which may exclude releases from leakages.

Toxic areas have been defined, requiring gas dispersion analysis to demonstrate concentrations do not exceed 220ppm in key locations. An ammonia release mitigation system is required to maintain outlet concentrations below 110ppm, with alarms for exceedances. Additionally, alarms must activate at 110ppm with system shutdown at 220ppm, while a visual indication is required at 25ppm near entrances to affected enclosed spaces. These differences could potentially lead to confusion within the maritime industry.

To ensure consistency and reduce the potential for conflicting interpretations, IACS has decided to withdraw UR H1 with a view to publishing a revised version that aligns with the IMO guidelines. The revised UR, to be published later this year, will provide a consistent regulatory framework for the safe adoption of ammonia and will provide the necessary safety framework for ammonia-fuelled vessels while aligning with best practices and international guidelines.

CHARCOAL CARRIAGE

New Guidelines for the Safe Carriage of Charcoal in Containers have been issued by the Cargo Incident Notification System (CINS), with the cooperation of the international Group (IG) of P&I insurance providers and TT Club. The regulatory requirements for transport by sea are outlined and additional precautionary measures proposed.

CINS, a safety initiative representing container shipping lines and maritime insurance interests has launched its latest advisory publication, *Guidelines for the Safe Carriage of Charcoal in Containers*. It contains the provisions set out in the maritime dangerous goods regulations for the transport of this potentially combustible commodity, which is commonly shipped in volume, explaining these measures and providing additional guidance for all involved in this complex international supply chain.

The packaging, declaration and transport of charcoal must comply with the International Maritime Dangerous Goods (IMDG) Code. Significant new provisions have been agreed by the IMO (Amendment 42-24) and came into transitional effect from 1 January 2025 with mandatory compliance required as of 2026. The Amendment means charcoal will no longer benefit from any IMDG code exemption. The Guidelines, however, strongly recommend early

adoption of the new regulations and explain in detail how compliance may be achieved.

The CINS Guidelines, prepared and published in conjunction with the IG and international freight and logistics insurer TT Club, state: "It is estimated that global production of charcoal for domestic and export markets is over 50 million tonnes per year. From the incident records created by CINS members, it is known that there were at least 68 fire incidents on board ships between January 2015 and December 2022. Most of these incidents were caused by misdeclared cargo and therefore the carrier was not aware of the hazards presented."

The practices set out in the document are intended to address safety concerns, recognising that the key driver for change arises from charcoal intended as a fuel for burning. The guidance also notes that there are other technical types of charcoal, such as used for art materials, which have a different risk profile, urging carriers to establish effective due diligence processes.

In view of the sensitivity of this fuel cargo and history of incidents, the publishers are recommending that it should be treated as dangerous goods, regardless of current or previous regulatory provisions. It is vital to ensure that this cargo is properly prepared, declared and packaged for safe transportation.

To download the Guidelines, visit: cinsnet.com

FUELEU IMPACT

On 1 January 2025, the FuelEU Maritime Regulation came into force. The latest addition to the BIMCO portfolio is the FuelEU Maritime Clause for Time Charter Parties 2024, which is designed for incorporation into time charter parties.

"This clause has been eagerly awaited by the industry. The FuelEU Maritime regulation is complex. Because of this, we have carried out several industry consultations during the drafting process to make sure that we arrived at a clause that works in practice," says Stinne Taiger Ivø, Deputy Secretary General and Director of Contracts at BIMCO.

The focus of the subcommittee has been on developing a standard clause that is workable for most scenarios and

commercial relationships. For longer period charter parties, the charterers will have the flexibility to decide on their compliance strategy whether that be utilising pooling, banking or borrowing.

"The FuelEU Maritime regulation will significantly impact the shipping industry, even more so than the EU Emissions Trading System. The clause we have adopted today is the result of a collaborative process between owners, charterers, P&I and legal experts and other stakeholders," says Nicholas Fell, Chair of BIMCO's Documentary Committee.

The company responsible for compliance with FuelEU Maritime under the new BIMCO clause is the shipowner. In reality, however, it may be a third-party shipmanager who has agreed to take over all the duties and responsibilities imposed by the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM).

BIMCO is therefore working on developing a clause for BIMCO's ship management agreement, SHIPMAN.

In December last year, the Documentary Committee adopted a new Emission Trading Scheme Allowances Clause for BIMCO's SHIPMAN and three ETS clauses for Voyage Charter Parties. Moreover, in June this year, the Documentary Committee adopted three ETS clauses for Contracts of Affreightment.

Other published decarbonisation clauses in BIMCO's carbon clauses portfolio include the Emission Trading Scheme Allowances Clause for Time Charter Parties, CII Clause for Voyage Charter Parties, CII Operations Clause for Time Charter Parties and the EEXI Transition Clause for Time Charter Parties.

LNG PATHWAY GROWS

SEA-LNG notes that while the approximately 2,200 liquefied natural gas (LNG)-fuelled vessels and LNG carriers represent only 'two minutes into the hour' of the global fleet of approximately 60,000 deep sea vessels, it remains an adolescent fuel that is maturing significantly faster than other alternatives.

However, the LNG pathway still needs more investment, especially in landside facilities for liquefaction near ports, bio and synthetic methane production and bunkering capacity worldwide.

Peter Keller, Chairman, SEA-LNG, says: "There are approximately 60,000 deep sea ships on the water and, today, we're looking at around 600 LNG capable ships afloat with a further 600 on order. There are another 1,000 LNG cargo carriers and bunker vessels of varying sizes. While that's a small percentage of the global fleet, as the clock ticks towards shipping's emissions reduction targets, the LNG pathway is maturing far faster than other alternative fuels."

According to DNV there are currently 54 methanol vessels and two ammonia vessels on the water.

There are aspects of LNG usage that are fully mature – safety for one. LNG is easy to transport, poses minimal, if any, risk to marine environments, has a low flammability range and is non-toxic. Effective regulations, standards and guidelines for safe operations are widespread, and LNG has been shipped around the world for almost 60 years without any major incidents at sea or in ports.

Keller continues: "When compared with traditional fuels, LNG is more of a teenager with all the growing pains, challenges and victories associated with adolescence. But it is maturing all the time as the market continues to grow, new build orders continue to rise, and the LNG pathway with biomethane and eventually e-methane produced from renewable hydrogen, gains acceptance globally.

"Shipping stakeholders are investing in LNG because it provides a low risk, incremental pathway for decarbonisation, starting now. The other alternative fuels are basically toddlers by comparison. And when it comes to safety, some are mere newborns!"

This year has witnessed unprecedented investment in the maturing and scaling of LNG from shipowners. LNG is starting to dominate as the preferred future fuel pathway. However, the bunker market, while growing substantially, is lagging and concerns persist regarding the ability to supply the rapidly growing fleet of LNG-fuelled vessels.

Keller notes: "With high-profile owners now choosing the LNG pathway, we anticipate this trend will continue and accelerate through 2025 and beyond. As the various alternative fuel pathways mature, there is a growing realisation that, despite previous aspirations, some alternative fuel pathways – like the LNG pathway – are more practical and realistic than others.

"While investment in newbuild LNG-fuelled ships is robust, we need to see the same for bunker vessels, supply and liquefaction infrastructure. As the LNG pathway continues to mature and the use of liquefied biomethane and eventually e-methane increases, the delivery of the fuel to vessels must be assured and the investment gap closed."

Another critical need in the maturing process during a period of increased regulation of carbon emissions is the adoption of standardised chain of custody models on a worldwide basis.

Chain of custody models are becoming increasingly important to maritime decarbonisation as they provide mechanisms to verify that the fuels used are low carbon. Such verification creates investor confidence in new fuel supply chains and accelerates the transition to low-carbon fuels, enabling early adoption in conditions of limited supply.

They will create a market for green fuels by connecting buyers to fuel producers away from bunker ports enabling faster scaling and providing flexibility to shipping companies at lower cost.

Keller concludes: "As LNG and the pathway to net zero ascends to adulthood in the coming years, the rewards that our environment reaps will be significant and realistic – given how well we have matured and how conscious we were of what needed to be accomplished".

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.

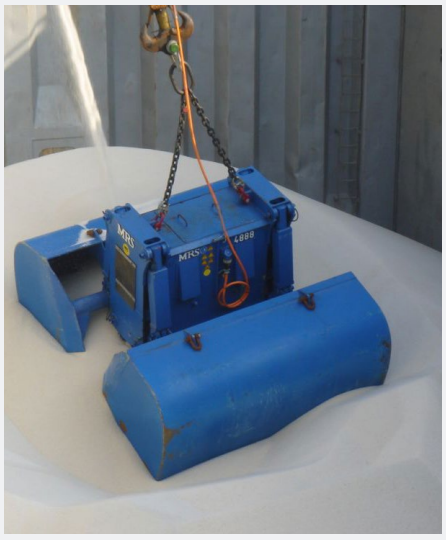
We design grabs to fully meet the needs of our clients and the parameters within which they work, producing equipment capable of unloading all kinds of bulk cargo. Our machines include the latest features and are of optimal weight, ensuring an exemplary performance for a longer period of time. When it 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.

MRS GREIFER

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



HIGH POINTS

Investment in cranes, grabs and other lifting equipment is essential to boost efficiency in ports at a time when financial pressures are at their most demanding

New cranes introduced at the Port of Hamburg are among some of the most innovative to date. Hamburger Hafen und Logistik (HHLA)'s Container Terminal Altenwerder (CTA) obtained three new highly automated container gantry cranes. The remote-controlled cranes are the first of their kind at the Port of Hamburg. HHLA is aiming to increase the efficiency of its container ship handling operations even further in the future.

The gantry cranes arrived at CTA in December 2024, on board the special ship *Zhong Ren 121*. They were delivered partially assembled from Ireland by Liebherr. With a total height of up to 120m when raised and a jib length of around 70m, they are equipped to handle ship sizes of up to 16,000teu.

The gantry cranes will be installed on the quayside of berth 1 at CTA and then begin operating on a gradual basis. In the coming years, the 14 container gantry cranes at CTA will all be replaced by highly automated models. Manufacturing of the next three container gantry cranes has already started. They are expected to arrive at CTA in 2026.

Angela Titzrath, CEO of HHLA, says: "The arrival of the first remote-controlled container gantry cranes marks a key step in the modernisation of our terminals at the Port of Hamburg. With this investment, we are strengthening the competitiveness of our facilities and laying the foundation so that we can continue to offer our customers outstanding services in the future.

"Since its construction, CTA has shaped the standards within the industry and is once again leading the way today in innovation and efficiency."

The new gantry cranes set new standards in technical innovation and efficiency. Ships can be processed even faster and more smoothly at CTA in the future. The cranes will be operated semi-automatically and remotely, so that in the future, gantry crane operators will monitor and control them from a modern remote control station in the office building.

Employees will also be able to rely on extensive automated assistance when loading and unloading the ships. In addition, the cranes have an optical character recognition (OCR) system that digitally records the containers automatically. This allows an automatic comparison to be made with the container information digitally registered in advance.

Rebecca Vick, Director Container Development Hamburg, says: "The arrival of this innovative container gantry crane technology at CTA represents a significant advancement in terminal operations. This development is a key part of our ongoing efforts to enhance efficiency, further boost automation, and ensure the terminal remains sustainable and future-ready."

A central element of the training is the training in a realistic simulation environment. The simulator developed for this purpose is being created as part of the DigiRemote2030 project.

The cranes will begin operating on a gradual basis during 2025. First, the gantry cranes' drive systems will begin operating, followed by the automated functions and remote controlling. Simultaneously, the container gantry cranes will be extensively tested. Adjustments to the IT system and the integration of the cranes into the terminal control system at CTA will also be required.

Patrick Krawutschke, CTA Managing Director, says: "In addition, we are committed to continuously investing in the development and training of our employees. To support the introduction of this innovative crane technology, we are implementing extensive qualification programs. Together with our team, we look forward to seamlessly integrating the new cranes into our operations."

With the opening of CTA in 2002, HHLA made its mark on port logistics and paved the way to the future. New, promising technologies that have proved successful at CTA are used today at terminal facilities worldwide. Moreover, due to its high degree of automation, CTA is playing a major role in the creation of new job profiles in the port.

Innovation and technical excellence are keys for HHLA to develop sustainable solutions. These enable the company to continue to operate in an environmentally responsible and commercially successful way. For this reason, HHLA has invested more than €1bn in its port logistics subgroup in the past five years, around 40% of which has been spent on modernising its container terminals in Hamburg.

VIETNAM ORDER

Konecranes has supplied five 25-ton CXT Double Girder Cranes to Vietnam's VinFast Auto, bringing the total number of cranes delivered to the automaker to 25. This latest order, which also includes Truconnect Remote Monitoring, was placed in June 2024, with testing and commissioning currently in its final stages.

To help scale up production capabilities, Konecranes has equipped VinFast's latest manufacturing facility with five 25-ton CXT Double Girder Cranes featuring Truconnect Remote Monitoring. This technology provides real-time data and insights on crane performance and usage through advanced sensors and connectivity.

Accompanied by a three-year maintenance contract, this setup will enhance the safety and productivity of VinFast's crane operations. Additionally, the cranes are equipped with dual hoists on a single trolley and a 120m runway, enabling seamless integration into VinFast's production workflow.

Trinh Van Ngan, Deputy CEO of Manufacturing of VinFast Auto, says: "At VinFast, we are committed to collaborating with trusted and capable partners to achieve our production goals and expand into global markets. Konecranes has consistently proven the quality of its material handling solutions, backed by professional support services and swift responsiveness, helping us

CELEBRATING
80
YEARS OF INNOVATION

SHIPSHAPE BULK MATERIAL HANDLING

ApronSeal™ Skirting

Impact Cradle HD

Trac-Mount™ Idler

Dust Curtain

When bulk material transfer systems are properly designed and maintained, overall operations run cleaner, safer and more efficiently. Martin Engineering produces the most innovative conveyor components in the industry. Our double-seal skirting, belt cradles and idlers maintain a stable, well sealed belt line to prevent material spillage. Transfer point kits and dust curtains settle turbulent airflow and mitigate airborne dust at its source.

You can always rely on Martin® to maximize production, safety and profitability. Think Clean.®

martin® engineering

maximize production efficiency and elevate operational safety."

VanHuy Mai, Country Director for Konecranes Vietnam, says: "The quality of our products and regular service help ensure reliable production for VinFast. For this latest order, we further leveraged Konecranes' global manufacturing facilities to achieve shorter lead times, which proved highly beneficial for the customer.

QUICK COUPLER

The Mantsinen Automatic Quick Coupler (MCA) has recently been introduced with the aim of improving connectively in ports and facilities.

The MCA enables a fast, easy and safe change of attachments. With the possibility to connect the attachments and needed hydraulic lines and electrical connections automatically from the operator's cabin in just a few minutes, the product is set to transform how the switch between different attachments is managed on-site.

The MCA is designed to enhance the efficiency, safety and flexibility of material handling operations. The MCA not only speeds up the change between attachments, but also ensures safer working conditions. Operators no longer need to leave their cabin to manually connect hoses, reducing the risk of accidents and connection errors, says Jani Jonninen, Area Sales Director at Mantsinen Group.

Designed with long-term cost savings in mind, the product also eliminates the need for additional personnel during attachment changes. This automatic system ensures that the process is both secure and accurate, offering a reliable and seamless solution for a wide range of tasks.

The MCA is available in two sizes: the smaller MCA30 (SWL 30t) for Mantsinen 60–160 machines and the larger MCA60 (SWL 60t) for Mantsinen 200 and 300 machines. Both models use the same adapter, so it is possible to cross-use attachments for both coupler sizes – offering operational flexibility and reducing the need for multiple adapters. The solution is also available as retrofit for older machines and attachments.

The system supports hydraulic, electric, and CANbus connections, making it suitable for a wide range of attachments and tasks. Additionally, the dust and dirt protection of the adapter connectors ensures long-lasting performance even in challenging environments.

Mobile harbour crane

A new Mantsinen mobile harbour crane has arrived at the ATO terminal in the Port of Antwerp from Finland.

The crane, which will ultimately be delivered to Van Moer Logistics' container terminal in the Port of Brussels, has taken five days to travel from Rauma, Finland, to Antwerp. It will undergo testing in Antwerp before being moved to its final destination.

With a capacity of 80t and a reach of 28m, the crane is one of the heaviest and most robust models available. It features a hybrid drive with a Stage V diesel engine, ensuring very low emissions. The crane is also compatible with HVO fuel, reducing emissions by up to 90%.

The crane is designed for handling both containers and bulk goods from ships and rail wagons. It is equipped with a fully automatic quick coupler, allowing easy attachment changes – such as a spreader, a 14m^3 bulk grab, or other accessories – all from the cabin.

Jo Van Moer, CEO of Van Moer Logistics, stresses that the crane's versatility is crucial for the company. "The Port of Brussels hosts a wide range of industries and projects, which allows the equipment to be tailored to meet the specific requirements of each sector," he says.

Van Moer Logistics also plans to make the crane available to other companies in the Port of Brussels, enhancing the port's efficiency and capacity.

Gert Van der Eeken, CEO of the Port of Brussels, welcomes the arrival of the crane as a significant step forward in the development of the port's infrastructure. He emphasises the port's commitment to providing efficient and sustainable logistics solutions for the Brussels region and advancing a true modal shift.

VESTDAVIT EXPANSION

Vestdavit has boosted davit manufacturing capacity by 60-70% through expansion of its production plant in Poland. A new assembly hall will enable the Norwegian supplier to meet growing demand from its core naval and offshore energy markets for advanced ship-handling systems.

The state-of-the-art 1,000m^2 facility, recently opened at the Vestdavit Production site at Redzikowo in northern Poland, will greatly enhance the efficiency of the davit fabrication process by eliminating an assembly bottleneck to increase annual throughput to around 100 units, while allowing construction of larger davits and bolstering innovation, according to the company.

"We expect to achieve efficiency gains of at least 10% through this significant investment, while also creating jobs to boost local employment after increasing the workforce at the factory from 65 to 85 in recent years," says Vestdavit Managing Director Rolf Andreas Wigand.

Importantly, he points out, construction of the assembly hall means that Vestdavit has become a fully integrated davit supplier with

VESTDAVIT MANAGING DIRECTOR ROLF ANDREAS WIGAND. PHOTO: STEVE MARSHALL/BLUE-C

engineering, procurement, production and quality control consolidated at a single manufacturing hub. Design, administrative and sales support is also instantly available from the Norway head office via a newly upgraded ERP system that enables real-time data-sharing.

"This enables us to control every part of the value chain throughout the davit production process. Consequently, we can streamline the workflow and optimise fabrication to accelerate deliveries of sophisticated bespoke davit systems for our clients within demanding schedules, as well as budget and quality parameters, through time savings of 20-30%," Wigand explains.

In practice, this means immediate availability of diverse davit components from a storage and logistics depot in the adjacent main building that was formerly used for assembly work prior to construction of the dedicated assembly hall. Vestdavit can tap an efficient local supplier network to source items such as steel structures and components, as well as services like machining and painting.

The main building also houses offices, a welding area, machining room and tool storage area, while the close proximity to production teams under one roof facilitates efficient interaction among personnel to tackle any issues during the manufacturing process, which is supported by advanced automation technology.

The new facility enables faster turnaround on orders through parallel assembly of multiple davits to boost productivity, as is the case with several PLAR-6501 units currently under construction for shipbuilder Austal Australia for vessels on order with the Royal Australian Navy.

Furthermore, the spacious hall with a high ceiling to accommodate large cranes allows fabrication of much larger boat-handling systems, such as docking-head davits favoured by the offshore wind industry for deployment of large workboats for turbine maintenance.

"As well as providing greater production flexibility, the new facility allows room for more innovation to expand product development in accordance with client specifications. There is a great benefit from being able to produce everything internally given the increasing complexity of davit projects," Wigand says.

There are also davit testing facilities at the extensive 2.6-hectare (26,000m^2) site, acquired by Vestdavit in early 2020, which is located within the Slupsk special economic zone in the Pomerangia region of northern Poland.

Vestdavit has adopted the innovative augmented reality solution xAssist that allows remote inspection, testing and verification of equipment, with digital goggles used by workers at the factory to transmit visuals for viewing on the Teams meeting application, which was a boon with travel challenges during the earlier covid-19 pandemic.

This is part of a push by the company to increase application of digital solutions throughout the davit development process to improve production efficiency, while customer relations management has been enhanced with a web-based system to interact with clients to optimise productivity from design to delivery.

But Wigand emphasises that the "extremely competent workforce represents our greatest asset and most important resource" at Vestdavit Production, with a strong contingent of female employees reinforcing the company's policy of gender diversity.

"Our production team in Poland, including warehouse workers, fitters and assemblers as well as administrative staff, has a high level of expertise with a strong commitment to quality and sustainability underpinned by ISO certification that ensures safety and environmental responsibility," he says, adding the company also has a good working relationship with the local authorities, banks and partners.

Vestdavit is focused on upskilling opportunities for its Polish team to improve their technical capabilities and problem-solving skills, while also providing apprenticeships for new recruits in areas such as hydraulic pipelaying.

The combination of a well-trained and highly skilled workforce with a more efficient production facility has given Vestdavit an enhanced capability to roll out rush orders, as well as quickly turn around repeat orders for standardised designs, according to Wigand.

THE NEW ASSEMBLY HALL AT VESTDAVIT PRODUCTION IN POLAND. PHOTO: VESTDAVIT

DAVIT TESTING AT VESTDAVIT PRODUCTION. PHOTO: VESTDAVIT

"With this additional capacity, we have the ability to produce everything in our orderbook now and in the foreseeable future," he says, after the company boosted orders by 76% last year to hit a sales record due largely to increased activity in offshore wind.

But he does not rule out further expansion of Vestdavit Production and its workforce based on the company's optimism over further exponential sales growth in its main markets going forward.

"With another 3,000m^2 available for additional construction at the site, we have the possibility of doubling the size of the production plant," he says.

INDIAN GRABS

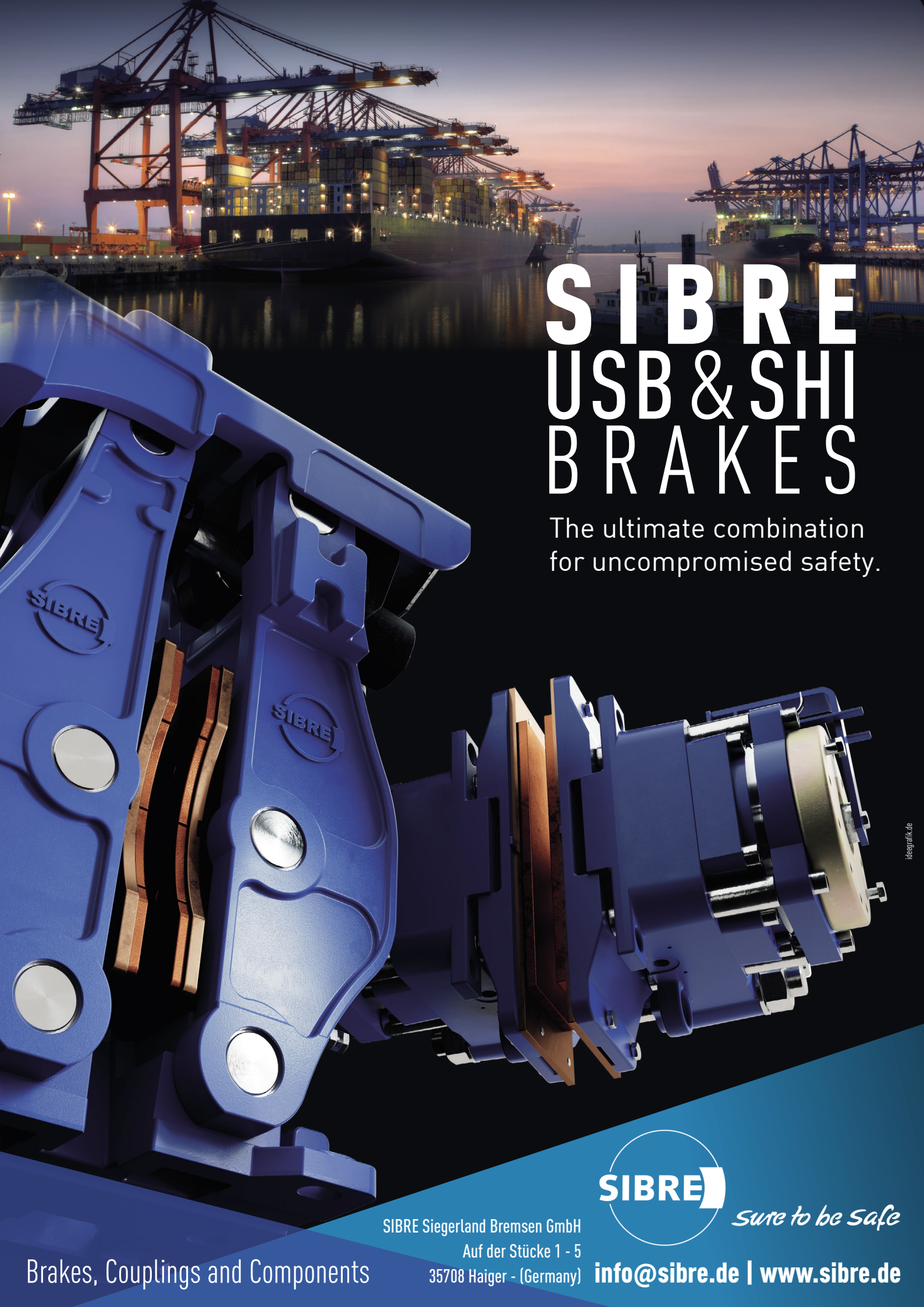
Adani Gangavaram Port, recognised as one of the deepest and most advanced ports in India, announced the launch of state-of-the-art economic grab ship cranes. This milestone makes it the first port in India to introduce this cutting-edge technology.

The port said these advanced electric cranes are designed to efficiently manage multipurpose operations, including loading and unloading processes.

The introduction of these cranes reflects Adani Gangavaram Port's ongoing commitment to improving cargo handling operations and enhancing its service offerings to customers.

By integrating the latest technology and processes, the Indian port aims to solidify its leadership position in trade services.

"We continue to invest in state-of-the-art technologies, that improve efficiency, ensure sustainability, and enhance the overall customer experience. These cranes are a witness to our vision of becoming a leader in India's port and logistics sector," said the port in a release.


SIBRE
USB & SHI
BRAKES
The ultimate combination
for uncompromised safety.
SIBRE
SIBRE
ideegrafik.de
SIBRE
Sure to be Safe
Brakes, Couplings and Components
SIBRE Siegerland Bremsen GmbH
Auf der Stücke 1 - 5
35708 Haiger - (Germany)
info@sibre.de | www.sibre.de

CONTROLLING BELT CONVEYOR DUST

BY R TODD SWINDERMAN, MARTIN ENGINEERING

The conveyor technology experts at Martin Engineering are responding to the US Mining Safety and Health Administration's (MSHA) new dust emissions final rule by offering simple, make-sense solutions for staying compliant.

Often, rule changes cause a ripple effect internationally and serve as a template for similar policies worldwide. Martin engineers have dedicated years to reducing conveyor-borne dust by designing accessories and engineered solutions that improve workplace safety and production efficiency.

In this article, Martin Engineering experts offer field-tested advice and methods that have delivered measurable results for mines and bulk handlers around the world for decades.

On August 1, 2024, the US Mining Safety and Health Administration's (MSHA's) final rules came into effect. MSHA measures the dust personal exposure level (PEL) in a time-weighted average (TWA) by a personal dust monitor carried by trained workers throughout their eight-hour shift.

The volume is measured in micrograms (µg) in cubic metres (m^3). The final rule establishes a new PEL of 50 µg/m^3 for a full-shift exposure, calculated as an eight-hour TWA, and an action level of 25 µg/m^3. These standards also apply to miners diagnosed with or showing early signs of pneumoconiosis (aka black lung).

MSHA mandates that operators seek to install or repair equipment offering engineering controls that control or eliminate sources of dust.

This is supplemented with administrative controls (signs, policies, and so on). Temporary personal protective equipment (PPE) is also required for exposures above the PEL, but is not considered a long-term solution.

CONVEYING, STORAGE AND PROCESSING ARE ALL ACTIVITIES THAT GENERATE DUST.

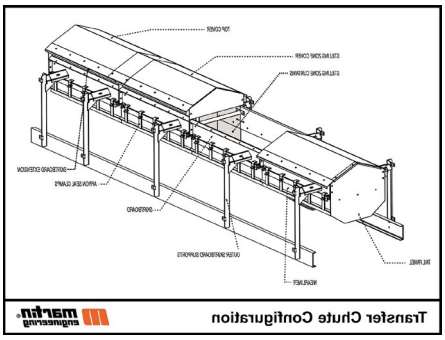
Conveyor loading zones

Conveyor belt dust is largely generated at the loading and discharge zones. Passive dust reduction means no machinery or electricity such as air cleaners, pumps or HAVC are needed. Passive dust reduction strategies include:

» *Fully enclosed transfers* – Completely enclosing the loading, stilling and settling zones contain the dust. Items

like dust curtains and dust bags control airflow and capture dust.

» *Shorter or sloped loading* – Transfer chutes that minimise the impact of cargo on the belt reduce the amount of turbulence and volume of dust within the loading zone.
» *Belt training* – Belt training when entering and leaving the loading zone ensures centered belt loading and minimises material shifting. It also controls belt drift for less spillage and dust along the run.
» *Preventing belt sag between idlers* – The belt can dip slightly between idlers, creating gaps that release dust and fines. Using an impact cradle with shock-absorbent polyurethane bars reduces strain on the belt and creates an even belt plane. Cradles can extend along the entire length of the stilling zone.



A WELL-DESIGNED AND -SEALED TRANSFER CHUTE OFFERS FIELD-TESTED PASSIVE DUST REDUCTION. CRADLES REDUCE DUST EMISSIONS BY CREATING A SEALED ENVIRONMENT BETWEEN THE BELT AND SKIRTING

Lower belt speeds

Many sources suggest belt speeds of 2m/s (394 fpm) or less for reducing dust generation. However, with lower belt speeds, the belt width must increase to convey the same tons-per-hour creating a capital cost vs operating cost dilemma. The Conveyor Equipment Manufacturers Association (CEMA) Classification and Definitions of Bulk Materials (ANSI/CEMA 550-2003) lists miscellaneous properties of bulk materials that benefit from lower belt speeds:

» B-1 Aeration-Fluidity
» B-6 Degradable-Size Breakdown
» B-8 Dusty
» B-20 Very Light and Fluffy

Idler spacing and belt tension

Managing belt tension so the sag between idlers is minimised reduces the number of escape points for fugitive spillage and dust from material trampling and splash. Splash is material spread after impact on the belt during loading. Material trampling is the particle-to-particle movement created by the change in the bulk material profile as it goes over the idlers. The higher the belt tension, the lower the trampling loss.

Similar to turbulent air caused by impact, at a critical speed, bulk material moving over idlers loses contact with the belt at the idler and is launched into the air, falling back onto the belt at a slightly lower speed and releasing dust. Keeping the belt sag to 1% between idlers is a frequent specification.

Idler spacing is critical to controlling belt sag. To reduce gaps where spillage and emissions can escape and retain an even belt profile in the loading zone, idlers should be placed as closely together as possible. Outside of the loading zone, CEMA has some recommendations based on volume and belt width.

The amount of dust that can become airborne is directly proportional to the volume and speed of the airflow through the transfer point. If the openings in the chute work are restricted to the practical minimum, the inward airflow is restricted.

A useful dust control strategy is to capture the material shortly after discharge and keep the stream coalesced as tightly as possible to reduce induced air.

Extend enclosures apply dual skirting to seal the enclosure and use dust curtains to control airflow and allow dust to settle back into the material stream.

Conveyor transfer points have a history of being drafted rather than designed. Design tools and material flow modeling software helps reduce dust emissions in the transfer point design phase. How the conveyor is operated and maintained also has a significant effect on dust generation and release.

In initial conveyor system designs, emphasis is commonly placed on maximising production. But experts recommend operators engage in feasibility studies on how the conveyor systems create and emit dust with the goal of improving air quality and workplace safety while still increasing operational efficiency.

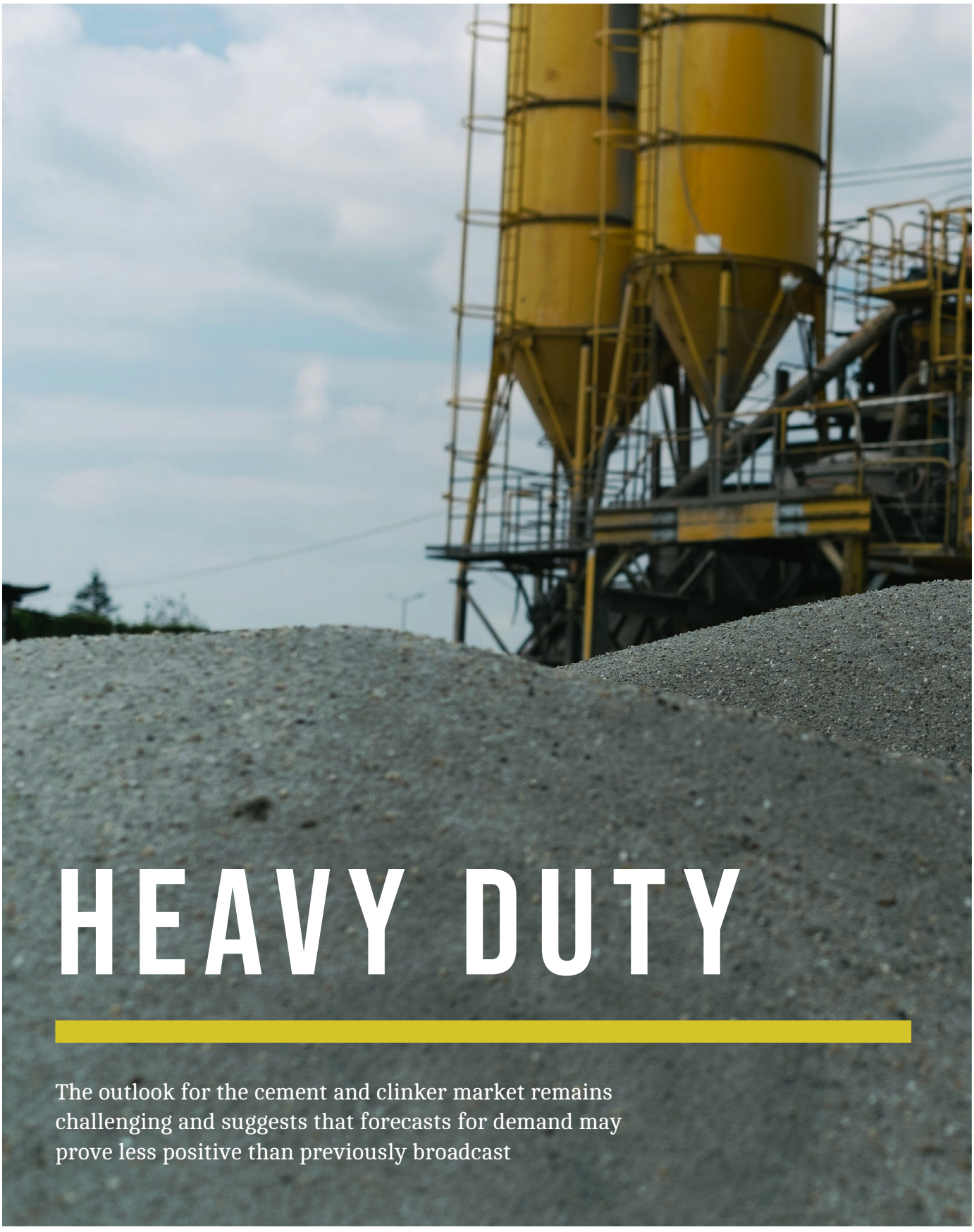
Recommended Idler Spacing for Applications Outside the Loading Zone as Published by CEMA

Return Idler Spacing	Belt Width	Carrying Side Idler Spacing Outside the Loading Zone Weight of Material Handled in Kilograms per Cubic Meter (lb_m/ft^3)					
		480 (30)	800 (50)	1200 (75)	1600 (100)	2400 (150)	3200 (200)
m (ft)	m (in.)	m (ft)	m (ft)	m (ft)	m (ft)	m (ft)	m (ft)
3,0 (10.0)	457 (18)	1,7 (5.5)	1,5 (5.0)	1,5 (5.0)	1,5 (5.0)	1,4 (4.5)	1,4 (4.5)
3,0 (10.0)	610 (24)	1,5 (5.0)	1,4 (4.5)	1,4 (4.5)	1,2 (4.0)	1,2 (4.0)	1,2 (4.0)
3,0 (10.0)	762 (30)	1,5 (5.0)	1,4 (4.5)	1,4 (4.5)	1,2 (4.0)	1,2 (4.0)	1,2 (4.0)
3,0 (10.0)	914 (36)	1,5 (5.0)	1,4 (4.5)	1,2 (4.0)	1,2 (4.0)	1,1 (3.5)	1,1 (3.5)
3,0 (10.0)	1067 (42)	1,4 (4.5)	1,4 (4.5)	1,2 (4.0)	1,1 (3.5)	0,9 (3.0)	0,9 (3.0)
3,0 (10.0)	1219 (48)	1,4 (4.5)	1,2 (4.0)	1,2 (4.0)	1,1 (3.5)	0,9 (3.0)	0,9 (3.0)
3,0 (10.0)	1372 (54)	1,4 (4.5)	1,2 (4.0)	1,1 (3.5)	1,1 (3.5)	0,9 (3.0)	0,9 (3.0)
3,0 (10.0)	1524 (60)	1,2 (4.0)	1,2 (4.0)	1,1 (3.5)	0,9 (3.0)	0,9 (3.0)	0,9 (3.0)
2,4 (8.0)	1829 (72)	1,2 (4.0)	1,1 (3.5)	1,1 (3.5)	0,9 (3.0)	0,8 (2.5)	0,8 (2.5)
2,4 (8.0)	2134 (84)	1,1 (3.5)	1,1 (3.5)	0,9 (3.0)	0,8 (2.5)	0,8 (2.5)	0,6 (2.0)
2,4 (8.0)	2438 (96)	1,1 (3.5)	1,1 (3.5)	0,9 (3.0)	0,8 (2.5)	0,6 (2.0)	0,6 (2.0)

Metric conversions added by Martin Engineering; belt widths may not be actual metric belt sizes.

Idler Spacing Outside the Loading Zone martin engineering

CEMA CHART OF SUGGESTED IDLER SPACING OUTSIDE OF THE BELT CONVEYOR LOADING ZONE TO MITIGATE DUST AND SPILLAGE



HEAVY DUTY

The outlook for the cement and clinker market remains challenging and suggests that forecasts for demand may prove less positive than previously broadcast

The World Cement Association (WCA) has published a white paper authored by its CEO, Ian Riley, analysing the long-term outlook for global cement and clinker demand. The report challenges prevailing forecasts, projecting a significant decline in demand for cement by 2050 and offering actionable insights for industry stakeholders navigating the transition to a low-carbon future.

Entitled *Long-Term Forecast for Cement and Clinker Demand*, the white paper highlights pivotal changes driven by decarbonisation, technological advancements and market dynamics. Key findings include:

- Global cement demand is likely to decline to 3bn tonnes per annum (tpa) by 2050, far below existing forecasts.
- Clinker demand, the main source of CO_2 emissions in cement production, is expected to decrease even more steeply, reaching 1.5bn tpa by 2050.
- The need for carbon capture and storage (CCS) will consequently be reduced, impacting investment and policy priorities.

"The cement industry is undergoing an unprecedented transformation. As we move towards a decarbonised future, understanding the true demand for cement and clinker is critical to ensuring that policies, technologies, and investments align with reality. This white paper aims to provide industry leaders and policymakers with the clarity needed to plan effectively and sustainably," explains Riley.

The report also examines disruptive factors such as alternative materials, supply chain optimisation and clinker-free technologies, which are reshaping demand patterns.

By outlining three potential scenarios, it helps to provide a roadmap for stakeholders to adap to varying degrees of change and seize opportunities for innovation.

The World Cement Association invites its members and the broader industry to engage with the white paper's findings and come together to collaborate on sustainable solutions for the challenges ahead.

The full white paper can be accessed online at: worldcementorganisation.org

INDIAN GROWTH

The Indian cement industry is on track to reach 5.09bn tonnes by 2028-29, driven by robust government investment in infrastructure. According to a report attributed to Infomerics Ratings, this marks a compound annual growth rate (CAGR) of 4.9% between 2024 and 2029.

The report says: "In 2022-23, the industry's market size stood at 3.82bn tonnes, with a total installed capacity of 622m tonnes per annum in FY24 and production at 427m tonnes. Notably, India contributes more than 8% to the world's total installed cement capacity, highlighting its importance in the global market.

Despite this, India's per capita cement consumption is 260kg – significantly below the global average of 540kg – indicating substantial room for growth. Globally, the cement market is projected to grow at a CAGR of 4.3% from 2024 to 2032."

There have been a number of government initiatives driving expansion, including investment for infrastructure in this financial year and housing schemes. The construction sector consumes 55% of cement production, while public infrastructure projects account for the rest.

The industry also plays a critical role in employment, providing direct jobs to more than one million people and creating downstream opportunities for about 20,000 individuals per million tonnes of cement produced.

Private players dominate the sector, controlling 98% of production capacity, while public sector units hold a mere 2%. Domestic production meets almost all demand, with imports accounting for just 0.2% of total production in FY23. However, exports have declined recently due to reduced global demand and rising competition.

India currently has 341 cement manufacturing facilities, including 159 integrated large cement plants, 120 grinding units, and 62 mini cement plants.

Cement production has seen steady growth, with a 7.1% increase in September 2024 and a cumulative growth of 1.6% between April and September of FY25, according to the Ministry of Commerce and Industry. This growth aligns with India's overall industrial performance, which saw a 2% rise in core industries in September, led by cement, steel, coal and fertilisers."

As India invests heavily in infrastructure and housing, the cement industry is set to play a important role in supporting the nation's economic and developmental goals.

SOUTHAMPTON INVESTMENT

The first ship carrying cement to arrive at Aggregate Industries cement storage facility in Southampton arrived just before Christmas, as part of a major investment at the port. Work began on an upgrade of the port infrastructure in March last year, with a view to boosting the handling of both low carbon and traditional cement products.

The new facilitiy is part of an investment between Associated British Ports and Solent Stevedores worth £6m, with a view to making the facility the fastest discharge terminal for cement in the UK.

The aim is to pump the cement materials through a pipe system at a new warehouse with pneumatic vessels, with the aim of reducing the environmental impact of product handling. Aggregate also has an ongoing strategy to move towards the use of deep sea terminals.

CEMENT-FREE CONCRETE

CarbiCrete have announced that the installation of new equipment at a plant in Drummondville, Quebec has been completed.

CarbiCrete's patented technology enables the production of cement-free concrete, avoiding cement-related emissions by replacing cement with a steel-making by-product and removing carbon dioxide from the atmosphere by

mineralising CO_2 into the concrete for permanent storage.

A recently published Environmental Product Declaration (EPD) shows that concrete blocks made with CarbiCrete technology have a carbon footprint that is 20 times lower than the industry average.

In December, CarbiCrete announced a new carbon financing collaboration with Meta that will enable both this expansion as well as the installation of CarbiCrete equipment at Canal Block, a block-maker in Port Colborne, Ontario.

"This increased production capacity represents another significant step in our ability to meet the growing demand for low-carbon concrete products," says CarbiCrete CEO Jacob Homiller. "It enables our long-standing production partner, Patio Drummond, to expand its portfolio of CarbiCrete products and to manufacture more concrete that will help decarbonise the built environment."

"We are thrilled to be able to bring more CarbiCrete products to the market," says Philippe Girardin, co-owner of Patio Drummond. "This additional capacity will help Patio Drummond set the standard for sustainable construction in Quebec and Canada. We're proud to be working with CarbiCrete and look further to even further expansion at facility in the future."

The first structure to be constructed using CarbiCrete blocks produced at Patio Drummond is a low-carbon building at Aecon's Innovation and Training Centre in Holland Landing, Ontario, inaugurated in December.

MARKET GROWTH

According to a report by Fortune Business Insights, the global cement market size was valued at US$405.99bn in 2023 and is projected to grow from $423.24bn in 2024 to $592.38bn by 2032, exhibiting a compound annual growth rate (CAGR) of 4.3% during the forecast period.

Asia Pacific dominated the cement market with a market share of 73.66% in 2023. Moreover, the cement market size in the US is projected to grow significantly, reaching an estimated value of $17.71bn by 2032, driven by adoption of modern and advanced practices by the construction industry including precast concrete and 3D concrete printing will further boost cement consumption.

"The rising adoption of green cement to construct ecofriendly and sustainable buildings will promote market growth," says the report. "As part of an effort to reduce the threat posed by emissions, the process of manufacturing can be modified to reduce emissions substantially.

EMBRACING THE ELECTRIC REVOLUTION

TAISUKE INUI, CEO, MARFLEX

While alternative fuels and propulsion technologies dominate the shipping industry's sustainability discourse, cargo handling systems remain an under-debated area of technological innovation. This source of emissions and operational costs is often overlooked, despite its transformative potential for environmental and economic performance

> It's well known that shipowners and operators face growing pressures to enhance safety and efficiency, meet stricter environmental regulations, and reduce costs

As regulatory requirements tighten and operational margins come under increasing pressure, achieving meaningful progress requires a more comprehensive approach that considers all potential areas of improvement onboard ships.

For our industry to truly become sustainable, we must look beyond conventional practices to embrace innovative solutions that deliver measurable benefits today while preparing the industry for the challenges of tomorrow.

When it comes to cargo handling, there is undoubtedly room for improvement. Hydraulic systems have long been the default, but their limitations are increasingly at odds with the needs of the modern maritime industry.

Inefficient, costly, and sometimes even environmentally hazardous, these legacy systems have created a blind spot that is costing the industry financially and environmentally.

Maintenance complexity further increases crew workloads, risks operational downtime, and drives up costs. In a time of heightened regulatory scrutiny and rising demand for sustainable practices, the status quo is no longer viable.

Instead, and when adopted at scale, electric cargo handling systems will drive a fundamental shift in how vessels operate. Compared with hydraulic systems, electric-driven pumps are simpler to install, easier to maintain, and eliminate the risk of oil spills. They deliver significant energy efficiency improvements, reducing emissions and the overall carbon footprint.

In compliance with the International Maritime Organization's noise reduction guidelines, these systems operate at a quiet 75-83 dB, benefiting crew comfort, local communities, and marine ecosystems sensitive to underwater noise pollution.

Additionally, by integrating shore power during discharge, electric-driven pump solutions can run entirely on renewable energy, removing emissions from diesel generators while aligning with global environmental goals and increasingly strict port regulations. Early movers benefit from regulatory compliance, cost savings, and a competitive edge in an increasingly sustainability-focused market.

The transition to electric cargo handling goes beyond energy efficiency. In the case of MarFlex's Smart Pumping technology, for example, pumps can be paired with real-time performance monitoring and predictive maintenance powered by digital twin capabilities, creating a safer, more efficient working environment for crew onboard and ensuring optimal operations for shipowners.

By using data to shift from reactive to proactive maintenance strategies, operators can minimise costly failures and focus on operations instead of repairs.

Smart integration creates a connected ecosystem across fleets, enabling shore-based teams to remotely monitor and support operations, while data-driven insights allow for optimised resource allocation and reduced human error.

Variable Speed Drive Systems (VSDS) provide complete speed and precision control, reducing deck chatter and further enhancing operational efficiency. Together, these innovations represent a new era in maritime operations where intelligent systems drive performance and reliability.

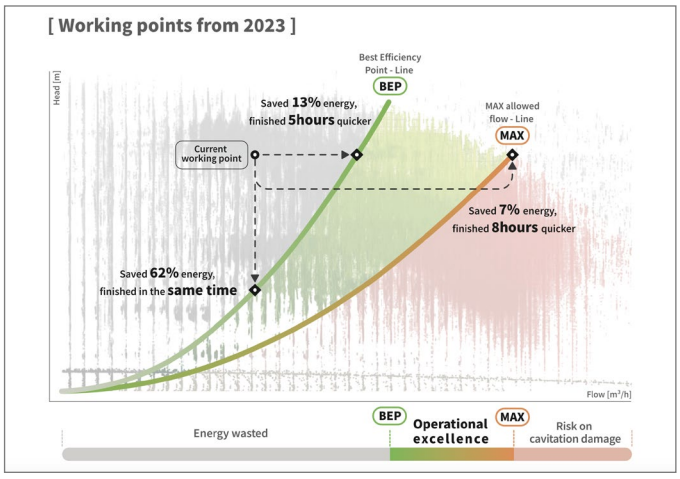
It's well known that shipowners and operators face growing pressures to enhance safety and efficiency, meet stricter environmental regulations, and reduce costs. Electric cargo handling systems directly address these challenges, offering a clear path to improved Carbon Intensity Indicator (CII) ratings and long-term regulatory compliance.

Beyond the environmental benefits, the economic impact is compelling. Electric systems eliminate costs associated with hydraulic oil storage and disposal while delivering substantial efficiency gains – documented improvements in energy consumption that directly enhance charterparty appeal.

When combined with reduced installation and maintenance costs over the system's lifetime, plus the improved resale value that comes with modern technology integration, the business case is clear.

The maritime industry stands at a decisive moment. While debates about future fuels continue, forward-thinking operators are already gaining competitive advantages through electric cargo handling systems. These solutions reduce environmental impact, improve operational efficiency, and provide safer, more reliable experiences for crews and operators.

As regulatory pressures mount and charterers demand greater efficiency, the cost of maintaining the status quo will only grow. At MarFlex, we are proud to lead the transformation from hydraulic to electric and contribute to shipping's future: a future that is electric, intelligent, and sustainable.



SAMSON: GOING FOR GROWTH

COMPANY NEWS

A BF0415T STORMAJOR® BOOM FEEDER HANDLING BULK MATERIALS FOR STOCKPILING OPERATIONS

Samson has relaunched its BF0415T Stormajor® Boom Feeder, alongside the introduction of the new Telescopic Shiploader, strengthening its range of high-performance bulk material handling solutions.

First introduced more than a decade ago, the BF0415T has been comprehensively re-engineered, while the Telescopic Shiploader expands Samson's Shiploading capabilities, complementing its existing Cambered Boom Shiploader. These developments offer bulk terminals greater flexibility, efficiency and performance for applications across stockyards, quarries, ports and terminals, rail operations, power generation, and mineral processing plants.

With the updated BF0415T, Samson continues its commitment to delivering practical, high-performance equipment designed to handle demanding material transfer tasks. Whether for stockpiling, barge loading, rail wagon and truck loading, material intake and transfer, emergency feed, or maintenance bypass, this mobile boom feeder is engineered to enhance operations across multiple sectors.

ENHANCED PERFORMANCE FOR HANDLING APPLICATIONS

The BF0415T Stormajor® Boom Feeder is a tracked, mounted bulk material handling system featuring a wide loading section combined with a luffing and slewing boom. It is designed to handle a variety of bulk materials, with a particular focus on coal, aggregates, pet coke, fertilisers and other minerals, delivering a feed rate of up to 1,000 tonnes per hour. Additionally, it can handle materials with a density of up to 1.6t/m^3, making it a highly capable solution for a high-volume of bulk materials across multiple applications.

Its flared entry design improves vehicle alignment, optimising material flow and increasing holding capacity. By reducing the need for extensive access ramps, the BF0415T enhances operational efficiency while maintaining a compact footprint.

Samson's Telescopic Shiploader is designed to deliver efficient vessel loading with an extendable boom, enhancing loading reach while reducing the need for repositioning. Capable of handling materials with densities up to 1.6t/m^3 and reaching a peak discharge rate of 1,600 tonnes per hour, the Telescopic Shiploader is ideal for high-throughput port operations. The telescopic, luffing and radial movement capabilities ensure optimal alignment over the vessel and within each Hold, increasing efficiency and reducing vessel loading times.

INTELLIGENT DESIGN FOR MAXIMUM EFFICIENCY

At the core of the BF0415T is a PLC-based control system, providing operators with

precision control over proportional speed, slew and luffing functions. A handheld remote control ensures ease of operation, allowing adjustments to be made swiftly and safely, reducing downtime and enhancing productivity. This level of control makes the BF0415T ideal for high-precision loading and stockpiling applications, particularly in stockyards and port handling environments where material flow management is critical.

The Telescopic Shiploader features integrated hydraulic cylinders for boom luffing, chassis lift and wheel drive mechanisms, offering smooth, reliable and efficient operation. The conveyor system is optimised with a three-roll troughing idler design and an advanced dust-control system, making it an ideal choice for environmentally conscious bulk terminal operators.

Both systems provide mobility and transport flexibility, with the BF0415T mounted on powered tracks, it is also easily transportable over distance on a flatbed truck. The Telescopic Shiploader can be mounted on a towable sub-frame or powered tracks with manual pivoting wheel assemblies for inline or radial travel.

KEY FEATURES AND BENEFITS

- Standardised designs provide a consistent and proven solution for bulk handling applications.
- BF0415T handles up to 1,000 tonnes per hour, supporting large-scale operations.
- The Telescopic Shiploader achieves 1,600 tonnes per hour, ensuring rapid vessel loading.
- Capable of handling materials with a density of up to 1.6t/m^3.
- BF0415T is easily transportable on a flatbed truck for quick relocation.
- The Telescopic Shiploader offers extended reach for optimal vessel and hold coverage.
- PLC-based system with handheld remote control for precision operation.
- Suitable for stockpiling, rail/truck loading, barge and vessel loading.
- Heavy-duty tracked undercarriage on the BF0415T and mobility options offered on the Telescopic Shiploader, ensures flexibilty within demanding environments.

MEETING THE NEEDS OF MODERN OPERATIONS

The redesigned BF0415T and the new Telescopic Shiploader reflect Samson's commitment to continuous improvement and customer-driven innovation. By refining an already trusted design and expanding its shiploading solutions, Samson has created systems that meet the evolving challenges of bulk material handling, helping operators improve efficiency, reduce downtime and optimise throughput.

"We are confident that the redesigned BF0415T and the new Telescopic Shiploader will meet the needs of operators looking for flexible and high-performance material handling solutions," says Matthew Jones, Managing Director at Samson. "The upgraded and new systems offer improves functionality, ensuring our customers can continue to manage their operations with ease."

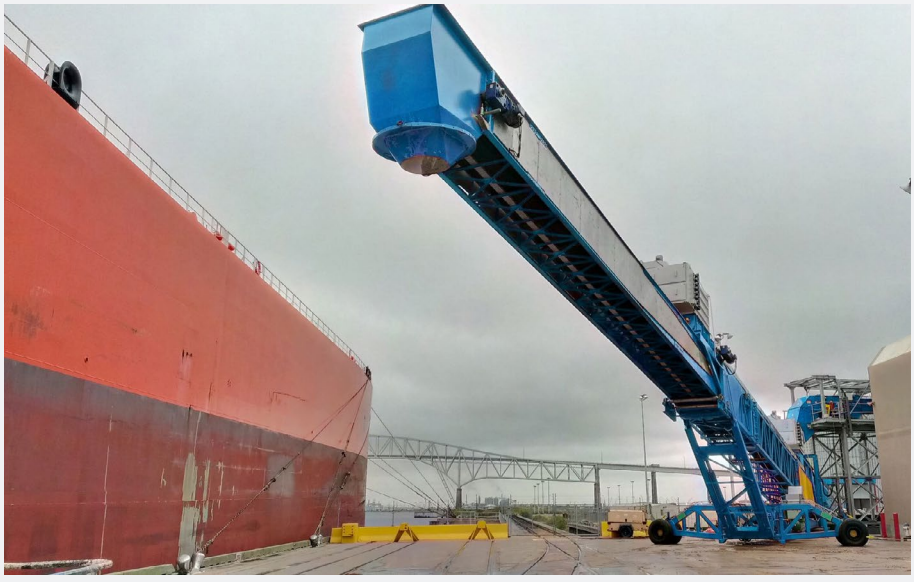
With these solutions now available, Samson is inviting industry professionals to learn more about their capabilities. The company will be hosting product demonstrations and live events, offering first-hand insights into how these latest systems can benefit bulk material and coal handling operations.

ABOUT SAMSON

Samson Materials Handling, based in Ely, UK, is a key member of the Aumund Group, specialising in mobile bulk material handling solutions. With more than 50 years of experience, Samson designs and manufactures flexible, high-performance equipment for ports, terminals, power plants and industrial applications.

As part of the Aumund Group, a global leader in conveying and storage technology, Samson benefits from an extensive worldwide network. The group includes Aumund Fördertechnik GmbH, Schade Lagertechnik GmbH, Tilemann GmbH Chains and Components, Aumund Group Field Service GmbH, and Aumund Logistic GmbH. Operating across 20 locations in Asia, Europe and North and South America, and supported by five strategic warehouses, the Aumund Group delivers innovative and reliable solutions for bulk material handling worldwide.

For more information, visit: samson-mh.com



BRIGHT SPARKS

The latest eco-friendly paints and coatings help ships and machinery stay free of contaminants, as well as improve their efficiency

Nine major suppliers of biocides to the marine antifouling coatings sector have collaborated to increase awareness of the importance of marine biocides for the control of biofouling on ship hulls.

In a new whitepaper developed by the group entitled 'Antifouling biocides: a key contributor to sustainable shipping' the history of marine biocide use and antifouling coatings development is considered with insights into the strict regulatory processes that govern marine biocides and their safe use in the marine environment.

The authors maintain that without biocides, biofouling would cost the global shipping industry billions of dollars more from excess fuel use, ships would generate much greater volumes of GHG emissions and pose a higher risk to marine biosafety.

The writers also warn that while marine biocides are here to stay, any further restrictions around the number of marine biocides available for use by coatings manufacturers could have a limiting effect on innovative approaches needed to meet future biofouling challenges.

The participants in the white paper include American Chemet Corporation, Arxarda , Bardyke Chemicals, Cosaco , ECKART, I-Tech , Janssen PMP, LANXESS and Nordox.

For centuries, materials or compounds that have an antifouling effect have been used to protect surfaces submerged in water through their inclusion in biocidal antifouling coatings. Today, a toolbox of 10 approved marine biocides protects the majority of the global shipping fleet from the negative impacts of biofouling on ship operations, contributing to the achievement of regulatory compliance and supporting sustainable shipping.

For ships operating under strict global regulations set by the International Maritime Organization to reduce carbon intensity, as an average across international shipping, by at least 40% by 2030 and to reach net-zero greenhouse gas (GHG) emissions by or around 2050, the underwater hull poses significant risk to decarbonization efforts due to the negative impacts of biofouling accumulation on excess fuel use and GHG emissions generated.

A ship hull, if protected by a coating with no marine biocides present, once immersed in water would experience immediate microfouling growth. The process involves microorganisms attaching themselves to the surface, creating colonies which form a biofilm, also known as microbial slime. This biofilm offers good conditions for macro fouling organisms, such as algae, seaweeds, and hard-shelled organisms to attach colonize over the course of a few weeks.

The white paper maintains that the presence of marine biocides in an antifouling coating acts as the first line of defence against biofouling. Unless a hull is protected by a silicone-based alternative to the traditional self-polishing biocidal antifouling coatings, or is periodically cleaned, biofouling will accumulate across the hull surface and in niche areas in the absence of biocidal protection.

CORROSION PROTECTION

German terminals are applying Steelpaint's new corrosion protection system, Stelcatec, to repair existing paintwork on ZPMC ship-to-shore cranes, following the Chinese manufacturer's seal of approval in 2023.

Stelcatec, the world's first low-VOC, isocyanate-free polyurethane coating system, is being used to repair damaged original coatings on ZPMC cranes operated at terminals in Hamburg, Bremerhaven and Wilhelmshaven.

Ahrensburg-based Adamium, which is contracted to maintain the terminals' cranes, has completed work at the Wilhelmshaven terminal and will now carry out remedial coatings work to cranes at Hamburg and Bremerhaven over the next two to three years.

Dmitry Gromilin, Chief Technical Supervisor at Steelpaint, says: "When protective coatings on ship-to-shore cranes get damaged a two-component epoxy is typically used for spot repairs, but if you don't get the mixing right, the paint will blister and be ineffective in protecting against corrosion. It's a long process and curing takes time."

A two-component epoxy application can take weeks before an STS crane or gantry can return to normal operations. This is because drying time is heavily dependent on substrate temperatures. And if this is too low and the ambient temperature rises, the temperature difference can preclude these coatings from being applied until more favourable conditions prevail.

"Taking a ship-to-shore crane out of commission costs the terminal money, delaying container loading/unloading operations. They wanted a ZPMC-approved one-component system that would obviate mixing errors, reduce material waste, speed up the drying process and reduce the time cranes are out of service," says Steelpaint Sales Director Frank Müller. "With Stelcatec-L, the coating can be applied and cured within a working day."

The decision to select the new coating follows successful patch testing on equipment operated by one of Europe's largest container terminals and logistics groups. The success of these trials and subsequent testing by ZPMC led to the original equipment manufacturer certifying Stelcatec for use on existing and newbuild cranes.

Achim Wallat, Adamium Project Manager, says: "Terminal operators want an effective, reliable and safe corrosion protection system capable of reducing maintenance costs and downtime. Compared to two-component epoxies, Stelcatec-L is a very impressive, durable coating system that we now specify for all our crane refurbishment projects."

Taking four years' research and development, Stelcatec is a single-pack moisture-curing paint based on a polyurethane free of Isocyanates. With a very low solvent content, the new coating can be applied by brush, roller or spray in temperatures ranging from -5°C to 50°C and environments where relative humidity is as high as 98%.

IN TRANSIT CLEANING

As part of its continued effort to drive sustainability in the maritime industry, German container line Hapag-Lloyd succeeds in reducing both emissions and operational costs through implementing Shipshave's In Transit Cleaning of Hull (ITCH) solution, with the results documented and confirmed by class society DNV.

In order to independently verify the benefit of proactive fouling removal, Shipshave in cooperation with Hapag-Lloyd commissioned DNV to analyse operational performance data from two Hapag-Lloyd container ships equipped with the ITCH solution. The vessels are of 8,749teu and 18,800teu respectively of different ages and with different trading profiles.

The analysis included data harvested from both vessels over a 17-month period, allowing for an in-depth consideration of 'trend over time' to examine whether Hapag-Lloyd's proactive approach to hull cleaning delivered a representative and consistent result. In its report following the assessment, DNV confirms that both ships achieved a significant fuel saving and reduction in emissions based on improved energy efficiency.

According to the DNV study, the actual reduction in fuel and emissions varied between them due to their different dimensions and operating profile, but both were impressive. One saw a staggering 16% improvement in performance equal to a reduction in fuel consumption of approximately 8.4 tons per day – which equates to removing the emissions of more than 4,900 fossil-fuel-driven cars over the same time period. The other vessel showed better initial performance but still achieved a reduction in fuel consumption of just under 5%. The performance was maintained over time by regularly using the ITCH unit.

"We are very pleased that this analysis from DNV confirms our internal assessment of the result achieved by the implementation of ITCH. This method reflects our proactive approach to reducing emissions caused by biofouling," says Nikhilesh Bhatia, Director Fleet Energy Efficiency, being responsible for the ITCH project at Hapag-Lloyd.

Over the assessment period, the ITCH system successfully managed hull biofouling, by initially reducing resistance. Additional fouling would accumulate over time without repeated hull cleaning. Proactive grooming prevents future degradation of vessel performance due to fouling re-growth. This long-term effect was not accounted for in the analysis and is likely to underestimate the total economic benefit of proactive cleaning with ITCH.

Nevertheless, return on investment (ROI) from the ITCH system for the two vessels was under hree months at sea in these cases.

"The findings of this case study emphasise the critical role of minimising biofouling in reducing greenhouse gas emissions from shipping. As outlined in our recent Maritime Forecast to 2050 report, regular or proactive hull cleaning remains one of the most effective strategies to achieve this goal," says Dr Uwe Hollenbach, Senior Principal Consultant at DNV Maritime Advisory, Ship Performance Center, Hamburg.

Bhatia says: "This is an excellent example of how Hapag-Lloyd promotes sustainable maritime transport, by implementing innovative technology leading to reduced emissions and improved financial performance both in the short and long term."

BIOMIMETICS INSIGHT

Nippon Paint Marine recently published its white paper, "Breathing life into science; creating the next generation of hull coatings using biomimetics", detailing the role that biomimetics has played in the development of their patented HydroSmoothXT technology.

A specialist team from Nippon Paint Marine's R&D programme, which included experts in polymer science, biochemistry, fluid dynamics and marine science, studied the natural characteristics of marine life to inform the development of the HydroSmoothXT technology that would be used in their coatings. This approach to technology development, of imitating nature, is known as biomimetics. The performance of Nippon Paint Marine's antifouling coatings range – which include LF-Sea, A-LF-Sea, and FASTAR – has been enhanced using this technology, and has been applied to more than 5,000 vessels.

By replicating the natural surficial film found on the skin of marine life, Nippon Paint Marine researchers have been able to develop coatings that minimise friction, reduce fuel consumption, and lower vessel emissions.

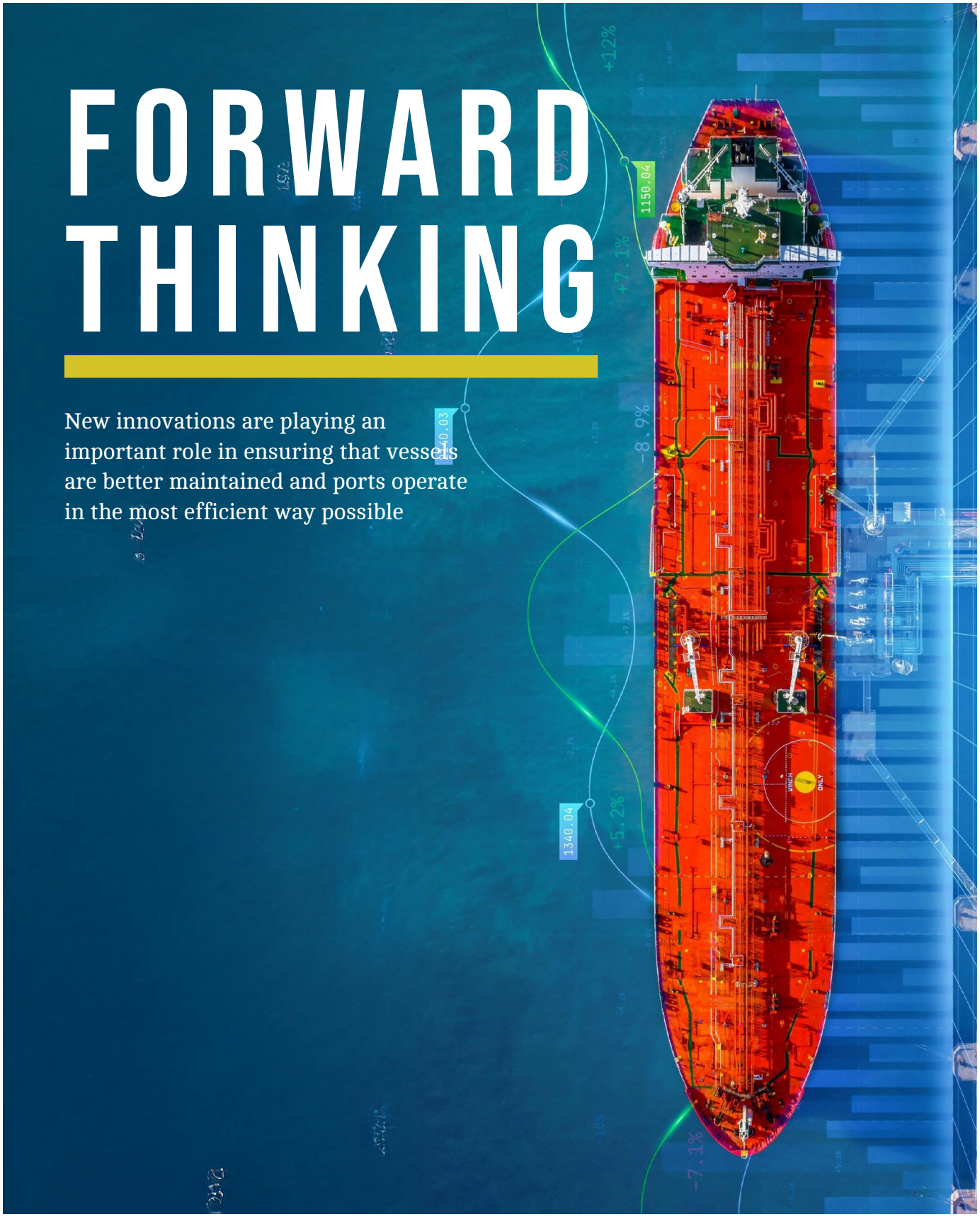
In collaboration with institutions including Kobe and Osaka Universities, the project team focused on replicating these natural characteristics to aid in the development of specifically designed hydrogels for paints; the scientific theory being that a hull coating could be created that essentially 'traps' a layer of seawater against the surface membrane, which increases the boundary layer around a vessel's hull, and reduces friction. Subsequent products such as LF-Sea and A-LF-Sea, which incorporated this enhanced performance hydrogel, generated fuel and emissions savings of up to 12.3%.

The FASTAR product range uses a unique hydrophilic and hydrophobic nanodomain resin structure to achieve antifouling performance, which the company says can deliver fuel savings of over 14%, thanks to an average speed loss of just 1.2% over a 60-month period, compared with the market average speed loss of 5.9% over a similar time period.

KAZUAKI MASUDA, CORPORATE OFFICER, TECHNICAL DIVISION DIRECTOR, NIPPON PAINT MARINE

FORWARD THINKING

New innovations are playing an important role in ensuring that vessels are better maintained and ports operate in the most efficient way possible



The Korean Register (KR) has partnered with Sinokor Merchant Marine and HD Hyundai Marine Solution (HD HMS) to revolutionise ship maintenance through condition-based maintenance (CBM) technology powered by artificial intelligence (AI). This pioneering collaboration will transform how vessels' main engines and generators are monitored and maintained.

The groundbreaking project will deploy advanced CBM systems on two Sinokor container ships, an 1,800teu and an 8,000teu vessel, drawing on each organisation's unique expertise.

Unlike traditional scheduled maintenance, CBM technology enables real-time monitoring of equipment, triggering maintenance only when needed – significantly reducing operational costs while enhancing vessel reliability. This smart approach not only enhances efficiency, but represents a critical step toward digitalised and autonomous shipping.

KR has been developing core technologies for fault diagnosis and prognosis since 2017, applying AI to critical ship machinery such as engines, generators, pumps, and switchboards. This comprehensive work includes creating fault flowcharts, analysing big data collected from experimental failure scenarios, and developing sophisticated AI models. To ensure seamless integration aboard vessels, KR has adopted machine learning operations (MLOps) to develop full-lifecycle technical services.

As part of this joint project, Sinokor will provide maintenance history data, while HD HMS will supply past operational data. KR will develop big data analytics, AI algorithms, and software to apply the technology to real ships.

KIM Daeheon, Executive Vice President of KR's R&D Division, states: "By applying CBM technology to ship engine rooms, this joint development project will serve as a significant foundation for transforming vessel maintenance and collecting big data to advance smart shipping technology. Moving forward, KR plans to expand CBM applications to various ship equipment, including low-flashpoint fuel supply systems and batteries, creating comprehensive lifecycle technical services that will drive the future of maritime operations."

MOU SIGNING CEREMONY FOR JOINT DEVELOPMENT PROJECT OF CBM TECHNOLOGY FOR SHIP'S ENGINE SYSTEM

SIMULATOR TECHNOLOGY

Kongsberg Digital has announced an important new simulator contract with Noble Corporation, one of the world's leading offshore drilling companies, headquartered in Houston, Texas USA.

The contract includes the delivery of state-of-the-art navigation, engine, and dynamic positioning (DP) simulators based on Kongsberg Maritime's market-leading K-Pos DP system. The simulators will be tailored and integrated with Kongsberg Maritime's Riser Monitoring System (RMS) and electronic Well Specific Operating Guidelines (eWSOG) to meet Noble's unique training needs.

Noble will be the first company globally to implement such an advanced DP drilling training solution for in-house Nautical Institute-accredited training. This innovative training installation is designed to enhance operational competencies, increase safety awareness, and promote effective team collaboration – critical factors in drilling operations where engineers, dynamic positioning operators, and drillers must work seamlessly together to solve potential challenges.

The simulators will also support root-cause incident analysis and help integrate legacy crews from recent mergers, fostering a cohesive and well-trained workforce.

Brian Herbert, Marine Training Simulation Supervisor at Noble, says: "Investing in Kongsberg's cutting-edge simulators is a testament to our dedication to our offshore workforce and an integral part of our safety and training programmes. This new immersive training environment will enhance the skills and preparedness of our crew and operators. By demonstrating our commitment to empowering and safeguarding our people, we work to attract top talent and set new industry standards for operational excellence."

"Our K-Sim simulators are transforming offshore training by offering professionals with an exceptionally realistic training environment that prepares them

for high-pressure scenarios without any risk to personnel, equipment, or environment," says Are Føllesdal Tjønn, Managing Director of Kongsberg Digitals Maritime Simulation Division.

"We are honored that Noble has chosen us to deliver solutions that fulfill their specific training needs and welcome them to our growing community of offshore customers, including companies like Equinor, Maersk and Heerema Marine, who recognise the value of investing in crew competence to enhance safety, sustainability, and operational efficiency."

Patrick Ewbank, Head of Learning and Development at Noble, adds: "Noble Corporation pioneered full-scale integrated team exercises for offshore drilling crews since 2013. Recognising that technical prowess alone is insufficient in our dynamic offshore environments, we seamlessly blend technical expertise with Crew Resource Management. This investment provides a realistic platform for crews to tackle challenges on their actual equipment, fostering teamwork and operational excellence across the drilling, technical and marine teams. The proven success of these team-based exercises underscores Noble's commitment to enhancing safety and operational efficiency."

CONIDIA'S STATE-OF-THE-ART LABORATORY

FUEL MICROBIOLOGY

Conidia Bioscience has opened a new laboratory at Surrey Research Park, marking a significant step forward in its commitment to advancing fuel microbiology research.

This state-of-the-art facility, dedicated to fuel contamination testing, will explore the evolving needs of the fuel industry, particularly supporting the deployment of sustainable fuels.

As industries shifts towards 'green' fuels, new challenges arise, particularly in managing microbial contamination. Biofuels have a propensity to attract more water than traditional fossil fuels, providing an ideal environment for microbial growth, which can lead to fuel system blockages, corrosion, and compromised fuel quality.

Conidia has invested heavily in people, facilities, equipment and new product development to address these challenges, including its latest innovation, FUELSTAT® One. Developed through years of research, with input from customers and partnerships with world leading R&D collaborators, FUELSTAT® One is a prime example of Conidia's dedication to providing advanced microbial detection and fuel management solutions.

"Our new state-of-the-art R&D facility is a key part of this investment," Jay Patel from Conidia says. "Located within the Research Park at Surrey University, the lab derives significant benefits from a vibrant research environment. With similar high-tech, innovative businesses on site, along with PhD students and professors from allied fields, there is abundant expertise to draw upon."

The new laboratory is equipped for advanced microbial contamination testing, drawing upon Conidia's 25 years of expertise and innovation. The primary ability is to make exhaustive testing of all species of microbes (fungi, yeasts and bacteria) across emerging novel fuel types, utilising both Conidia's testing kits and all other recognised test methods, allowing comprehensive benchmarking of fuel quality.

Unlike other labs focusing solely on sample testing, Conidia's new facility will conduct in-depth research to understand fuel microbiology and develop innovative testing solutions. This research is crucial to ensure that new fuels can be safely integrated into fuel systems without compromising performance or safety.

The facility also aims to support the broader fuel industry by offering collaborative opportunities for research and development. By working with partners across the aviation, marine and diesel fuel sectors, Conidia is positioning itself as a leader in fuel microbiology research, helping to set new fuel safety and reliability standards. The lab's capabilities will address current challenges and anticipate future issues as the industry continues to evolve.

Conidia is also committed to developing the next generation of experts in this field, focusing on training personnel to specialise in fuel microbiology. This includes partnerships with academic institutions to create opportunities for students and researchers to gain hands-on experience in advanced fuel testing and research.

As fuels advance rapidly and new blends emerge, Conidia's laboratory will play a pivotal role in researching microbial interactions and ensuring sustainable fuel solutions' ongoing safety and reliability" concluded Jay Patel.

EFFICIENT HULL CLEANER

ECOsubsea has launched its Ultra High Efficiency Hull Cleaning Service (UHEHCS) in Singapore, with the aim of making ecofriendly solutions affordable and available, using a powerful new remotely operated vehicle (ROV).

Extensive testing in the Singapore anchorage since August 2024has demonstrated ECOsubsea's advanced capabilities. Tests showed the ROV's superior speed, operating 10 times faster than conventional cleaning methods. "We cleaned a fully laden capesize vessel, with an 18m draft, in just four hours," says ECOsubsea CEO Tor Østervold.

Golden Ocean's Head of Global Operations, Tord Brath, comments: "ECOsubsea's ROV demonstrated impressive speeds and enhanced safety with minimal human intervention. This innovation exemplifies how efficient solutions align with sustainability goals, making it a forward-thinking choice for shipping companies."

ECOsubsea completed its debut commercial clean on the Odfjell tanker Bow Cedar in two hours. "Deployment time from docking alongside Bow Cedar to starting cleaning operation was about seven minutes," Østervold noted.

The ROV's efficiency enables hull cleaning during bunkering without prolonging port stays. "Our ROV operates in over wo knots of current, where divers face extreme hazards at even one knot," Østervold says. "This efficiency gap offers major time and cost benefits."

Odfjell Tankers' Port Captain for Asia Pacific, Odd Arne Hansen, highlights several benefits: "Increased efficiency due to operational speed; ability to work in conditions unsafe for divers; reduced risk to personnel; increased fuel efficiency, reduced emissions, and lower environmental impact through sediment collection and filtration."

ECOsubsea's solution is not only efficient, but economically competitive, the company says. "The cost is comparable with current polluting and unsafe solutions. It's safe, sustainable and economically viable – what would you choose?" Østervold says.

The company has chartered Eng Hup Shipping's largest vessel, extensively modifying it with a purpose-built ROV Launch and Recovery System (LARS), operator station and a 75-cbm filtration unit. ECOsubsea is also collaborating with waste-management firm Mencast to process collected biowaste.

Kenneth Lim, MPA Assistant Chief Executive, launched the ROV service at SNIC alongside Norwegian Ambassador Leif Trana. A formal contract signing with Eng Hup followed, with options to charter two additional vessels.

"In Singapore, we have access to up to 14 times the vessel capacity compared to our European stations. We're very pleased to be outcompeting ourselves," says Østervold.

With more than 5,000 ships signed up for cleaning during the initial licensing period, ECOsubsea aims to establish a global network of ROVs. "Conventional hull cleaning has been a transactional service with varied quality. We aim to be the one-stop shop for sustainable hull cleaning, delivering consistent quality worldwide," Østervold concludes.

(FROM LEFT) TOR ØSTERVOLD AND KLAUS ØSTERVOLD OF ECOSUBSEA, ARNE-KJETIL LIAN (DEPARTMENT MANAGER FOR INNOVATION NORWAY, SINGAPORE), KENNETH LIM (ASSISTANT CHIEF EXECUTIVE AT THE MPA), LEIF TRANA, NORWAY'S AMBASSADOR TO SINGAPORE, AND OLE CHRISTIAN TROLAND AND SILJE ENGLISH OF ECOSUBSEA

ECOSUBSEA'S SUSTAINABLE HULL-CLEANING SERVICE VESSEL ALONGSIDE THE PRODUCTS TANKER MAERSK CALLAO IN THE SINGAPORE ANCHORAGE

PORTS OF CALL

Those operating in ports and terminals face a number of challenges relating to the costs of using facilities, alongside operational constraints

In a recent case underscoring the essential nature of precise cost estimation in maritime logistics, the International Transport Intermediaries Club (ITIC) has settled a US$140,000 claim resulting from an error in calculating port charges. The incident involved a South American grain shipment where the pool manager's use of outdated cost estimates for port fees led to a substantial financial discrepancy.

A pool manager organised a ship to load a cargo of grain at a South American port. Using a Final Disbursement Account (FDA) from a previous ship's call at the same port, the manager estimated the port costs at $80,000. This figure was communicated to the pool owner and incorporated into the freight calculations for the voyage.

Unbeknown to the manager, the ship assigned for the current voyage was 40,000 metric tonnes larger than the previous one, placing it into a higher pricing bracket under the terminal's rules. Additionally, its deeper draught necessitated a second pilot, further inflating costs.

Consequently, the actual port charges escalated to $220,000, vastly exceeding the initial estimate. The unexpected extra cost of $140,000 was not included in the freight, resulting in a significant financial shortfall for the pool owner.

Upon investigation, ITIC recognised that the pool manager had failed to update the port cost estimates to reflect the specifications and requirements of the larger ship. Accepting responsibility for the oversight, ITIC settled the claim in full, compensating the pool owner for the unforeseen expenses.

Mark Brattman of ITIC comments: "This incident serves as a stark reminder of the critical importance of precise cost estimation and diligent planning in maritime logistics.

"The substantial shortfall due to inaccurate port charge estimates underscores the risks involved and the necessity of aligning cost calculations with ship specifications to avoid unforeseen financial impacts."

TT CLUB WARNS ON E-BIKES

The drive to decarbonise ports and terminals is intensifying with growing interest in using battery powered e-bikes, e-scooters, and e-motorbikes. Operators are tempted by the cheaper and cleaner alternative to diesel-powered vehicles. However, the TT Club warns about the significant risks associated with their use in facilities not designed to accommodate such vehicles.

> While battery-powered personal transport vehicles offer significant benefits in terms of decarbonisation and cost-effectiveness, their integration into ports, terminals, and other logistics facilities requires careful planning

Ports, terminals and logistics facilities are typically designed to accommodate large vehicles and cargo handling equipment. The introduction of smaller, more vulnerable road users like e-bikes and e-scooters presents unique challenges. These vehicles are less visible, making traffic management and the prevention of human-machine collisions much more difficult. Typically, terminal traffic layouts and pavement conditions, are designed for large vehicles and plant, not for smaller, more vulnerable, battery-powered personal vehicles.

TT Club has long-standing experience of such terminal risks, Risk Assessment Manager Neil Dalus comments on the question of paved surfaces in particular. "Designed to withstand high volumes and heavy loads, the terminal surfaces often suffer significant wear and tear, resulting in uneven road conditions. For smaller wheeled battery electric vehicles, these conditions can be hazardous. Traversing rail crossing points, especially when wet, and encountering spills of cargo or oils further increase the risk of accidents.

"Two-wheeled vehicles, being inherently less stable than four-wheeled vehicles, are particularly susceptible to these hazards," he highlights, emphasising the need for operators to take care in introducing their use.

As the use of electric personal vehicles blurs the lines between different user groups within a facility, such as pedestrians, plant and handling equipment operations, TT recommends additional terminal traffic safety planning. This should include consideration of licensing, training and personal protective equipment requirements.

Additionally, charging and maintenance of these vehicles can also present significant challenges. Emerging data indicates a higher risk of fire during the charging process, necessitating thorough due diligence in procurement of vehicles and their charging points. Proper fire risk assessments covering the location of charging points is essential to mitigate these risks, the club says.

Dalus concludes: "While battery-powered personal transport vehicles offer significant benefits in terms of decarbonisation and cost-effectiveness, their integration into ports, terminals, and other logistics facilities however requires careful planning and consideration of risk.

"Addressing these issues will be crucial to achieving a balance between

KAZAKHSTAN IN CENTRAL ASIA IS A KEY PRODUCER OF MINERALS THAT ARE EXPORTED WORLDWIDE © MARTIN ENGINEERING 2024

MARTIN ENGINEERING'S UNIQUE CLEANSCRAPE CONVEYOR BELT CLEANER © MARTIN ENGINEERING 2024

MARTIN ENGINEERING'S SQC2S SECONDARY BELT CLEANER © MARTIN ENGINEERING 2024

innovation and safety in the ongoing and rapidly developing drive to achieve a cleaner working environment in the cargo handling industry."

EXPANSION IN ASIA

Martin Engineering has announced fresh expansion in Central Asia with a new business unit in Kazakhstan. Based in the country's largest city and commercial centre, Almaty, in the South East of Kazakhstan, the new venture will act as a regional hub enabling Martin to bring its full range of products and services to the fast-growing mining sector across Central Asia.

Kazakhstan is the world's ninth-largest country by land area (approximately 1,000,000 square miles) and has a diverse geology comprising a rich array of metal ores and mineral resources. Consequently mining and minerals production is playing an increasingly important role in the Kazakh economy with most materials exported.

The decision to establish a business unit in Kazakhstan builds on Martin Engineering's success in the country to date. That includes delivering innovative conveyor belt cleaning solutions to one of Kazakhstan's largest copper producers to maximise plant efficiency and productivity.

Now Kazakhstan's mining and mineral processing companies have access to a broader portfolio of exceptional conveyor products, such as Martin's revolutionary CleanScrape belt cleaners, versatile Orion SQC2S Secondary Belt Cleaner, and high performance Air Cannons featuring SMART Series Nozzles to ensure optimal material flow.

Kazakh customers can also benefit from faster service response times, improved supply chain logistics and new product trials, as well as enhanced problem-solving services like Walk The Belt and tailor-made Foundations training for in-house maintenance teams.

The new business will be led by General Manager Oleg Glukhov. "Kazakhstan is one of the world's key sources of metals and industrial minerals," he explains. "Processing materials safely, efficiently and profitably is important, and that's where Martin Engineering comes in. Our market-leading products and services are proven to solve materials handling challenges for the world's biggest mining and minerals companies."

Martin Engineering has become synonymous with the development and manufacture of innovations that deliver cleaner, safer more productive bulk materials processing. The company holds dozens of patents for engineering designs that have revolutionised workplace safety and production efficiency in foundation sectors like mining, steel, cement and fertiliser production.

HUNTERSTON GO-AHEAD

A £150m scheme to transform the site of the former Hunterston coal terminal in North Ayrshire has been given the go-ahead.

Peel Ports Clydeport, which owns the site, has been granted planning permission to fill in the dry dock and create a "hub for the blue and green economies".

Plans for the 350 acre (142 hectares) site include the world's largest liquid air energy storage facility and subsea cable manufacturing.

The company claims the work will attract £3.5bn in inward investment and create more than 5,000 jobs.

The redevelopment work is scheduled to begin in 2025 and will take about two years to complete.

Peel Ports says the work will help increase the opportunities for expanding offshore wind power off the west coasts of Britain.

The company says up to 90% of the site has been optioned by firms in the sustainable energy sector.

Future tenants would include companies working on subsea cable manufacturing and the construction of gravity base structures. These are very large submersible structures that have heavy bases and sit on the seabed, held in place by their weight and friction.

Traditionally used in the oil and gas industry, the technology behind them is being adapted for use in the off-shore wind sector.

Lewis McIntyre, managing director of port services at Peel Ports Group, says the site would become a "major facilitator" of the UK's transition to sustainable energy.

"There will be no energy transition without ports, and harnessing the potential of sites like Hunterston is key to achieving the UK's net-zero goals," he says. "The knock-on benefits for the local and national economies are also significant. We look forward to working with the policymaking community to create the investment conditions we need to replicate the success of Hunterston at other sites across the country."

The Hunterston terminal was once one of Scotland's most important industrial sites. It was opened in 1979, creating a deep-water port to allow iron ore for the Ravencraig steelworks to come into the country. After the closure of Ravenscraig in 1992, it was used to import coal for the Longannet and Cockenzie power stations in Fife and East Lothian. That business came to an end in 2016 with the closure of Longannet. The owners began clearing the site in 2019.

THE DEEP CHANNEL AND MILE-LONG JETTY ALLOWS SHIPS OF ANY SIZE TO DOCK AT THE TERMINAL. IMAGE SOURCE, PEEL PORTS

BUILDING ON SUCCESS

Shipbuilding and repair presents a number of challenges to owners and operators as they try to tackle the requirements of new environmental rules

BIMCO has launched a Ship Recycling Alliance to help accelerate safe and environmentally sound recycling of ships. The alliance will co-ordinate views from the ship recycling industry and the shipping industry and help facilitate the global implementation of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (HKC).

In June 2025, the HKC will enter into force. This comes at a time when more than 15,000 ships are estimated to be recycled over the next 10 years and the need for compliant yards from main recycling states such as India, Bangladesh and Pakistan is critical.

Today, only a minority of shipowners choose voluntary HKC compliant recycling. Therefore, co-ordinating the voices of the industries is crucial.

"Part of the ship recycling industry is already trying to live up to the HKC standards ahead of its entry into force. To succeed in having our ships recycled responsibly and safely for people and the environment, we need all stakeholders to engage and step up pace. The Ship Recycling Alliance will connect stakeholders, advise regulators and create awareness among the public," says BIMCO's Secretary General and CEO, David Loosley.

An important task will therefore be to liaise with the International Maritime Organization , the Secretariat of the Basel Convention and the states that are party to these organisations to seek legal clarity on the interaction between both conventions.

This will include assessing, considering and responding to any proposals for future amendments to the HKC, and providing support for the implementation and enforcement of the BC requirements for the management of waste originating from the ship's recycling process.

"It is high time for an initiative like the Ship Recycling Alliance to be launched and put to work. We need an alliance that can formulate and represent the views of the international ship recycling industry and connect that with all other stakeholders involved. Doing so, we strongly believe we can move forward and fuel progress," says Dr. Nikos Mikelis, non-Executive Director of GMS, former IMO Head, Marine Pollution Prevention and Ship Recycling, Marine Environment Division and Chairperson of the alliance.

The founding members of the alliance are BIMCO, the Bangladesh Ship Breakers and Recyclers Association, the Turkish Ship Recycling Industry Association (GEMISANDER), global cash buyer GMS, ship recycling services' company Guideship, Pakistan Ship Breakers and Recyclers Association, the Ship Recycling Industries Association of India, the International Ship Recycling Association , global cash buyer Wirana and Indian ship recycling group, Bansal Group.

3D DESIGN APPROVAL

Bureau Veritas Marine and Offshore (BV) has signed a memorandum of understanding (MoU) for a joint development project (JDP) agreement with HD Hyundai Samho (HSHI) and Siemens Industry Software (Siemens DISW) to implement a 3D model-based design approval process using NX CAD.

The JDP will provide technical support for 3D model creation using NX CAD, which includes the integration of key drawing information into the 3D model, and establish a collaborative framework for 3D model-based design approval as part of this new process.

This approach to model-based approval will serve as a foundation for the future of shipbuilding, supporting the industry's digital transformation through Model-Based System Engineering (MBSE).

The JDP will leverage Siemens DISW's NX CAD and Teamcenter, as well as Bureau Veritas' VPM system. BV and HSHI will initially apply the 3D-based design approval process to a portion of the 174K LNG carrier currently under construction, with plans to expand it to all vessel types. The adoption of a model-based approval process will enhance information sharing with the classification society while leveraging the secured neutral format models for interpretation and simulation, ultimately accelerating the design approval process.

Alex Gregg-Smith, Senior Vice President, Asia Pacific (APA) at BV, says: "3D model-based approach lays the foundation for the adoption of digital transformation of classification in the shipbuilding industry. As the industry continues to embrace more sophisticated digital technologies, this project with HD Hyundai Samho and Simens DISW will serve as a valuable case study, demonstrating the benefits of seamless integration between design, approval, and production."

Oh Min AHN, Executive Vice President of HD Hyundai Samho, adds: "Model-based design approval will accelerate the digital transformation of the shipbuilding industry by linking models created at the design stage to the production stage."

Byung Joon OH, Country Manager of Siemens Digital Industries Software comments: "Siemens Digital Industries Software is pleased to collaborate with HD Hyundai Samho and BV to co-create value through process innovation based on the Siemens Xcelerator platform and aspires to contribute to reinforcing the competitiveness of Korea's shipbuilding industry."

REPRESENTATIVES FROM BUREAU VERITAS MARINE AND OFFSHORE, HD HYUNDAI SAMHO AND SIEMENS INDUSTRY SOFTWARE LTD. AT THE MOU SIGNING CEREMONY.

EMISSION-FREE STEEL

SSAB's subsidiary Tibnor is to supply SSAB Zero steel made from recycled steel to Salthammer Båtbyggeri in Norway. These will be the first batches of SSAB Zero to be delivered to the

shipbuilding industry.

SSAB Zero is made from recycled steel and produced with fossil-free electricity and biogas – resulting in steel with virtually no fossil carbon emissions.

The Salthammer shipyard in Vestnes is building two state-of-the-art approximately 30m electric-powered supply ships commissioned by the Norwegian shipping services company AQS Rederi.

Tibnor will deliver a total of around 300 tonnes of SSAB Zero steel to Salthammer Båtbyggeri in two batches. AQS Rederi has commissioned two Coastern 28eH supply ships from Salthammer Båtbyggeri , which will be used for fish farming tasks.

Both vessels feature a newly-developed design from Tomra Engineering. The ships focus on energy efficiency and design flexibility, and will have electric propulsion and be powered by 2000 kWh and 1600 kWh batteries. The large battery pack can be charged with shore power and enables continuous electric use. The ships are due to be delivered in Q4 2025 and Q2 2026.

"It is absolutely fantastic that the focus is on environmentally friendly zero-emission steel and that it is completely in line with our goals in innovation and sustainability. With this, we hope that we can show that there are good and greener solutions in our industry," says Robert Moen, head of HSE, Quality and Sustainability at Salthammer Båtbyggeri.

"This represents an important step for AQS towards the realization of our ambitions," says AQS General Manager Pål Anders Lauvsnes. "In collaboration with Salthammer Båtbyggeri , we have developed two robust vessels that support our goal of having an all-electric fleet by 2033. The aquaculture industry is developing rapidly, and high demands are placed on vessels and crew. The new vessels will make AQS better equipped to meet the customers' expectations in terms of quality, efficiency, climate and environment, while at the same time ensuring the working environment, safety and well-being on board for our crew."

"It's great to have Salthammer aboard on our journey toward fossil-free value chains. SSAB Zero is a great material for new generation electric-powered supply ships. We will deliver the steel in 6-15 mm thick steel sheets, and the batch for the first ship will leave already in November," says Svein Johansen, Sales Director at Tibnor.

"The quality and properties of SSAB Zero are equal to those of SSAB's conventional steels. SSAB Zero can help the entire marine and offshore industry to reduce carbon emissions without compromising quality standards," says Matts Nilsson, Head of Sales for Sweden and Norway at SSAB Europe.

The Coastern 28eH is a versatile supply ship with large cranes, efficient deck equipment and a bollard pull of more than 25 tonnes. The ships are equipped with an anti-tilting system to maximize crane capacity. The ships are adapted for 24-hour use by minimising noise and providing comfortable cabin spaces for the crew.

SSAB Zero has near zero fossil emissions during steel production, without mass balancing allocation of emission reduction or carbon emission offsetting.

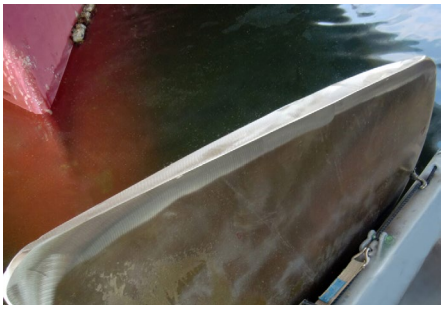
PROPELLER REPAIR

In a recent report on one of its repair operations, Belgium-based Hydrex outlined its approach to a propeller repair, which took place without the need to dry dock the vessel.

Two parts of the tip of one of the four propeller blades of a 190m bulker were damaged. They needed to be cropped to restore the propeller's efficiency. Hydrex sent a team of diver/technicians to the ship's location in Germany to carry out the repair afloat.

Having developed different procedures for different kinds of damage, Hydrex teams are trained to make the best out of a bent or broken propeller. Ideally, the in-house developed cold straightening technique is used. This procedure enables Hydrex technicians to straighten damaged blades in-water, allowing commercial operations to continue without the need to drydock.

In the following example cropping was the only option, since the type of damage to the propeller blade did not allow cold straightening. This kind of repair is carried out with the propeller blade cutting equipment developed by our research department. In cases like this, where there is an even number of blades, an identical piece will be cropped from the opposite blade to restore the hydrodynamic balance of the propeller. By doing so, the best possible efficiency is obtained.



ONE OF THE PROPELLER BLADES OF A BULKER WAS MISSING PARTS. CAREFUL RESTORATION ENSURED IT WAS BACK TO WORKKING ORDER

SAFE PASSAGE

New International Maritime Organization rules came into force on 1 January this year related to shipment of charcoal cargo in packaged form and BIMCO has issued advice on how market players should deal with this

The whole supply chain for charcoal cargoes leading up to sea transportation has changed as a result of the amendments agreed at the International Maritime Organization (IMO).

According to BIMCO: "This will bring about major changes to how charcoal must be safely packed for sea transport in packaged form including containers, as well as ensuring safer transportation through improved packaging and stowage provisions and requiring mandatory dangerous goods transport documentation."

The amendments have come about because of the number of fires that have resulted during charcoal shipments as well as misdeclaration by shippers, which have resulted in changes under the International Maritime Dangerous Goods Code in Amendment 42-24.

BIMCO says it is very happy with the results of discussions on the changes which have been taking place for the past five years.

The organisation says: "One of the major changes is that charcoal shipments in packaged form included in containers will no longer be given exemptions to be shipped as non-dangerous goods under the IMDG Code even if the charcoal shipment has passed the UN N4 test for self-heating (IMO class 4.2 dangerous goods, ie, substances liable to spontaneous combustion). "

Another change is the requirement for weathering and temperature controls required when packing and also during the voyage. Additional information is also required for the dangerous goods transport documentation when shipping such cargoes.

As part of Amendment 42-24 to the IMDG Code, the charcoal amendments came into voluntary application on 1 January 2025 and will enter into mandatory force on 1 January 2026.

These changes do not affect charcoal that is shipped in solid bulk form under the International Maritime Solid Bulk Cargoes (IMSBC) Code. Charcoal that is classed as 4.2 is not permitted to be shipped in bulk under the IMSBC Code. *BIMCO members can access details of changes at: bimco.org*

The International Group of P&I Clubs and the TT Club have also issued guidance on handling the product safely.

FLEXITANKS BEST PRACTICE

The International Union of Marine Insurance (IUMI) has published a comprehensive best practice guide for the safe use of flexible tanks for the transport of liquid cargoes. Its objective is to provide underwriters, brokers and their clients with practical guidance to ensure cargoes transported by flexible tanks arrive intact at their chosen destination.

Flexible tanks – or flexitanks – are poly film bladders that are filled with a liquid cargo (such as dairy products, wine, fruit juice or non-dangerous oils) and then placed into a standard IOS container for transportation.

Explaining the issue, Lars Lange, Secretary General of IUMI, says: "The use of flexitanks has grown significantly in recent years mainly due to reduced transportation costs when compared with a tank container. But this method, if not correctly managed, is easily prone to damage. And once a flexitank is ruptured a total cargo loss usually occurs. This impacts not only on the insurer, the cargo owner and carrier but there is a very real risk of third-party and possible environmental impact as well."

The paper outlines a range of potential risks including poor stowage, incorrect installation, overloading, material deficiencies, transport issues and others. It goes on to highlight the potential impact, which might include additional costs incurred over and above the loss of the cargo and consequential damage such as environmental, socal and governance or third-party issues.

Recommendations for safe use and carriage are contained within the main paper and its three detailed annexes. They include:

- selection of flexitanks and containers
- container preparation
- installation
- transportation
- emergency preparedness.

Checklists covering selection, preparation, installation and loading are also included. Lars Lange concludes: "One of IUMI's central roles is to gather and share knowledge amongst the international marine insurance community to enhance the safety and efficiency of seaborne trade. These guidelines focus on a specific issue that, in our view, will benefit from a change to current practices so that liquid cargoes transported by flexitanks remain safe and free from damage. "

IUMI's 'Flexible Tanks for Liquid Bulk Cargo: Recommended Best Practice' paper, together with the three annexes, is available to download at: iumi.com/opinions/position-papers

CRANKCASE CAUTION

As the industry shifts towards alternative fuels in response to environmental regulations and sustainability goals, the safety risks associated with these fuels cannot be overlooked. For example, crankcase explosions – a critical hazard in engine operation – become of even more concern in the context of gas and low flashpoint fuels.

To address this issue, and as part of the International Association of Classification Societies (IACS) commitment to assisting the industry to decarbonise safely, IACS has published the latest edition of Unified Requirement (UR) M10, which introduces new safety requirements to protect internal combustion engines from crankcase explosions.

The revised URM10, specifically designed for engines running on gas or low flashpoint fuels, addresses the unique challenges posed by these fuel types thereby ensuring that safety measures keep pace with evolving technologies and thus safeguarding maritime operations.

Revision 5 of UR M10 builds on key existing safety standards essential for

protecting against crankcase explosions. These include the requirements for crankcases to be constructed to withstand the internal pressures generated by potential explosions. For engines with a crankcase volume exceeding 0.6m^3, additional explosion relief valves are required to safely manage the excess pressure.

Furthermore, a crankcase explosion relief valve must be in compliance with type testing procedures stipulated in IACS UR M66, as incorporated in IACS Members Rules, ensuring they meet the unified technical requirements fit for safety purposes, designed to safeguard against explosions.

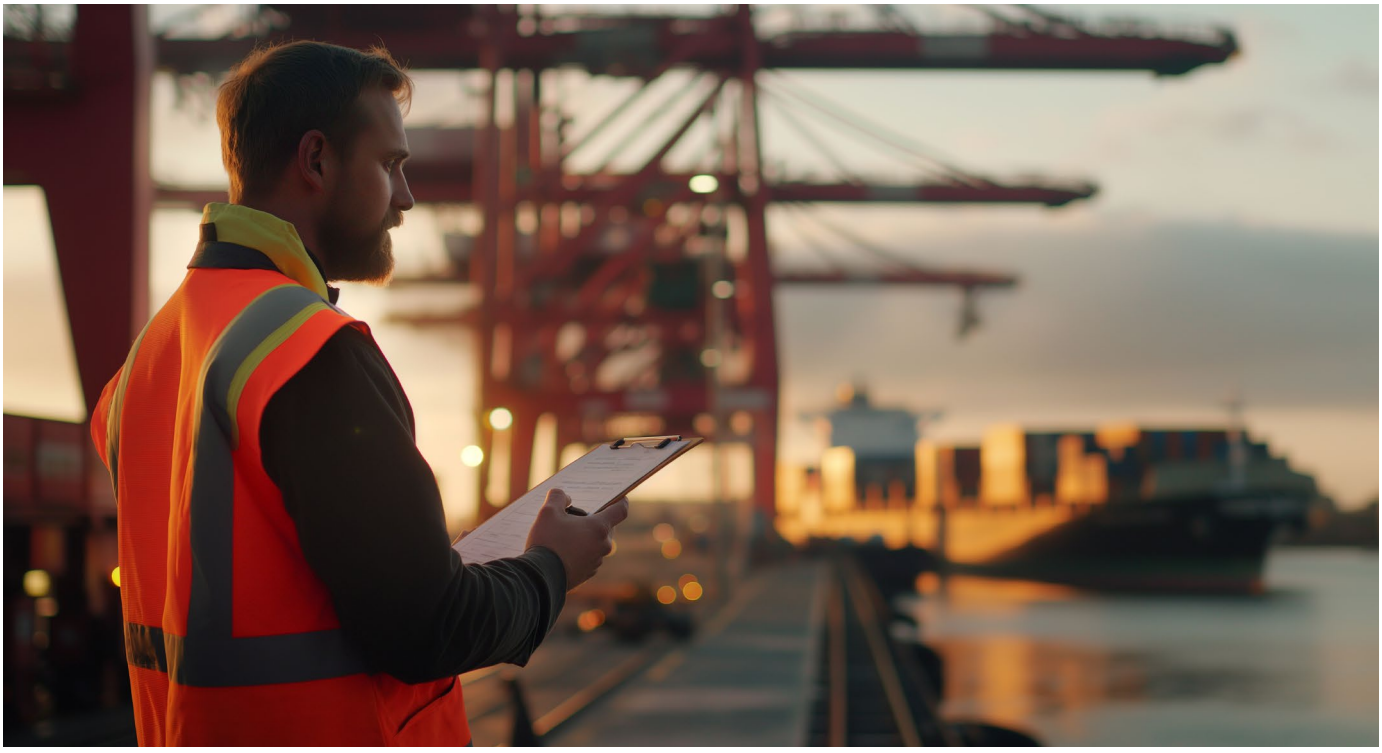
This new edition of UR M10 was achieved through extensive collaboration with key industry stakeholders, including engine manufacturers as the new guidelines need to be practical and feasible for real-world application, reflecting the latest technological advancements in engineering practices and safety protocols.

In this latest edition, IACS has also introduced the following improvements to address the safety requirements specific to engines fuelled by gas or low flashpoint fuels:

- Airflow requirements: technical conditions for the external airflow into the crankcase have been specified for engines fuelled with gas or low flashpoint fuels, ensuring operational safety.
- Lower explosive limit (LEL): the revised UR M10 now defines the lower explosive limit (LEL) for gas, fuel vapors, or mixtures in the crankcase, contributing to enhanced safety measures.
- Crankcase pressure control: to prevent interference with critical safety devices, such as oil mist detection systems during forced extraction of the crankcase atmosphere.
- Safety evaluation: engines fueled by gas or low flashpoint fuels must undergo a comprehensive safety evaluation to ensure gas concentrations remain below the LEL or that explosion risks are duly mitigated.
- Explosion risk mitigation: Predefined measures for reducing the risk of crankcase explosions have been introduced, ensuring greater protection against potential hazards.
- Engine bearing monitors: engine bearing temperature monitors or equivalent devices are now classified as essential safety components.
- Comprehensive documentation: documentation detailing the effectiveness of the safety measures to prevent explosive conditions is to be provided by manufacturers and designers.

Commenting on the revised UR, IACS Secretary General, Robert Ashdown, says: "As the industry continues to adopt alternative fuels, IACS remains committed to advancing maritime safety standards. By introducing enhanced safety requirements tailored to modern engines and different fuel types, URM10 ensures that the industry remains equipped to mitigate the risk of explosions, while adapting to the introduction of sustainable fuels."

Stakeholders are encouraged to review these changes and update their safety practices accordingly.



A NEW TRADE WAR LOOMS

Donald Trump's victory in the US presidential election is "a step in the wrong direction" for international trade as importers fear another spike in ocean container shipping freight rates

Trump has vowed blanket tariffs of up to 20% on all imports into the US and additional tariffs of 60% to 100% on goods from China.

Data from Xeneta – the ocean and air freight intelligence platform - shows the last time Trump ramped up tariffs on Chinese imports during the trade war in 2018, ocean container shipping freight rates spiked more than 70%.

Peter Sand, Xeneta Chief Analyst, says: "Shipping is a global industry feeding on international trade, so another Trump presidency is a step in the wrong direction.

"The knee-jerk reaction from US shippers will be to frontload imports before Trump is able to impose his new tariffs. Back in 2018, the tariff on Chinese imports was 25%; now it is increasing up to 100% so the incentive to frontload is even greater.

"If you have warehouse space and the goods to ship, frontloading imports is the simplest way to manage this risk in the short term – but it will bring its own problems. A sudden increase in demand on major trade lanes into the US when ocean supply chains are already under pressure due to disruption in the Red Sea will place upward pressure on freight rates.

"We saw the negative impact of tariffs during Trump's first term in office in 2018 when ocean container shipping rates spiked 70%. Shippers will be fearing more of the same this time around.

"In the longer term, another Trump presidency will reignite the trade war with China and provoke retaliatory action. In 2018, we saw China respond to US aggression by imposing tariffs of its own, which added even more fuel to the fire, so there is a risk this situation could escalate further in the months and years to come."

Average spot rates from the Far East to US West Coast and US East Coast have remained relatively flat in the weeks leading up to the US Election, down -3.5% and -2.5% respectively since 15 October.

However, the current average spot rates of US$5,210 per FEU (40ft container) into the US West Coast and $820 per FEU into the US East Coast are 167% and 134% higher than 12 months ago, primarily due to the ongoing impact of conflict in the Red Sea.

Sand says: "2024 has been a brutal year for US shippers who have already endured massive disruption due to the Red Sea crisis and spiralling freight rates. There is also the looming threat of further strike action at ports on the US East Coast and Gulf Coast in January next year.

"Another Trump presidency will not be welcomed by US importers and exporters, but they needed a swift and clear result in the election.

"Uncertainty is toxic for supply chains, so at least the industry now has a clearer understanding of the financial and operational risk and can execute the plans they will have prepared in the event of another Trump presidency."

PORT BAN

Shandong Port Group has banned US-sanctioned tankers from calling into its ports in the eastern Chinese province, home to many independent refiners that are the biggest importers of oil from countries under US embargo, three traders said in a Reuters report.

The province imported about 1.74m barrels per day (bpd) of oil from Iran, Russia and Venezuela last year, accounting for about 17% of China's imports, ship tracking data from Kpler showed.

If enforced, the ban would drive up shipping costs for independent refiners in Shandong, the main buyers of discounted sanctioned crude from the three countries, the traders added.

Washington recently imposed further sanctions on companies and the shadow fleet that deal with Iranian oil. President-elect Donald Trump, who took office on 20 January, is expected to tighten sanctions further on Iran, as he did during his first administration.

The ban could slow imports into China, the world's largest oil importing nation, traders said.

CORROSION PROTECTION

Xiamen Minhua Shipping has specified a Steelpaint corrosion protection system for a trio of newbuild multi-purpose cargo ships building at Fujian Shipbuilding's yards in China.

The order marks the Germany-based coatings specialist's first newbuilding contract with a Chinese shipowner.

The first vessel in the series, the 12,000dwt *Min Hua 9* delivered from the Fujian Hengsheng shipyard in June, is now operating with a Stelpant-PU-Zinc universal primer protecting steel cargo holds, hatch covers, decks, topsides and hatch coamings against corrosion.

The polyurethane and zinc-based primer will also protect sisterships *Min Hua 15* and *Min Hua 16*, both of which are under construction at the Fujian Donghai Shipyard, with deliveries scheduled for December 2024 and November 2025.

Li Jianbin, Xiamen Minhua Shipping's General Manager, says: "The operational profile of these multi-purpose cargo carriers required a long-lasting, fast-drying and easy-to-apply primer that could be relied upon. After experience with conventional epoxies failing to properly protect cargo holds against impact damage and corrosion, we found Stelpant-PU-Zinc to have better impact resistance.

" It is too early to confirm, but we expect the primer will reduce through-life coating repair and maintenance costs by about 50% compared to previous applications."

With its high-solid formulation and finely meshed zinc pigments, Stelpant-PU-Zinc can be applied in temperatures ranging from -5°C to +50°C, and with a relative humidity level as high as 98%.

For tank tops and lower stools/hoppers, Steelpaint recommends a film thickness of 2 x 80µm after grit blasting to Sa2.5, while other areas need only one 80µm coat before a 120µm application of a conventional topcoat epoxy.

Dmitry Gromilin, Steelpaint's Chief Technician, says: "This contract represents a significant milestone for Steelpaint in China. While we have corrosion protection systems on a number of Chinese-built vessels, this is our first newbuilding specification for a Chinese shipowner.

The success of the first application aboard *Min Hua 9* will help further establish our presence in China and open the door to more shipowners across the Asia-Pacific region."

Compatible with most top-coats without the need of a tiecoat, the high zinc content of Stelpant-PU-Zinc provides cathodic protection and can be applied on the outer hull areas preventing corrosion damage. The zinc-rich primer can be easily recoated over the vessel's lifetime, affording smart repair at dry-docking.

A Chinese bulk carrier operator is currently trialling Stelpant-PU-Zinc on a 100m^2 test patch in the cargo hold of one vessel. Another operator is also trialling the corrosion resistant coating on a ship's hull (topside) and crane.

COATING ADDS FUEL SAVINGS

Marine coatings company Nippon Paint Marine recently announced the successful application of Aquaterras, Nippon Paint Marine's biocide-free, low-volatile organic compounds (VOC), self-polishing copolymer (SPC) solution, to a Wan Hai vessel, in China.

The Aquaterras coating provides sustainable protection for the hull from fouling to deliver fuel savings of up to 14.7% over 60 months, compared with the market average speed loss, while also reducing carbon emissions.

In July 2024, Wan Hai Lines' 71,336dwt container vessel *M/V Wan Hai 613* entered Zhou Shan Chang Hong Shipyard, China, for scheduled ship repair and maintenance. During the dry-docking, Nippon Paint Marine applied a full coating with a newly developed low-VOC Aquaterras SPC solution.

Released in 2021, Aquaterras broke new ground in fouling prevention with its biocide-free formulation, representing a world first in the development of fouling protection technology.

Aquaterras is an SPC coating that protects the marine environment by eliminating the elution of biocides into our seas and avoiding harm to untargeted marine life. The low friction coating protects marine life while achieving significant improvements in carbon reduction and fuel efficiency, compared with the market average, with effective fouling protection.

Kazuaki Masuda, Corporate Officer, Technology Division Director at Nippon Paint Marine, says: "The first application of Aquaterras in China is a significant milestone in our product development and we are thrilled to take this step forward with our longstanding customer and trusted partner, Wan Hai Lines. The incorporation of low-VOC technology into the coating builds on Aquaterras' legacy of protecting our marine environment, while also maintaining the industry standard in antifouling performance."

A Wan Hai Lines representative says: "Since 2016, Wan Hai Lines has relied on Nippon Paint Marine to provide our vessels with the latest in high-performance antifouling coatings, which continue to meet and exceed our expectations.

"We were thrilled with the performance of Fastar, which has contributed significantly to Wan Hai vessel's fuel savings and we are proud to continue our longstanding collaboration with the latest offering from Nippon Paint Marine's product line, Aquaterras."

SMOOTH OPERATORS

New technology is having a transformative effect on port operations

Truck access at Hamburger Hafen und Logistik's (HHLA) Container Terminal Altenwerder (CTA) in Hamburg is now fully digitalised and managed via the passify app. With the launch of the app, HHLA is replacing the trucker card that had previously been in use at all of its Hamburg terminals, thus making truck handling more secure and efficient.

Since the go-live at the beginning of the year, more than 200,000 arrivals have already been processed using passify at HHLA's three Hamburg terminals.

With the successful implementation at CTA, HHLA has now finalised the launch of the digital solution.

Previously, passify had already been rolled out at the Burchardkai (CTB) and Tollerort (CTT) terminals. The innovative self-service app automates and digitalises truck handling at the terminals and depots and makes it possible for drivers to book slots, check in digitally and identify themselves using two-factor authentication. More than 13,000 truck drivers and haulage companies currently use passify in order to manage their access to the terminals.

Rebecca Vick, Director Container Development Hamburg, says: "By implementing passify, we are not only making truck processing at our Hamburg container terminals more secure and efficient – we're also setting a new standard in the digitalisation of logistics processes. Thanks to the exceptional collaboration of all those involved, we have been able to implement the launch seamlessly and quickly.

"This result is another example of how HHLA uses cutting-edge technologies in order to further streamline processes for our partners and clients."

Marcel Lindemann, Co-Founder of passify, says: "The successful launch of passify at the HHLA container terminals is major milestone for our start-up. We are proud of the fact that our solution is now successfully being used at the majority of the Hamburg terminals.

"We are continuing to develop passify on an ongoing basis in close cooperation with haulage companies and truck drivers. The positive feedback from our community strengthens us in our mission to significantly expand the range of functions offered by passify and to roll the app out internationally. It is our aim to become the gold standard for simple, secure and synchronised truck processing at terminals around the world."

The security of the HHLA terminals has also been improved with the successful launch of passify. The physical trucker card that had been in use previously has now been completely replaced by the digital app. Passify enables the instant and unambiguous authentication of drivers via the app, fulfilling the highest security and data protection standards, as well as all requirements of the globally recognised ISPS Code.

The app is fully integrated into the gate processes of the HHLA terminals and supports truck drives throughout all processing steps. Future functions, such as a mobile self-service terminal, will make the app even more multifaceted. Passify also ensures that all key information and documents required for accessing the terminal are kept available from a single, practical location.

The product was developed through HHLA Next, HHLA's venture-building and investment unit. This year, passify GmbH was established as an independent subsidiary of HHLA Next. In addition to the Hamburg terminals, passify is already being used at a Romanian hinterland terminal. Further international rollouts are planned.

To ensure a smooth transition, HHLA and the passify team actively supported the haulage companies during the implementation phase.

HAMBURG LINK UP

The Hamburg Port Authority (HPA) in Germany and the Vancouver Fraser Port Authority in Canada have signed a Memorandum of Understanding (MOU) to collaborate across a range of port priorities including decarbonisation, safety and cruise.

The MOU, signed last November, will see the two port authorities increase cooperation across multiple key areas: maritime decarbonisation; safety; digital practices and new technology; and cruise operations.

Work under the MOU will include assessing readiness to support alternative fuel bunkering, improving safety with new technology like drones, using predictive analytics to optimise operations, data governance and cyber security best practices, and opportunities for sustainable cruise port accreditation.

The two port authorities will also create new opportunities for employees to gain practical experience with the daily challenges and practices at the partner port.

"I am delighted to have signed this agreement with the Vancouver Fraser Port Authority. This further expands our network of partners who want to work with us on the decarbonisation of maritime transport," says Jens Meier, CEO of the HPA. "In addition, Vancouver is a valuable sparring partner for us in the exchange on efficient cruise handling within the city."

"The Port of Vancouver is key trade hub for Canadians and their businesses, and we are thrilled to partner with the Port of Hamburg on work that will improve operations, sustainability and safety at both ports," says Peter Xotta, President and CEO, Vancouver Fraser Port Authority.

"We look forward to working in collaboration with our partners in Hamburg to improve efficiency, sustainability and innovation at both ports – in support of Canadians and Germans."

RAILWAY OVERHAUL

The railway is the dominant mode of transport for the transport of goods to the seaports in Hamburg and Bremen. It thus fulfils an important task, the significance of which will increase in order to successfully achieve an ecological transport turnaround.

However, the infrastructure is outdated and traffic volumes are increasing. In order to meet these challenges, DB InfraGO, a federally owned railway infrastructure company, has begun a general overhaul of the network.

The participants at the 8th Rail Conference in Bremen fundamentally supported the measures, but also called for functioning connections during this phase, as host Sebastian Doderer, head of the Rail Expert Group, already formulated in his welcoming address: '"Even during the upcoming renovation of the high-performance corridors, which we welcome, the accessibility of our northern German seaports by rail must be ensured."

At the conference, which was organised by the rail specialist group in cooperation with the Hamburg Logistics Initiative, Port of Hamburg Marketing and the Free Hanseatic City of Bremen, representatives from politics and business as well as Deutsche Bahn presented their views and requirements to the audience.

Continuous and efficient rail connections are of the utmost importance, especially for the seaports of Hamburg and Bremen, where more than half of all containers already find their way to and from the port by rail. This was emphasised by Kristina Vogt, Senator for Economic Affairs, Ports and Transformation of the State of Bremen: "Bremen is continuously investing in the further development of the Bremen-Bremerhaven railway in order to continuously increase the already leading rail share in hinterland traffic in the future. In doing so, we are making a significant contribution to promoting the shift to rail and supporting climate targets in both the transport sector and industry.

"The federal government must act quickly and decisively to ensure the success of these measures. Implementation of the Federal Transport Infrastructure Plan 2030 in the ports' hinterland is overdue."

Olaf Lies, Lower Saxony's Minister for Economic Affairs, Transport, Construction and Digitalisation, added: "The plan to renovate the main routes as part of the general renovation is highly ambitious and deserves respect. It is a courageous step towards better railways. However, we must not lose sight of freight transport, ports and coastal regions. That is why we need to work together on the issue of port hinterland connections, which also includes Bremen and Hamburg. Accessibility of the northern German coastal regions will become increasingly important as the economy transforms."

THE 8TH RAIL CONFERENCE IN BREMEN

In his presentation, Dr Wolfgang Weinhold, Programme Manager for the General Renovation of the High-Performance Network, explained that DB InfraGO has recognised the signs of the times. The focus of the general renovation is on a more reliable infrastructure, higher performance, an improved customer experience and more planning reliability, while reducing future traffic restrictions to a minimum. Initial experiences have been gained from the Riedbahn pilot project. The construction phase has been completed and commissioning is underway.

The panel discussion, with the participation of representatives from the rail and port industries, made it clear that the general refurbishment is generally welcomed, but that the accessibility of the North German seaports must be ensured.

"High-performance rail freight transport is a success factor for the German seaports. We are doing everything we can to ensure that this transhipment centre remains in the future," emphasised Jan Müller, CEO of J. Müller Aktiengesellschaft in Brake and President of the Oldenburg Chamber of Commerce.

Albert Bastius, COO of TX Logistik, also reiterated why rail is important as a means of transport: "Rail is by far the most environmentally friendly of all modes of transport. This positions us per se as a committed company for sustainable transport and climate protection.

"We are doing everything we can to make it easy for our customers to choose rail and aim to change the modal split in the medium and long term by shifting from road to rail."

The Rail Working Group is organising the 9th Rail Conference in Hamburg on 8 December 2025.

PUMP FAILURE

The failure of a cargo pump onboard a newbuild tanker has highlighted the need for crews to regularly monitor rotating machinery for excessive wear and vibration, if unnecessary downtime and costs are to be prevented.

The German owner took delivery of a 2021-built chemical tanker from a Chinese yard in 2021, but the long shaft driving the cargo pump's impeller was not correctly installed, destroying the pump beyond repair and delaying cargo loading operations.

CM Technologies' Sales Director Uwe Krüger cites other examples where ships' pumps appeared to be in sound condition, but were in fact close to being written off.

"During the physical inspections of three pumps aboard a 58,000dwt containership, initial checks indicated acceptable values for balance and shaft alignment, but a second test using our Vibration Meter Marine immediately alerted the crew to a bearing close to seizure," he says.

The bearings on all three cargo pumps were found to have the same potentially catastrophic pitting damage, requiring costly overhaul.

"Ships' fire, freshwater, cargo, sewage and ballast water pumps are critical but often overlooked pieces of machinery," says Krüger. "Yet, despite the importance of the humble pump to ship operations, rotating machinery is still often only monitored and serviced on fixed maintenance schedules. Pump failure can place the can place ship, cargo and crew at risk."

CMT recommends that regular vibration analysis should start at system commissioning and continue throughout the operational life of the vessel. An on-going monitoring strategy is crucial to maintaining the service life of rotating equipment, troubleshooting problems, and preventing failures, and subsequent costs," he said.

CMT's Managing Director Matthias Winkler furthers: "A replacement bearing can cost as little as US$20. But finding out you needed one after the motor has burnt out could easily cost thousands of dollars to put right. And Murphy's Law dictates that this is likely to happen in a Port Said or somewhere while the next available motor can be found in Rotterdam or Singapore, so you can add significant logistics and agent costs on top of that."

AN ON-GOING MONITORING STRATEGY IS CRUCIAL TO MAINTAINING THE SERVICE LIFE OF ROTATING EQUIPMENT, TROUBLESHOOTING PROBLEMS, AND PREVENTING FAILURES, AND SUBSEQUENT COSTS

Columbia Shipmanagement and Hamburg based shipping group RHL Reederei Hamburger Lloyd are just two shipping companies that have been using CMT´s Vibration Meter Marine since the product was unveiled in 2015.

"These ship managers wanted a monitoring system capable of immediate analysis of existing problems without requiring the user to have any special knowledge, explains Winkler. "Regular use of the system has alerted crews to bearing defects before breakdown, averting costly damages. The technology has already justified the investment."

Vibration analysis provides insights into the most common cause of machinery damage and reduced service life. Bearing damage is particularly prevalent, caused by shaft misalignment, insufficient or incorrect lubrication and general wear and tear. Pump health can be easily assessed by analysing vibration.

"Crews of seagoing vessels are under constant stress, and crew changes occur at fixed intervals, so vibration monitoring devices need to be easy to use with measurement readings that are simple to understand by crew members with limited technical knowledge.

"Our Vibration Meter Marine is a powerful, expert system that provides on-the-spot usable results without the need to send information to shore for evaluation. Even beginners can understand what the readings are telling them," says Winkler.

Alongside a range of vibration meters, monitors, software and analytical tools, the CMT´s Vibration Meter Marine has been specifically designed for the harsh marine environment. The hand-held device, acceleration sensor, software, and accessories are delivered in a small,

rugged case designed for easy storage in between usage.

The meter also includes a mode to monitor the lubricating performance of greased, water, or oil lubricated bearings in pumps and rotating machinery. As an option, data can be stored for trend analysis using the diagnostic software.

"Our goal is to provide crews and superintendents with a practical solution that will enable them to detect pump problems early and shift from fixed inspection schedules to more effective condition-based protocols. Vibration analysis does need to be part of the regular machinery checks crews make on their rounds."

HYBRID VESSEL

The hybrid police boat *WS1 Bürgermeister Brauer* was officially welcomed in the Port of Hamburg in December after a construction period of almost two years at the Estonian shipyard Baltic Workboats. The boat was transferred by sea to Germany and will start its service with the Hamburg water police this year.

In the presence of the Senator for Economics and Labour, Dr Melanie Leonhard, the 29.4m-long police boat with environmentally friendly plug-in hybrid drive docked at the Überseebrücke. Also on board were Jens Meier, CEO of the Hamburg Port Authority, Karsten Schönewald, CEO of the Hamburg Fleet, and Olaf Hagenloch, Deputy Head of the Hamburg Water Police.

The vessel has powerful 2 x 500kW electric motors, which enable a minimum of two hours of travel at seven knots on electric power alone.

The new WS1 marks the start of the renewal of the Hamburg police boat fleet. The Port of Hamburg is actively pursuing a transition towards greater climate neutrality with the aim of becoming climate-neutral by 2040. The promotion of sustainable technologies and energy sources plays a central role in this.

Hamburg's Senator for Economic Affairs, Dr Melanie Leonhard, says: "We are reducing emissions by using modern technologies – the new ships in the Hamburg fleet are protecting the climate by using advanced technology in the Port of Hamburg. This brings us one step closer to achieving our climate targets and reduces our dependence on fossil fuels."

Karsten Schönewald, CEO of Flotte Hamburg adds: "With the introduction of the first hybrid police boat in the Port of Hamburg, we are taking an important step towards a sustainable future for watercraft. We are proud to equip the water police with low-emission propulsion technologies and thus actively contribute to reducing emissions in our city.'

> "We are taking an important step towards a sustainable future for watercraft. We are proud to equip the water police with low-emission propulsion technologies

CRANE INVESTMENT

CTB, operated by Hamburger Hafen und Logistik received two new container gantry cranes recently destined for berths 1 and 2 in the port of Waltershof.

The new cranes arrived in the Port of Hamburg in November 2024, on board the vessel Zhen Hua 27. Final commissioning of the cranes is scheduled for early this year.

Ingo Witte, Managing Director of CTB, comments: "The deployment of the new container gantry cranes marks another decisive milestone in the comprehensive modernisation of the Burchardkai terminal. Our goal is clear: we want to make container handling at CTB more efficient, sustainable and future-proof. Thanks to their size, these cranes offer our customers maximum flexibility when handling the largest container ships."

CTB's new container gantry cranes are among the most advanced in the world, capable of handling ships of up to 24,000teu (20-foot equivalent units). Each crane is 80m high with booms that also span 80m, allowing them to cover 26 rows of containers. These cranes replace the smaller models previously used at the terminal. Since 2019, CTB has been operating similar mega-ship gantry cranes, and by 2026, three more cranes of this size will be added to ensure greater flexibility in handling ultra large container vessels (ULCVs) at Waltershof Port. After the expansion, CTB will have 18 mega-ship cranes out of a total of 26 gantry cranes.

As Germany's largest seaport terminal, Burchardkai plays a crucial role in supplying European consumers and businesses on a daily basis. The facility is undergoing a major upgrade without disrupting operations and is considered the world's largest brownfield project in the industry.

By 2026, automated guided vehicles (AGVs) will handle the transport between the quay and the automated block storage area. In addition, block storage capacity is being continuously expanded, with three new storage blocks coming online in the coming weeks. CTB is also building a new 5,000 m^2 workshop to support the maintenance and servicing of equipment and systems.

Sustainability is a key focus in the development of the terminal. The container gantry cranes, storage cranes, rail cranes and new AGVs will be powered exclusively by electricity from renewable sources. The new workshop will also be equipped with a photovoltaic system. HHLA's overall goal is to achieve climate neutrality throughout Europe by 2040.

CRIME STOPPERS

A recent report has shone a spotlight on the dynamic and evolving nature of freight crime in Italy and the steps necessary to combat the threat

TT Club, in collaboration with BSI Screen and TAPA EMEA, underscores the increasing threat to the Italian supply chain posed chiefly by organised crime and its sophisticated theft methods. The extensive report draws on the wide-reaching data resources of the three organisations.

Like many countries, Italy is seeing a rise in strategically planned cargo theft, with criminal groups employing ever-more sophisticated means to infiltrate the legitimate supply chain. The report highlights, however, that Italy is particularly attractive to thieves due to its well-known market of luxury and designer goods. Indeed, clothing, apparel and pharmaceuticals are noted as the most targeted commodities.

"Italy is not alone in experiencing concerning increases in cargo theft," comments Josh Finch, Logistics Risk Manager at TT Club. "We are seeing the same trends across the board, with major highways and industrial hubs becoming key targets for criminals. The statistics clearly highlight the key issue: cargo at rest, unsecurely parked, parked on the roadside, around these main intersections, is most at risk."

"A lack of access to safe and secure parking is a global problem, of which Italy is an acute example," comments Panayiotis Laimos, Standards and Training Support, TAPA EMEA. "At TAPA, we create standards that focus on all risks within an end-to-end supply chain risk mitigation model. We must focus on a 'goods at rest are goods at risk' strategy and combine people and technology on the best way."

The co-authors outline the increasingly sophisticated means used by criminals to access cargo, specifically the emerging use of drones as a reconnaissance tool.

"Many modern drones may operate for 30+ minutes, more than enough time to stake out a site, noting its vulnerabilities, the location of security cameras and guard stations. They are quiet, have excellent visibility and are often difficult to spot; we have even seen cases of drones entering warehouse facilities unobserved through open bay doors. In this way, thieves are increasingly able to build a profile of the goods that are stored and exactly where to find them," explains Finch.

As with all awareness reports of this nature, TT and its co-authors are keen to offer guidance on how such theft risks can be alleviated with advice. The report contains preventative measures ranging from drone-disabling technology, radio frequency jammers, secure parking technology and the crucial importance of due diligence.

"With the help of our partners, utilising a wide range of in-depth data resources, TT is committed to lifting the lid on international cargo crime to ensure the industry is better equipped to mitigate both large-scale and attritional cargo theft losses," concludes Finch.

For full details of the report, visit: ttclub.com

EVENTS 2025

SEA ASIA
25-27 MARCH 2025
Marina Bay Sands, Singapore
www.sea-asia.com

CMA SHIPPING
1-3 APRIL 2025
Stamford
www.cmashippingevent.com

ARGUS EUROPE CARBON
12-14 MAY 2025
Nice
www.argusmedia.com/en/events/conferences/europe-carbon-conference

BREAKBULK EUROPE
13-15 MAY 2025
Rotterdam Ahoy
europe.breakbulk.com

NOR-SHIPPING 2025
2-6 JUNE 2025
NOVA Spektrum, Oslo
nor-shipping.com

TOC EUROPE
17-19 JUNE 2025
Rotterdam Ahoy
www.tocevents-europe.com

LONDON INTERNATIONAL SHIPPING WEEK
15-19 SEPTEMBER 2025
London, UK
lisw.com

BREAKBULK AMERICAS
15-17 OCTOBER 2025
Houston
americas.breakbulk.com

ABTO CONFERENCE
15-17 OCTOBER 2025
Destination to be announced
www.bulkterminals.org

EUROPORT 2025
4-7 NOVEMBER 2025
Rotterdam Ahoy, Rotterdam
www.europort.nl

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

Versatility in action

Redefining cargo handling – where digital precision meets auto-mation and intelligence.

www.liebherr.com

LIEBHERR

Mobile harbour cranes

Discover