BULK TERMINALS *international*

SUMMER 2020

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

TAKING CARE

What steps is the industry taking to support seafarers?

LOADED QUESTIONS

How innovative loading systems meet the challenges of the pandemic

CEREAL THRILLERS

Why grain exports went up as countries locked down

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A BRAVE NEW WORLD

BY SANDRA SPEARES

The public is beginning to recognise the sacrifices that seafarers and port workers have made to keep the supply chains flowing during the pandemic – something that companies will need to recognise if they want to hold on to their workforces

As the battle against the coronavirus continues, there have been positives as well as negatives to come out of the crisis. Setting aside who are winners and who are losers in the battle to maintain a smooth movement of goods throughout the logistics chain, as with those medical teams battling the virus in hospitals worldwide, it has highlighted the role of seafarers and port workers in keeping those goods flowing.

Hopefully coming out of this period is a better understanding of exactly what sacrifices people have to make to ensure that goods reach their destination. Perhaps seafarers and others involved in the supply chain will not continue to be as invisible to the public as they have been in the past and people who are sitting in the comfort of their own homes will consider the plight of those at sea .

As there have recently been calls for strike action among seafarers, perhaps those calls may serve to concentrate the minds of those who depend on them to deliver a multiplicity of goods around the world that seafarers need backup.

There have been a number of fund-raising initiatives in the industry to provide money to support vulnerable seafarers who may be stranded many miles from loved ones. Some of these we mention in this edition and we must also pay tribute to the amazing work done by all the seafaring charities, which very often end up providing much of the support in critical situations.

Recent surveys give a clear indication of the price seafarers and others are paying to ensure that goods keep moving and it is clear from the representations made by companies and organisations like the United Nations and the International Maritime Organization (IMO) that there needs to continue to be work done by all participants to support the industry's key workers.

Tanker owner Euronav is not the only company to have protested at a lack-lustre approach by countries to the issue of stranded seafarers, despite a protocol from the IMO outlining procedures for safe crew changes in port. Another recent survey warns businesses that, as lockdown measures begin to ease, it is not a question of business as usual. Employees will be looking for increased care from their employers, as well as a more inclusive approach when it comes to workplace culture and diversity issues.

These issues are ones that need to be tackled urgently if companies are not to see their workforces vote with their feet.

Additional trends coming out of the pandemic environment, with its lack of face-to-face contacts and social distancing, include digitalisation, an increasing concentration on remote, electronic approaches to business, use of electronic documents and, in ports, the use of drones to complete some manual handling tasks and avoid the necessity for physical contact.

Surveys conducted remotely have been carried out, which may become increasingly the norm in the post-virus world. What impact this may have on safety remains to be seen, although use of drones to survey dangerous sites can definitely be an advantage.

Another area of concern has been cyber crime and the pandemic has added an additional layer of risk at a time when companies cannot afford to lose money through systems failures resulting from computer hacking or scams.

Unfortunately because of the current situation brought about by the Coronavirus pandemic the next ABTO Conference has been postponed until October 2021.

In the meantime, we hope you enjoy this latest edition of *Bulk Terminals International*.

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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

EVENTS: KIRSTIE SMITH
EVENTS@BULKTERMINALS.ORG

PR: PATRIK WHEATER
PR@SEABORNECOMMS.COM

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Max traction input speed	2.100 rpm
Tires arrangements	Hi flotation tires 1480x640 19.5.25
Steering motor	2 x 4kW @ 2.800rpm 380V AC
Steering motor duty cycle	S2 = 60, S3 = 70%
Max steering output torque	2 x 5.000 Nm
Steering gearbox ratio	1:276
Steering pinion/crown ratio	1:8.5
Total steering ratio	1:2366
Max steering input speed	2.000 rpm
Time for 90° steering with motor @ 2800rpm	12.6 seconds
Em parking brake	40Nm 70V DC + [illegible]
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Maximum mechanical tilting	±9°
Minimum storage temperature	-50° C
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Painting color	Black Ral 9005
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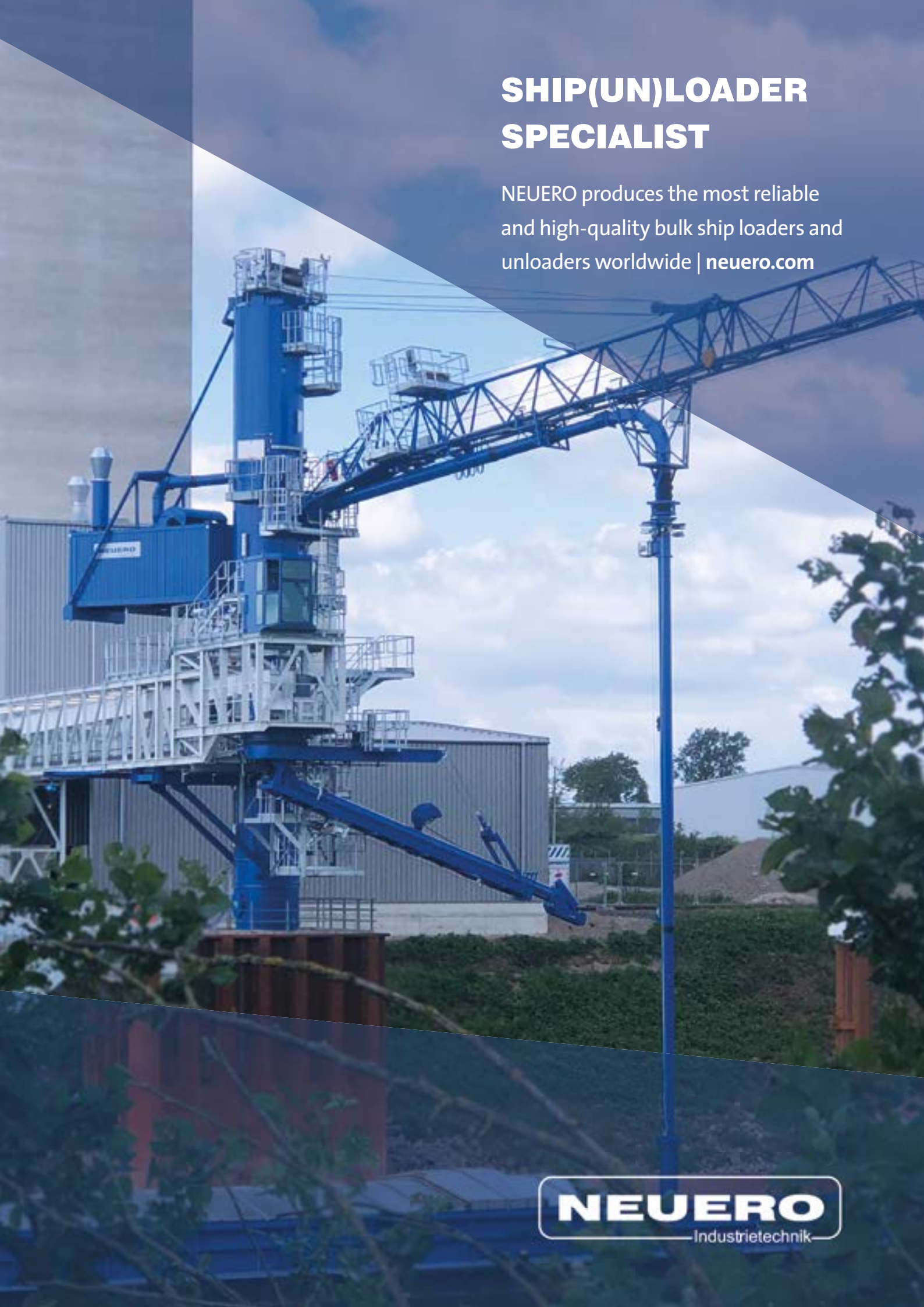

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TIME FOR A SEA CHANGE

SIMON GUTTERIDGE, CHIEF EXECUTIVE ABTO

Is the world finally waking up to the plight of seafarers?

ABTO has previously added its voice to the calls of international organisations representing all the main industry stakeholders – including the International Association of Ports and Harbors (IAPH), International Chamber of Shipping (ICS), BIMCO, INTERCARGO, International Transport Workers Federation (ITF) and other regional associations – to facilitate the early resumption of crew changes in the interests of crew health and wellbeing, as well as enabling the resumption of operations that otherwise could not take place.

The Hellenic Chamber of Shipping has warned that this may take some time to achieve, even after travel restrictions are lifted. But despite the calls, other than in a few instances (such as the crew of the bulk carrier *Genco Liberty* at the Port of Singapore being able to take advantage of the crew change protocol developed by the Singapore Crew Change Working Group), governments have singularly failed to respond to calls to lift restrictions.

Hopefully a UK government initiative will change things. The first international summit to address impact of covid-19 on crew changes was held in London. UK Transport Secretary Grant Shapps MP led the calls on the international community to come together to ensure swift repatriation, bringing together regulatory, political and business leaders from across the globe. These included IMO Secretary General Kitack Lim who said ship operations and crew wellbeing should not be compromised. "The humanitarian crisis seafarers face has implications for all of us, for the world economy and for the safety of life at sea and the environment." Anyway, it is a start with the UK, US, Saudi Arabia, UAE, Denmark, Norway and the Philippines signing an agreement to open borders for seafarers and increase repatriation flights.

For the normally "sea blind" mainstream media – certainly in most of the western world – to pick up on the issue, shows how bad the situation has become. *The Economist* magazine with a front cover line "Free the merchant seamen" in its 20-26 June edition devotes more than half a page of leader to putting the blame squarely where the blame lies with its headline "It is not covid-19 that has trapped seamen on their ships. It is official indifference." The magazine also devoted a full page of reporting, expanding on the subject.

Governments acted quickly enough to classify lorry drivers and air crew as essential workers – my neighbour here in Northern France has been driving his lorry to the UK regularly throughout the pandemic. No such luck for seamen. They are forbidden to disembark. In all but name essential workers, their actual status is close to that of indentured labourers. As Lars Robert Pederson, BIMCO's chief operation officer, said: "They are effectively imprisoned on board their ships."

Not for the first time – remember the numbers that languished in the captivity of Somali pirates – the fate of these mariners, mostly from developing countries such as India, Indonesia and the Philippines, is being overlooked.

Ship management and crewing agencies – in normal circumstances – do a great job in getting crews to and from ships, and the start and finish of their contracts. They could do so now if governments would classify seamen as essential workers, so they could travel and cross borders to and from ports and terminals.

Maybe they will now when the realisation dawns that the industry-wide agreement allowing for the emergency extensions of contacts expired on 16 June. If ships are no longer properly crewed, they become unsafe and the result is a potential lapse of insurance cover; this is, of course, not to minimise the danger that demoralised and exhausted crews represent anyway.

The cruel irony of this situation is that seamen, on board for months with no virtually no contact with anyone, are the least likely spreaders of the virus on the planet.

So, what are the prospects for terminal throughput – assuming governments and regulators get a handle on the crewing problem so that shipping can actually deal with the demand at whatever level it may settle at?

In the short term, covid-19 has certainly done huge damage to the world economy. The impact on dry bulk markets was equally devastating, affecting all sectors. Developing and advanced economies are in recession. Despite China – the main driver for the main bulk markets – returning to work, there will be weakened demand for dry bulk. Witness the collapse of the automotive industry, as well as aluminium production.

BIMCO's research predicts that demand for all commodities, including coal, iron ore and steel, will decline as a result of the generally poorer economic outlook – a reluctance to invest in "durable goods" and the likelihood that Chinese infrastructure development has levelled out for the time being. Given that the dry bulk market needs global economic growth, the outlook is bleak.

Always with the rider that predictions for the health of the market for shipowners take into account ship supply as well as cargo demand, BIMCO's chief shipping analyst, Peter Sand, recently said: "The dry bulk market depends on global economic growth and with the current prospect of declining demand in 2020, the dry bulk outlook remains lacklustre for the rest of the year."

He went on to say: "In the years following the global financial crisis, Chinese economic stimulus was the saving grace for the dry bulk market, but several factors are currently suggesting that 2020 will not unfold along the same lines. The dry bulk market is likely to recover gradually and at a slow pace alongside the global economy."

Now, I am no economist, but my gut instinct is that this may well carry over into the medium term.

For a useful update to monitor the economic impact on ports, a Port Economic Impact Barometer has been created under the umbrella of the IAPH's World Ports Sustainability Program (WPSP). This can accessed via a link on its website: **sustainableworldports.org/world-ports-covid19-information-portal.**

The barometer gathers input from ports worldwide on the evolution of vessel movements in ports, restriction measures on port entry for cargoes and crews, operational delays due to changes in port call procedures, disruptions to hinterland transport, effects on quayside capacity utilisation and warehousing and storage facilities, as well as dock labour availability.

Similarly, the same link has a click through to the WPSP *Covid-19 Guidance Document for Ports*, which is designed to help ports worldwide face the challenges by providing a menu of options based on best practices from ports worldwide.

The IAPH WPSP call to action for increased digitalisation in the post-covid-19 environment is also now being matched in practice with the publication of the *Port Community Cyber Security White Paper*, which serves as a guide to those ports now gearing up for digitalisation – again, both of these are accessible via its covid-19 information portal.

In line with many other organisations moving to virtual events, ABTO and our partners The Wolfson Centre for Bulk Solids Handling ran the "Port and Terminal Operations for Bulk Cargoes 2020" short course online – both for those who could not attend in person last March and others who were interested.

If you are interested in attending the next course, contact either myself (+33 (0)321 47 72 19 ***events@bulkterminals.org***) or Caroline Chapman (+44 (0)20 8331 8646 ***wolfson-enquiries@gre.ac.uk***). The other short courses that the Wolfson Centre runs will also be offered in the same way for the foreseeable future. Those courses concerned with pneumatic conveying will be of interest to many in the bulk terminals community.

ABTO Members are entitled to a discount to all courses offered by or in collaboration with The Wolfson Centre.

Two other organisations ABTO enjoys a close relationship with are ICHCA International and the Materials Handling Engineers Association (MHEA). Captain Richard Brough OBE, head of ICHCA International, is a regular speaker and session chairman at our annual Bulk Terminals conference. ICHCA postponed its Spring Meeting – we will keep you posted via our website and newsletter when it is rescheduled. The MHEA's Bulkex event has also been rescheduled to April 2021.

Unfortunately we have also had to postpone our annual Bulk Terminals conference in Riga. We were all looking forward to going to Latvia this coming October and grateful to the Freeport of Riga Authority for their offer of hospitality as our host port.

While Latvia itself is one of the safer parts of the world and travel restrictions internationally are being progressively eased, the danger of a second wave of covid-19 is likely to lead to their re-imposition. The majority of comments I have received so far from past conference attendees and key speakers indicate a strong preference for postponement until 2021. So, the next full conference will almost certainly be in October 2021, with the final dates to be confirmed. I am working on the idea of a couple of short webinars this October dealing with topical updates to the current situation as they affect bulk terminals.

Riga is the biggest port for handling dry bulk cargo on the East shore of the Baltic Sea, in normal times handling roughly a quarter of the dry bulk cargo in this region. The main types of commodities the terminals handle include coal, fertilizers, woodchips, ore and grain. The current handling capacity of the Port regarding dry bulk cargo is upwards of 25 million tonnes per year.

Due to harbour deepening projects and the construction of the deep water berths, the size of vessels carrying dry bulk cargo which can be handled at the Port of Riga has been increasing. Riga can also attract new types of cargo resulting in the continuous increase

of the volume of dry bulk cargoes at the Port. In order to minimise any possible harm to the environment, all the terminals for dry bulk cargo are equipped with up-to-date machinery and equipment for handling cargo. The process of handling of cargo complies with the environmental standards set by the EU and is subject to the environment management and monitoring system.

Our Bulk Terminals conference in Riga 2021 will focus on the issues that bulk terminal operators tell us they most want to understand and find the solutions for, namely: improving operations; keeping abreast of increasing environmental regulation; improving safety as well as security and how technology can assist them to achieve these objectives.

Feedback from previous events has shown a high level of interest in market analysis and development opportunities. Indeed, we traditionally start our conference with a session devoted to these topics. Autonomous operations and digitalisation have been raised as subjects of interest. Given the importance to Latvian ports of transit cargoes, rail and transport connectivity will also be covered. Naturally, the impact of covid-19 will be discussed.

Our sponsors help to make the Bulk Terminals conference possible. I am very grateful to igus®, which has supported us from the outset. It has come up with an innovative way to overcome the cancellation of the Hanover Trade Show: a virtual stand at igus® (**see exhibition.igus.co.uk**). Do take a look!

DR ROB BERRY (1971-2020)

It is with great sadness that we report the death of our much-loved and respected colleague and friend Dr Rob Berry after a long battle with cancer. He will be remembered by the bulk materials handling industry for his great expertise in powder flowability and by his friends and colleagues for his kindness, patience and humour.

Rob worked as a consultant and researcher at the University of Greenwich, in the Wolfson Centre for Bulk Solids Handling Technology, after graduating from the Wolfson Centre as a Doctor of Philosophy in 2001. His studies centred around his passion of powder flowability and he was involved in numerous cutting-edge research projects, which culminated in his taking a leading role in three milestone research projects undertaken at the Centre:

- **2003–06** Development of the Brookfield Powder Flowability Tester (PFT), now in use by over 400 companies around the world.
- **2010–13** Development of the Virtual Powder Blending Laboratory Toolkit, used by manufacturers of powder formulations to ensure their products flow efficiently without hold up or stoppage.
- **2017–current** Virtual Formulation Laboratory for Prediction and Optimisation of the Manufacturability of Advanced Solids Based Formulations, which will extend the capability of powder formulators to make sure new formulations process efficiently through blending, handling and tableting.

During his time at the Wolfson Centre, Rob supervised 15 PhD students through to graduation, presented at hundreds of conferences and seminars around the world, and taught on the series of Wolfson Centre short courses and within the University Engineering programmes. He won an array of awards for his work, most notably the IMechE prize for Innovation in Bulk Materials Handling, in 2012.

He also made major contributions to large numbers of plant development projects. His work was embodied in the Drax Ecostore £200m project for coal-to-biomass conversion and he made a major contribution to the Lynemouth coal-to biomass conversion, as well as a myriad of less visible projects.

Rob first came to our attention when, as an undergraduate project student in our labs, he managed to initiate a pipeline blow-out that covered the whole facility in plastic pellets! From this inauspicious start, we saw Rob grow over three decades with us to be a dominant member of our profession. His legacy of technological advancement will live on long after his passing, in many plant design and troubleshooting projects that are yet to be conceived, and also in the skills of his ex-PhD students now working in the field.

In his private life, his passion for vintage cars and making working models took up his time, when he wasn't spending it with his wife and children.

Rob was a much loved, as well as highly respected, member of the Wolfson family and he will be greatly missed by us all.

Prepared by Professor Mike Bradley
The Wolfson Centre for Bulk Solids Handling Technology
The University of Greenwich

WORLD NEWS ROUND-UP

There have been many interventions in recent months as the world addresses issues arising from the global pandemic and as government, companies and individuals seek to adhere to best practice

The United Nations maritime and trade entities, UNCTAD, and the International Maritime Organization made an early intervention by stressing the importance of maritime transport to the world economy and the need to keep ports open, ships moving and crews making changeovers.

Crew changes cannot be postponed indefinitely and access to medical care for sick or injured crew and to medical prescriptions must also be provided. It is estimated that starting in mid-June 2020, as many as 300,000 seafarers a month will require international flights to enable ships' crew changeover – about half will travel home by aircraft for repatriation while the other half will join ships.

IMO and UNCTAD also reaffirmed the urgent need for "key worker" designation for seafarers, marine personnel, fishing vessel personnel, offshore energy sector personnel and service personnel at ports. Governments and relevant national and local authorities must recognise that these workers provide essential services, regardless of their nationality and should exempt them from travel restrictions when in their jurisdiction.

Efforts should be made to facilitate electronic means for ship-shore, administrative and commercial interactions. There should be effective sharing of pre-arrival information and other covid-related reporting requirements for ships, as well as provision of adequate equipment and resources to customs and border control stations in ports, the two organisations said.

Crew changeovers are essential for the continuity of shipping in a safe and sustainable manner. IMO Secretary-General Kitack Lim has endorsed a series of protocols developed by a broad cross-section of global maritime industry associations to ensure that ship crew changes can take place safely during the pandemic.

PASTURES NEW

Shipping industry employees are putting diversity and inclusion at the top of the agenda, as well as workplace support for training and development and they are increasingly prepared to look go elsewhere for jobs, according to the results of a major annual survey.

The 11th Annual Maritime Employee Survey was conducted earlier this year by Halcyon Recruitment, Diversity Study Group and Coracle Maritime.

It found that over half of participants (52%) have been aware of discrimination. The most commonly cited areas of concern over discrimination were nationality (60%), followed by age (41%), gender (37%) and ethnicity (32%).

Only 60% of employees cite their company culture as being one where they feel supported in the workplace and an overwhelming 90% would like their employer to do more to create a workplace where everyone feels valued and able to contribute.

Some 74% of participants would like to have a defined development plan to help understand what they need to do in order to do their job better. Vessel operators rank highest (81%), perhaps a contributing factor as to why so many in this segment (60%) are actively looking for new employment.

Less than half of respondents (48%) have had at least one meaningful conversation about their personal development with their line manager in the six months preceding survey completion. The survey also revealed that 55% of employees are actively seeking a new role and a further 39% are open to offers. This translates into just 6% of employees being committed to their current role.

Some 76% of respondents are motivated to take part in training to enhance the skills needed to develop their career, but only 45% of respondents work for companies that provide external training and education opportunities, and only 62% are given internal training and education opportunities.

Commenting on the results of the survey, Heidi Heseltine, chief executive of Halcyon Recruitment, says: "There is a lot of speculation about the long-term impact of the pandemic on our workplaces and working lives, but it is already clear that employees are looking for more than a return to 'business as usual'. They are also increasingly willing to move to find it. This should be a clear incentive for employers to consider what changes they can make to support their teams."

DIGITALISATION CALL

The International Association of Ports and Harbors, along with a number of other industry bodies, has launched a call to action to promote the cause of digitalisation.

The new initiative highlights some of the disparities between ports as far as digitalisation is concerned and says that while some ports have embraced digitalisation and transformed themselves into "smart" ports, others are lagging behind and still rely to a large extent on paper transactions and human interaction.

The associations say that as countries begin to emerge from lockdown the issue of digitalisation needs to be pushed forward at a faster pace so that all ports can offer a degree of digital data exchange and communication.

The issues that need to be addressed include:

- Finding ways of using existing IMO's Facilitation Convention requirements to support electronic transmissions for all port community-related transactions, making the transition to full-fledged single window systems.
- Harmonising data standards to create additional e-business solutions, including sharing data to optimise port calls as well to effectively deploy resources by logistics providers to handle and clear cargo handling.
- Introducing port community systems and secure data exchange platforms in IMO member state ports.
- Reviewing IMO guidance on maritime cyber risk management regarding cyber risks in ports and developing additional guidance where needed.
- Raising awareness and promoting best practice as to how ports apply emerging technologies.
- Increasing health security in port environments for those on board and on shore by applying innovation and technological solutions.
- Developing a practical roadmap that facilitates a digital port environment where port community service providers and users can securely share data.
- Establishing a coalition of willing stakeholders to improve transparency of the supply chain, starting with introduction of the electronic bill of lading.
- Supporting smaller, less developed, and under-staffed port communities with technical facilities and personnel training.

SEAFARERS SEEK SUPPORT

The latest Seafarers Happiness Index report, published in May by the Mission to Seafarers, has revealed that seafarer happiness is lower, with clear concerns about current safety and welfare provision for those serving at sea. Seafarers are urgently calling for improved connectivity between shore and sea and the need for greater support across the industry.

The index was undertaken in association with the Shipowners' Club and Wallem Group, and the latest report allows seafarers to share their experiences of life at sea during the pandemic, with overall seafarer happiness dropping to 6.30 in the first quarter of 2020, down from 6.39 since in the fourth quarter of 2019.

As the pandemic has progressed, all the seafarers 'charities have issued warnings about the dangers of seafarers self-harming and instances of this have increased.

Survey responses regarding shore leave show that seafarers are not able to benefit from welfare facilities ashore, which in turn hugely impacts their mental wellbeing.

Even when shore leave is possible, the cost of shore passes, access to transport and health fears can impact the decision to go ashore. Additionally, given ships are reduced to minimum crewing levels, taking shore leave requires cover, forming further issues regarding logistics.

Many seafarers are prioritising completing their contract and getting home rather than getting ashore when in port, further emphasising the need to ensure vessels are suitable places to spend extended time.

There are reports of social conflicts rising onboard when it comes to the ability to enjoy downtime and the spaces and provisions for relaxation, particularly given the diverse nationalities on board.

On board camaraderie is tested when seafarers feel under stress and existing tensions are exacerbated, particularly as more seafarers worry about family at home, and feel disconnected from loved ones. This stress makes it harder to interact and puts further strain on relationships with fellow crew members.

Additionally, this quarter's results indicated that crews are experiencing growing workloads, particularly exacerbated as many are having to stay onboard for longer than their normal contracts owing to Covid-19 restrictions on movement. There is a sense of detachment between ship and shore, with numerous criticisms about the way in which work and expectations are managed and the need to keep vessels to "hospital standards" of hygiene, with the relentless struggle to keep vessels virus-free.

The combination of increased workloads, extended contracts and increased isolation leaves the majority of seafarers feeling stressed, anxious and exhausted.

This risks undermining the quality of their work and safety standards. Seafarers need better connectivity, including internet access as a basic necessity to combat isolation and to improve the connection between sea and shore to ensure seafarers feel protected by the decisions made on shore.

Seafarers also voiced anxiety about shore staff boarding vessels given the risk of infection.

The industry has a responsibility to ensure seafarers are and feel protected and safe within the workplace, the report concludes.

BLOCKCHAIN BENEFIT

Ship management technology solutions provider CargoSmart has announced that it has conducted a pilot project with COSCO, Shanghai International Port Group, and Tesla for a new application to transform the cargo release process.

It is among the very first pilot projects with an ocean carrier conducting a real-time exchange of shipment data with a terminal operator through blockchain.

The pilot not only demonstrated the benefits of having a single, trusted source of truth in cargo documentation, but also the efficiency gains for industry participants.

The application will be further developed for participants of the Global Shipping Business Network (GSBN) blockchain consortium, once it is officially established.

The pilot project was designed to minimise consignee and shipping agent verification steps with their ocean carriers in order to speed up the release of sea waybills. As a result, truckers are able to pick up their cargo at the terminal faster, helping shippers meet delivery windows and ensure that service quality and customer commitments are met.

Henry Huang, SIPG executive deputy general, says: "The pilot is a key component of our journey towards paperless, trusted, and seamless trade processes at the Port of Shanghai, and it demonstrates the benefits for supply chain stakeholders around the world. We look forward to extending the collaboration with more supply chain stakeholders."

Wu Yu, general manager of the business process and system division of COSCO says: "The pilot with SIPG and CargoSmart showcased significant efficiency gains not only in the cargo release process, but also for downstream supply chain planning by presenting a single source of truth for documentation for all involved parties."

CYBER ATTACKS SPIKE

The coronavirus pandemic is leaving the maritime and offshore energy sectors vulnerable to cyber-attack, with Israeli security firm Naval Dome citing a massive 400% increase in attempted hacks since February 2020.

While an increase in malware, ransomware and phishing emails exploiting the covid-19 crisis is the primary reason behind the spike, Naval Dome adds that travel restrictions, social distancing measures and economic recession are beginning to bite into a company's ability to sufficiently protect itself.

Naval Dome CEO Itai Sela says: "Covid-19 social restrictions and border closures have forced OEMs, technicians,and vendors to connect standalone systems to the internet in order to service them."

The global crisis and social distancing measures are preventing OEM technicians flying out to ships and rigs to upgrade and service critical OT systems, resulting in operators circumventing established security protocols, leaving them open to attack.

"As budgets are cut and in the absence of service engineers, we are seeing ship and offshore rig staff connecting their OT systems to shoreside networks, at the behest of OEMs, for brief periods of time to carry out diagnostics and upload software updates and patches themselves," says Naval Dome.

"This means that their IT and OT systems are no longer segregated and

individual endpoints, critical systems and components may be susceptible. Some of these are legacy systems which have no security update patches and are even more susceptible to cyber attack.

"The increase in OEM personnel working remotely on home networks and personal PCs, which are not well protected, adds to the problem."

STOWAWAY SURGE RISK

While more stringent border crossing checks have been imposed due to the covid-19 crisis, the stowaway risk to operators is not diminished and as the restrictions on movement begin to ease, migration activity could escalate, insurer TT Club warns.

According to a recent report from the European Migrant Smuggling Centre, part of Europol, migrant smugglers have been increasingly using small boats to cross river borders and the English Channel.

More significantly for the freight industry, the report goes on to say there has also been a shift "to hiding of irregular migrants in concealments in freight vehicles and cargo trains that still move across the borders" during the pandemic.

"Our first consideration, of course, must be with the well-being of the migrants themselves, who are often victims of criminal activities and whose lives are often at risk," says TT Club's managing director of loss prevention Mike Yarwood.

"In terms of the liabilities that transport operators are exposed to, however, TT Club is warning of potential physical damage to cargoes, additional freight costs, vehicle and equipment detention, fines, penalties and reputational damage."

TT Club emphasises that all stakeholders who regularly undertake cross border freight movements must be vigilant. Close consideration should be given to the preventative guidance that governmental authorities produce.

TT Club has meanwhile collaborated with leading global provider of supply chain intelligence BSI Supply Chain Services and Solutions to publish a StopLoss briefing entitled *Clandestine Migration*.

CLASS ACTION

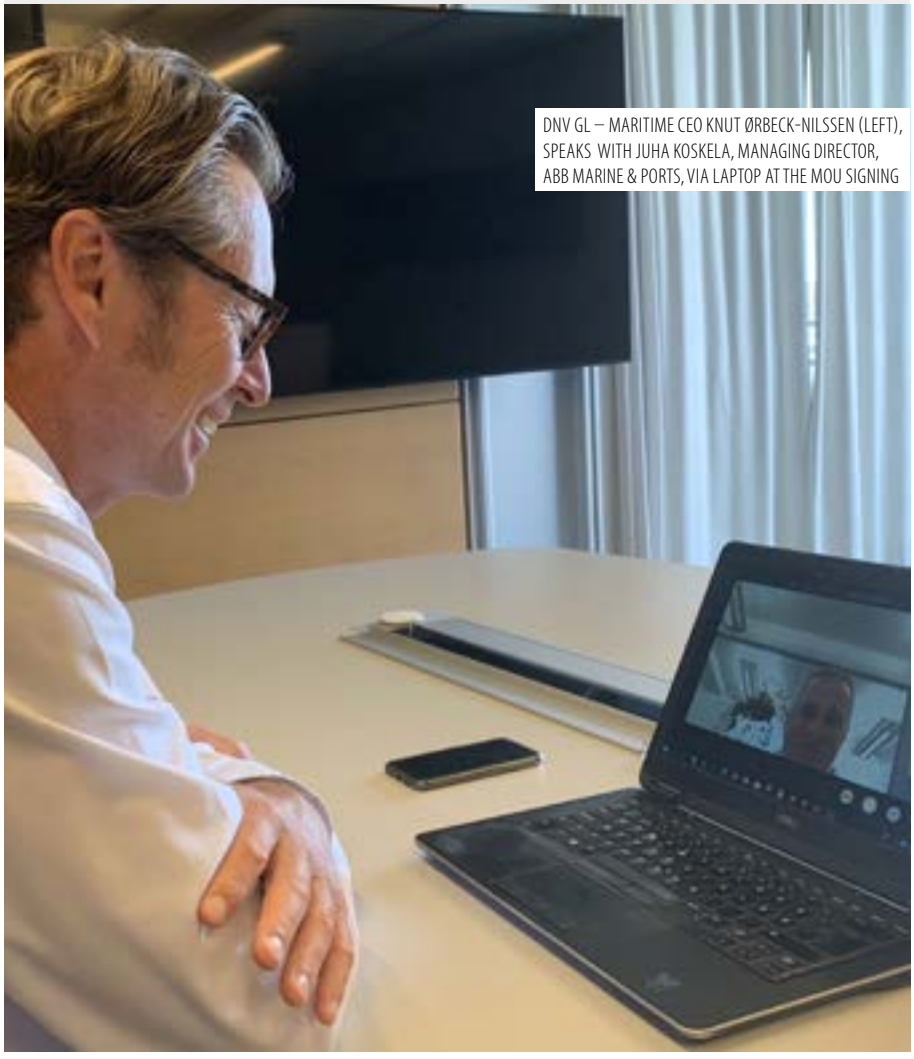
Another digitalisation initiative has been announced by class society DNV GL and technology leader ABB, which have signed a new Memorandum of Understanding (MOU) to accelerate digitalisation in the maritime industry.

ABB and DNV GL will work together on a digitalisation roadmap, to examine how the maritime industry can benefit from the greater availability of data, interconnectivity of systems, data analysis and new technologies such as AI and machine learning.

"The crisis has the potential to trigger a lot of innovation and new ideas throughout the maritime world – leading to a renaissance for the whole industry," says Knut Ørbeck-Nilssen, chief executive of DNV GL – Maritime. At DNV GL, digitalisation has driven many of the new services and processes we have been working on to help our customers and improve our service delivery. Working together with ABB on this trend can help us explore its potential across the whole industry."

"Today, electric, digital and connected technologies are driving innovation in the marine industry at an unprecedented pace," says Juha Koskela, managing director, ABB Marine & Ports.

"Collaborating with DNV GL on the next steps in shipping's digital journey, we look forward to opening up new opportunities for customers and empowering them to achieve increased gains in safety, efficiency and sustainability through digitalisation."



DNV GL – MARITIME CEO KNUT ØRBECK-NILSSEN (LEFT), SPEAKS WITH JUHA KOSKELA, MANAGING DIRECTOR, ABB MARINE & PORTS, VIA LAPTOP AT THE MOU SIGNING

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MACHINE, REPAIR AND SERVICES

COMPANY NEWS

Established in 1977, MRS Greifer GmbH is a leading engineering company providing design, manufacture, supply and after sales services for grab buckets up to 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

MRS Greifer GmbH
Talweg 15 - 17
74921 Helmstadt
www.mrs-greifer.de
export@mrs-greifer.de
Phone: +49 7263 9129-15
Fax: +49 7263 9129-12

DIVERSE APPROACH

Equipment that can be used for multiple purposes is increasingly important as companies review their expenditure on new and expensive equipment to improve productivity

Broekman Logistics ordered its first eco-efficient Konecranes Gottwald Model 4 Mobile Harbour Crane late last year for operations at its multi-purpose terminal in Rotterdam and this is already in operation.

Broekman's multi-purpose Distriport Terminal, situated in the Botlek area, specialises in breakbulk and is also equipped for container handling. To handle bigger volumes, it decided the Konecranes Gottwald mobile harbour crane was the best option.

"We want our terminal to develop and grow continuously, along with the ambitions of our customers," says Rob van Dijk, director of operations at Broekman Logistics. "To prepare for the future and build new business, we are willing to invest in projects, expansions and new equipment. We chose Konecranes because we were looking for a high-performance crane that would allow us to handle bigger volumes."

The crane is a Model 4 in the G HMK 4406 variant. It is compact, electrically driven and can handle a maximum load of 100 tons with a working radius up to 46m. It can be used on ships up to Panamax class. LED lights provide strong illumination of the crane's working area. Smart crane features, including a

hoisting height assistant and a land-side lowering function, make the job of the operator easier and safer. Web reporting provides relevant crane data to increase both performance and serviceability, the company says.

OFFSHORE APPROACH

Offshore transfers are another prospect for cargo handling. One example is Magdragon II, which operates close to Cape Preston in the Pilbara Region of West Australia with two 3000B series E-Cranes. These are designed to unload magnetite from ocean-going barges into hoppers, which feed a conveyor system and shiploader. The transfer station mainly loads Mini Cape vessels destined for China.

Magdragon II handled close to 1.5m tons of magnetite iron ore in March 2020 – a major achievement considering the challenging working conditions during the covid-19 pandemic.

SMART SYSTEM

Demag's DCBS chain hoist is equipped with a smart control system, which makes assembly and, above all, joining processes simpler and safer, the company says. In its basic function, the DCBS is a variable-speed chain hoist based on the proven DCS range. The operator actuates the D-Grip Servo control handle and the load, with a maximum weight of 160kg, is raised or lowered by an electric motor.

The DCBS has an integrated balancer function, which has been adopted from the Demag D-BE electric balancer. It enables loads to be guided without the need to actuate the controller. The operator simply moves the load to the desired height with little force and can position it much more precisely with both hands because he does not have to take the "detour" via the control panel. This makes the work much easier, not only when exact positioning is required.

By actuating a switch, or automatically depending on the selected control mode, the DCBS unit switches between the two "grip control" and "load control" operating modes for intuitive load control. The hoist is equipped with high-performance sensors to meet this requirement.

"The manual force exerted by the operator is detected in the grip control system by a pressure sensor and is used to control the lifting motion. This eliminates the need for the operator to press any buttons to control the hoist," the company says.

An integrated load sensor detects the weight of a load and possible weight fluctuations and determines the desired direction of movement and speed from these values in load control mode. This allows the operator to move the load to the desired position using both hands.

In assembly mode, which is particularly suitable for horizontally

joining components, any possible uncontrolled load movements are suppressed and converted into a gentle swaying motion. This then enables components to be joined precisely. It also avoids possible damage due to collisions between the parts and thus also increases handling rates during assembly.

The fourth DCBS operating mode is load pick-up mode. This function is useful, for example, when changing tools or removing parts from jigs or test benches. The balancer can be adjusted so that it only lifts until a preset force is reached. It thus enables load handling attachments to be lifted and pre-tensioned – with the result that the load can be removed from a jig, for example, without dropping or being suddenly pulled upwards. At the same time, the machine or jig is protected against excessive forces.

All operating modes are linked to additional protection and safety functions, such as adjustable load or speed limits, and make working procedures even safer.

Combined with the Demag KBK light crane system, DCBS creates mobility for horizontal load transport. It can travel on KBK profile section rails, for example, on single-girder suspension cranes or in system suspension monorails and slewing jib cranes.

Besides its innovative direct load control, DCBS offers a number of design features that simplify its operation, improve safety and reduce service requirements. These include, for example, its slipping clutch with automatic cut-out based on speed monitoring, which prevents permanent slipping in the event of overload. Because the brake is arranged in front of the slipping clutch in the load-bearing arrangement, any dropping of the load is effectively prevented and, in the event of a malfunction, the brake is applied automatically.

SPARROWS SWOOPS IN

Sparrows Group has completed its first project for Arab Shipbuilding & Repair Yard (ASRY) delivering crane condition evaluation services at the multi-service facility in Bahrain.

As part of ASRY's extensive modernisation programme, Sparrows carried out non-intrusive inspection of its 16 rail, crawler and floating cranes throughout April and May this year.

The scope of work involved detailed visual inspection of structural components, wire ropes and hook blocks, as well as functional checks on safety limits and calibrations for the rated capacity indicator. Sparrows will now provide ASRY with a report of recommendations.

ASRY was established in 1977 and is one of the Arabian Gulf's leading maritime repair and fabrication facility. The facility includes a drydock, two floating docks, 15 repair berths and twin slipways alongside a fabrication area, workshop and service centres.

Sparrows CEO Stewart Mitchell says: "ASRY is a well-known and respected name in the Middle East so we're delighted to have worked on this project.

"Diversification into new industries is a key part of our growth strategy and this work demonstrates how we can seamlessly transfer our expertise and capability to the marine and industrial sectors. The Middle East is an important region for us and having a local presence in the Kingdom of Saudi Arabia enabled us to support ASRY in Bahrain even during these challenging conditions."

Sparrows has been active in the Middle East for more than 25 years and in 2015 the company established a local presence in the Kingdom of Saudi Arabia. It was granted a commercial registration to operate last year and recently became the first company in the Kingdom to be awarded Approved Service Provider Recognition for crane maintenance and overhaul by the American Bureau of Shipping (ABS).

KEEPING MOBILE

Rotterdam stevedore company RHB Stevedoring & Warehousing has bought a second mobile shore crane for loading and unloading heavy lift, offshore and project cargo: the Liebherr LHM 550.

With the LHM 550 and the LHM 600, RHB has of the two largest mobile shore cranes in Rotterdam. The cranes have a lift capacity of 144 and 208 tonnes and an impressive reach of 54 and 58 metres respectively. Additionally, they are fast, flexible and accurate, ensuring that times for loading and unloading sea vessels are reduced considerably.

When used in tandem, the cranes have a combined lift capacity of 216 tonnes, ideal for handling long cargo like windmill towers, windmill blades and rails for railroads) fast and professionally. The mobile Liebherr LHM 550 and LHM 600 can be deployed at every location on the 730m RHB quay. The enhanced crane capacity contributes to the increasing project cargo handling in the port of Rotterdam.

Project, offshore and heavy cargo specialist RHB specialises in handling and warehousing heavy lift, offshore and project cargo, such as transformers, turbines, windmills, windmill blades, tunnel boring machines, offshore cargo, and dismantled cranes and engines. RHB has its own quay of 730m and has 15,000m^2 of warehouse space and 30,000m^2 of open storage space.

LIEBHERR LHM 550 © LIEBHERR

DRIVING FORCE

COMPANY NEWS

Founded in 1971, Italy-based Borghi Assali has become well known for its expertise in the bulk market, producing equipment and moulds. Its state-of-the-art-technical department researches, develops and produces all kinds of innovative drive and steering systems. Through an international research project in 1992, the company started developing steering axles for forklifts and airport tractors, which it now exports across the world. Thanks to its broad offering, the company can easily satisfy the many different requirements of its customers, both in Europe and internationally.

The company's technical focus is on customising equipment and using a system of electric and hydraulic traction. It can produce electric traction and steering systems in smaller, more compact sizes that can move slowly (0.30km/h) in any environment and with any load, without the problems. Customers include Mitsubishi Caterpillar, Yale (NMHG Craigavon Irlanda), Rico, Orion Lifts, Rocla, Nexen, Linde, Cesab (Toyota M.H.), Cargotec (Moffet), ORI ALTINI, Italgru, Terranova Technologies, Bedeschi, Telestack, RBL-REI, Van Aalst, Technobalt, Unibelt, Ascom, Colmar, Plan, Gipo, Glama, Isoloader, BMC Cranes, Manitex and Aviogei e Ormig.

With the support of Italy's Emilia Romagna region, Borghi Assali has launched an industrial investment project that aims to sustain the company's growth strategy by producing innovative and high-performance axles for the premium segment of the market. The opportunity to gain multinational companies as costumers is crucial and it is what this strategy offers.

MINING INDUSTRY

Borghi Assali designs and produces traction and steering systems, both electric and hydraulic, for self-propelled machinery on the ground and for the railways The structural strength of Borghi Assali's drive wheels in heavy-duty work is well known and has led to a strong presence in the mining industry. Where reliability and endurance under adverse conditions are essential, Borghi Assali's products are a guarantee of satisfaction. Moreover, if the customer requests electric motors, Borghi Assali can offer AC motors in high tension (380V-400V), as necessary in mining machines.

BELT CONVEYORS

Belt conveyors in mines and quarries require some particular characteristics:

- Considerable protection from adverse weather conditions and from dust, mud and dirt in general
- The capacity to endure hard work cycles, even 24/7
- The ability to work in temperatures over 50°C and in intense cold, down to -56°C

These characteristics make these drive wheels the best option to move – both with hydraulic and electric propulsion – mining machines used in even the most remote areas of the planet.

STACKERS

Stackers used in mines and in quarries need the same features as conveyors, but also need assured traction and steering even on unstable pavements, and in snow or mud. Borghi's drive wheels are the best option.

CRUSHERS/MOBILE HOPPERS

With characteristics the same as belt conveyors and stackers, it's important to notice that mobile hoppers have only four support points on the ground. In this case, Borghi's drive wheels (that can charge up to 120t of load capacity) are the right solution for every kind of mobile hoppers.

CASE STUDIES

Belt conveyors

One company collaborated with Borghi Assali to implement traction systems for some of the belt conveyors it was using in Africa. Borghi Assali has created some special two-wheeled electric drive wheels with a load capacity up to 35 tons and 56 tons. Considering the movement of the belt conveyor, the said units have no system of steering, only motor traction.

1. Borghi Assali created a two-wheeled unit with the biggest load capacity ever produced. To obtain the load requested, it uses wheels with a diameter of more than 1.80m, with the height of the drive wheel more than 2m.
2. To guarantee the protection of the electric motor and reducer, a special protection grid has been designed to prevent mud, stones and debris interfering with the performance.

Stackers
A US company is creating the plant – including electric self-propelled stackers – for a mine in Siberia. Here, weather conditions are severe in the winter and the temperature can drop to -50°. The company turned to Borghi Assali to ensure that the drive wheels of its stackers could endure and work at such temperatures.

1. To ensure the requested performance, the designg office had to:
» Design oversized structures to ensure the load capacity at every temperature
» Use special materials for the structure and components
» Use special reducers with oil and seals that are capable of enduring temperatures of -60°C
» Use special electric motors to provide the self-regulating heater element for the electromagnetic brakes.
2. Borghi Assali has produced electric two-wheeled drive wheels of 30/36 tons and four-wheeled electric boogies of 65 tons. All of the two-wheeled drive wheels are equipped with steering motors, fifth wheel and pinions, while boogies, which are liftable, have a pin connection to a hydraulic cylinder.
3. These stackers have to go incredibly slowly – the maximum speed requested is 0.37km/h. To achieve this, it was necessary to use double reducer tractions and special electric motors.
4. In order to guarantee the best protection of the motor and reducer, a protection grid was created to prevent mud, stones and debris entering the interior.

Crushers/mobile hoppers
A European company requested electric power for its mobile hopper, so Borghi Assali designed and created two-wheeled groups with electric traction and steering with a load capacity of 20 tons.

Thanks to a joint venture with an italian company that specialises in this field, Borghi Assali has even provided the software and hardware needed to manage the movement of the machines. The possibility to provide even the management system and the control system of the drive wheels makes the transition for our clients from the hydraulic system to the electric system even easier.

These mobile hoppers stand still for long periods of time, so in order to avoid the wheels deforming due to the high load that they sustain, Borghi Assali has designed a special plinth under the structure. This plinth, when the mobile hopper is "parked", corresponds with a mound on the ground so that the support of the machine is guaranteed by the plinth itself, by slightly deflating the tyre. Moreover, this plinth is an additional security factor that guarantees the vehicle's stability in case of explosion or rapid tyre deflation.

GOING FOR GROWTH

Borghi Assali is growing its production capacity and expanding the machinery fleet. It is also upgrading the quality of its products by reducing component flaws. Productivity and competitiveness is being increased by implementing automation and robotics systems for critical processes.

As well as strengthening and diversifying its skills internally, it is adding its products to new machines and expanding operations to Asian markets. It is also improving the automation of its processes by introducing modern robotic technologies referred to as "Industry 4.0", which will be fully functional by 2020.

It has also implemented an innovative non-destructive inspection system, which is a prerequisite to increase the quality of final products, in a project co-funded by the European regional development fund.

ASSEMBLY PRECISION

Borghi Assali guarantees to provide high-quality drive wheel assemblies. During the manufacturing process, mechanical parts are always under dimensional control an whether in limited space or in unique on-field situations, the company is able to fulfil 3D measurements with precision up to 0.03mm.

CERTIFIED

Its technical department is fitted with state-of-the-art systems for design and calculation, so the company can quickly meet any demand from costumers and then prepare special products for single applications. Quality control ensures the highest quality products and puts customers' minds at ease. Borghi Assali is ISO 900 I-certified and it follows Italian legal requirements in the field of safety at work.

The company is currently working on ISO I400I environmental certification. It is also working with US companies so it meets the standard for anti-terrorism called C-TPAT, an initiative conceived by customs in collaboration with a community of businesses in the global supply chain.

Finally, staff welfare is paramount and it adheres to an ethical code for the staff management.

For more information, contact:
borghiaxles.com

A NEW GENERATION OF GRABS

COMPANY NEWS

At Nemag we believe that bulk handling can be much more efficient. Therefore everything we do at Nemag is focused on improving bulk terminal efficiency. We use the power of innovation to achieve this. We are continuously looking for improvements in grab technology. Faster, lighter and stronger grabs in order to increase your productivity and simultaneously lower your operational costs.

One of our latest achievements in more efficient bulk handling is the nemaX®: the most productive grab available. It was created after 9 years of profound research and development together with the Delft University of Technology. The patented design of the nemaX will increase your productivity by at least 10%. It will substantially lower your energy costs and carbon footprint, increase work safety and significantly decrease your maintenance costs.

HIGH PRODUCTIVITY

With the high competitiveness of the dry bulk market, there is extreme pressure on handling rates. At the same time, the costs like wages, maintenance and energy are increasing. In order to create an attractive position in the market, it's important for terminal operators to achieve the highest productivity and shortest turnaround time of the vessel.

To increase the efficiency of your bulk handling operations, the most cost-effective solution is to exchange your current grab for a more efficient one. As upgrading your crane configuration is very cost-intensive.

IMPROVED MECHANISM

With the nemaX, as it's faster and lighter, we succeeded in creating a grab that is worth upgrading to. There is an additional productivity gain from extended free digging and improved cleaning up due to the large footprint of the grab. By using the nemaX, you will also immediately save out of pocket money by saving on energy costs, at least 10%. Finally the maintenance costs are significantly lower as the grab has 70% fewer moving parts.

HANDLING

When we started working on the nemaX, we started by working and listening to people who work with grabs every day: crane operators. We incorporated what we learned from working with them, resulting in the following improvements: easier to work under the hatch coaming, high stability on slopes and easier to change grabs.

KEY TO IMPROVE

Three years after introducing the nemaX is in operation across the globe. It's the key to the improvement of the total bulk handling terminal. Operators experience productivity increases by at least 10%. Payback times are less than 1 year, often less than 6 months.

For more information on the productivity increase see two user experiences of a Gottwald model 8 and Liebherr CBG300.

Want to improve your business too?

nemag®

For more information, contact:
Deltastraat 15
4301 RC Zierikzee
The Netherlands
Tel: +31 111 418 900
Email: sales@nemag.com
nemag.com

Postal address:
PO Box 110
4300 AC Zierikzee
The Netherlands

NEMAX + KONECRANES MODEL 8

Crane	KONECRANES GOTTWALD MODEL 8 MOBILE HARBOR CRANE, 63 TONS SWL	
Material	Iron Ore Pellets, density 2.2 tonnes/m³	
	Clamshell grab	nemaX grab
Grab volume	20.2m³	21.2m³
Grab deadweight	17.7 tonnes	15.4 tonnes
Rope withdrawal	13.7m	8.8m
Cycles	48.6 per hour	52.3 per hour
Productivity	2207 tonnes/hour	2497 tonnes/hour
Productivity increase		13%

NEMAX + LIEBHERR LHM 600

Crane	LIEBHERR CBG300, 30 TONS SWL	
Material	Iron Ore, density 2.2 tonnes/m³	
	Clamshell grab	nemaX grab
Grab volume	9.4m³	10m³
Grab deadweight	9.3 tonnes	8.1 tonnes
Rope withdrawal	10.7m	6.2m
Cycles	47.9 per hour	54.4 per hour
Productivity	941 tonnes/hour	1138 tonnes/hour
Productivity increase		21%

GOING FOR GRAIN

Ports handling grain have shown a reasonably buoyant performance in recent months as demand increased by end users during national lockdowns and there are several new developments to ease grain handling

The port of Ipswich in the UK was one to register strong activity and since 23 March – the day the UK went into lockdown due to the coronavirus pandemic – up to the middle of May, the Port of Ipswich has received more than 70 ships and handled a total of 240,500 tonnes of cargo on behalf of Suffolk businesses.

During this period, the ABP-owned port received more than 32,000 tonnes of fertiliser destined for the farming sector in the Suffolk and North Essex region and customers have exported over 80,000 tonnes of barley, wheat, oats and beans to ports as diverse as Rotterdam, Leith in Scotland, Gran Canaria and Reykjavik in Iceland. Other shipments also include a number of cargoes of Suffolk-grown beans, which have been exported to Egypt. The port has also received nine shipments of animal feed imports.

Other recent activities have supported the important construction and housebuilding sectors. Although some operations have been suspended, vital materials for the construction supply chain have continued to arrive at the port, many of which were shipped or arranged prior to the lockdown. 21,000 tonnes of timber has been delivered to Ipswich from Scandinavia and the Baltic States in nine ships over the same period and 51,000 tonnes of aggregate, cement and bricks have also arrived.

SUSTAINABLE DEVELOPMENT

The CBH Group's first shipment of certified sustainable malting barley departed Western Australia in April as part of the co-operative's pilot programme to meet the growing international demand for sustainably sourced products. About 27,300 tonnes of malting barley accredited through the International Sustainability and Carbon Certification (ISCC) scheme were shipped from CBH's Albany Grain Terminal bound for Vietnam.

CBH Marketing and Trading sold the maiden cargo to Interflour Group's Intermalt malting facility, located at Cai Mep Port, south east of Ho Chi Minh City in Vietnam.

CBH implemented the ISCC scheme in 2010 to sell Australian canola into the EU biofuel market and meet the customer preference for sustainably grown canola.

In October 2019, CBH announced plans to extend the programme to develop a new sustainable malting barley option for customers seeking to purchase sustainably grown barley from Australia.

CBH general manager for marketing and trading Jason Craig says the co-operative had a strong focus on identifying new market opportunities for Western Australian growers and the departure of the shipment demonstrated CBH's ability to capture those opportunities.

"We're seeing a growing demand across the marketplace for sustainably produced grain and have been able to leverage off the close relationships we have with our customers to capitalise on this opportunity," Craig says.

"As a result, Western Australian growers, who last year declared compliance with ISCC requirements for their canola, were also eligible for the same certification for their barley, enabling them to attract a premium of $5 a tonne for a portion of their 2019-20 malting barley crop. However, growers

should be aware that future premiums will be subject to market conditions.

"We hope to build on the success of this trial in future years to return more value to growers."

Intermalt Vietnam General Manager Robert Wicks welcomed the first shipment from CBH, noting there had been a significant increase in demand from brewers for sustainable barley in recent times.

"Over the past three years, demand for sustainably produced barley has increased from zero to 305 of our total barley purchases, with large corporate brewers now making it a supply prerequisite," Wicks says.

"Access to ISCC-accredited malting barley enables Intermalt to compete on equal terms with much larger malting companies attached to grower co-operatives in Europe.

"We hope to see sustainable barley become the norm in Western Australia to keep Australian growers and their customers, such as Intermalt Vietnam, at the forefront of sustainability initiatives."

Craig says the co-operative was exploring options to extend the trial this year.

LUCKY EYRE ARRIVAL

Transshipment vessel *Lucky Eyre* arrived in Lucky Bay, South Australia recently, where a commissioning process will now be undertaken as T-Ports moves forward with its innovative port project on the Eyre Peninsula.

The T-Ports model means growers can access multiple small ports that can load vessels up to and including Panamax, allowing product to be exported profitably, which will prove a great benefit to growers on the peninsula and South Australia in general.

The design plans for the Wallaroo port development are being refined, with construction expected to begin later this year.

Planning for the second port in the T-Ports network has been underway for several years and has included significant scoping studies of the coastal environment, shoreline, inland freight networks and economic feasibility to ensure the port's long-term sustainability.

Planning negotiations are underway with various agencies, with support from the Copper Coast Council and Department of Planning, Transport and Infrastructure.

"The feedback we've received to date has been very positive with growers looking forward to competition in the market," says T-Ports chief Kieran Carvill. "Growers appreciate the need to increase competition in the state's supply chains which will ultimately benefit them.

"When the approval process is finalised, T-Ports will be speaking with growers and offering them the opportunity to become involved as shareholders, as we have with Eyre Peninsula growers."

The development will include the port and loading facilities and bunker storage. The port will have silo facilities with approximately 30,000 tonnes of storage, while the bunkers are planned with storage capacity of up to 250,000 tonnes of grain.

KEEPING MOISTURE AT BAY

Ensuring moisture content in grains is kept at safe levels is key to its storage and safety on board ships and new technology is now available to help check moisture levels and process temperature measurement including flow detection.

The M-Sens 3 is the brainchild of SWR Engineering and Bintech Systems and is a new microwave sensor that monitors the flow of a product for temperature and moisture purposes. This data can be used to assess the flow of product to eliminate clogging and the equipment is fitted with a flow detection alarm to alert the user to any concerns during the flow process including, for example due to clogging.

The M-Sens 3 sensor functionality is based on precise high-frequency measurement and direct digitalisation of measured values, resulting in a high resolution. As the materials surface and capillary moisture influences strongly its specific conductive capacity, the moisture can be measured exactly by a constant averaged bulk density.

The calibration can be done very simply by the operator by pressing the button and entering the referenced moisture contents. In this context it is convenient that measured value fluctuations by bulk density variations are balanced by an internal filter function. Additionally, measured value fluctuations by temperature variations are compensated automatically by the sensor. The temperature measurement is calibrated in the factory and doesn't need any additional operation from use.

The Flow Detection function is able to provide an alarm in case of caking in front of sensor, and therefore increase the validity of the measurements.

ON A CLOUD

Other grain monitoring equipment in the market includes BDC Systems' Grain Cloud plant monitoring system. The system was initially developed by Skandia Elevator, manufacturer of grain handling elevating and conveying equipment. BDC Systems' in-house technical team was then involved in extensive product testing and refinement of the system at several trial sites in the UK.

The simple-to-use, app-based system offers a real time overview of all processes and machinery in a facility – not just Skandia equipment. Data is retrieved from the facility's control system and monitored to keep track of and record drying and conveying times and information. Warnings are sent directly to the user's phone in the event of any stoppages or breakdowns allowing problems to be identified and rectified much sooner. Remote monitoring eliminates the need for a plant to be constantly manned, therefore improving efficiency.

Maintenance is simplified as Grain Cloud stores all of a machine's operating history and issues reminders when it is time for equipment to be serviced. The app is compatible with all mobile devices. Grain Cloud has been designed to optimise work flow and minimise downtime, therefore saving money.

TOWERS OF STRENGTH

COMPANY NEWS

THE CONCEPT

The vast river network in Europe — not least in Germany, France, The Netherlands and Belgium — represents more than ever a very attractive way of transporting bulk goods and grains. Vigan developed its pneumatic tower concept 30 years ago and has been improving it ever since. The system allows the fast and efficient unloading of barges ranging from 500 to 4000 tonnes. It is generally mounted on a fixed gantry, although mobile systems are also possible, and capacities range from 100 to 600 tonnes per hour. Recently, there has been a surge in interest in Vigan's tower concept: its versatility, low-energy consumption and tailor-made concept sparking this renewed interest.

The heart of the system is the multi-stage Vigan-designed turbine. It is driven by a high-revolution electrical motor with frequency inverter steering. This configuration keeps the energy consumption low, from 0.6 to 0.8 kWh/ton discharged.

The powerful vacuum created by the turbine sucks in the cargo at an impressive rate. The tower is a very versatile unloading tool, not least due to its vertical and horizontal telescopic tube system. At the near end is the suction nozzle, an ingeniously designed coaxial tube system permitting air to come into the cargo and transporting it through airlift into the vertical and horizontal telescopic tube.

The elbow between the vertical and horizontal tube system is of the highest wearing resistance (more than eight million tonnes of grain with the same elbow has been recorded). Both the vertical and horizontal telescopic tube systems are steered by electrical hoists. The boom carrying the suction tube system is mounted and connected to the receiving bin with a powerful self-regenerating filter, reducing dust emissions to nearly zero. For maximal reach when unloading hatches, the receiving bin is mounted on a slewing ring. The boom is elevated by an ultra-safe hydraulic jack so there is no risk of breaking.

OPERATION

Barges destined for fluvial transport will generally carry loads up to 4,000 tonnes, with average loads of 2,000 tonnes. The boom length of the Vigan tower is fully compatible with these barge sizes. Pneumatic unloading has the benefit of operating close to full capacity throughout the vessel. Once cargo levels are too low for proper operation, the operator brings a Bobcat in the vessel through a dedicated hoist system mounted on the boom. Cleaning the barge with the Bobcat, it is still that same single operator controlling the complete unloading operation.

The ship can be moved a minimal amount of times without having to interrupt the unloading operation. The total number of manipulations is kept to a minimum, safety is guaranteed and there is no risk to damage the barges whatsoever.

EFFICIENCY

Pneumatic barge unloaders have the highest unloading efficiency throughout the complete unloading cycle. They run at 75-80% of their maximal capacity, with just a single operator managing the whole operation. Spare parts cost works out less than €0.04 per tonne discharged.

Customers throughout Europe and the wider world have become more aware of the benefits of Vigan tower unloaders. Over the past six years alone, more than 10 units were sold in Germany, France and Belgium to unload river barges.

Our equipment will definitely further reduce the heavy truck transport near our cities and improve the handling efficiency of the companies involved in handling and conversion of cargo. The future is looking bright.

For more information, contact: vigan.com

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UPPING THE ANTE

Logistics specialists have been taking some innovative approaches in their loading strategies in recent months, in spite of the challenges of the pandemic

Last year was a remarkable one for Singapore-based waterborne logistics specialist Rocktree. Not only did 2019 mark the company's 10th anniversary, but it was also a year in which record cargo volumes were handled; the newly established subsidiary company Rocktree Consulting was awarded its first contracts, while its joint venture company Rocktree EMCO Stevedore began transshipments from the Port of Shakhtersk.

Handling record dry bulk cargo volumes in excess of 28m tonnes, the company has come a long way since 2009, when it began operations with just one transshipment vessel, the 40,000tpd *Zeus*.

Since then, the company has more than doubled its workforce and expanded its fleet considerably. Rocktree now operates six floating terminals and multi-purpose vessels, 14 tug and barge sets, two harbour tugs, and four self-propelled barges, contributing to the company loading in excess of 180m tonnes of dry bulk cargo on to more than 2,500 bulk carriers of varying size over the course of the past decade.

"It was a milestone year, largely resultant of the success of the joint venture and the new consulting arm,

which allowed us and our clients to expand into new geographical and commodity markets," says Rocktree CEO, Daniele Pratolongo.

Operations under the joint venture began in April 2019, when Rocktree deployed the multi-purpose supramax vessel *RT Genova* and the self-propelled floating terminal *EMCO-1*. The two floating terminals operate in Sakhalin Island, with four self-propelled feeder barges and assist tugs, enabling East Mining Company (EMCO) to increase delivery volumes to 9m tonnes during the eight months of the ice-free season. Rocktree's other floating terminals and barging operations are currently offshore Indonesia.

RT GENOVA

Speaking from Singapore, Daniel Miller, head of business development, says the success of the joint venture's first-year operations has exceeded expectations. "Prior to the joint venture, EMCO was largely limited to loading cargoes on to supramax vessels and a few panamax vessels, but we can now load on to larger tonnage vessels: post-panamax and capesize thus reducing the transportation costs to end users.

"This capability has opened up new markets and extended the loading season. We can get bigger ships in to transport larger volumes at lower cost to a greater geographical area."

In May, *RT Genova* loaded Sakhalin's first-ever capesize vessel with cargo from the Port of Shakhtersk.

2019 also saw Rocktree increase its activities in other commodities, such as bauxite and iron ore – a move strengthened by the formation of Rocktree Consulting, which in November completed the front-end engineering and design (FEED) for a new floating terminal for the Bauxite Hills Mine, operated by Australia's Metro Mining Limited.

The FEED work formed part of an updated Definitive Feasibility Study (DFS) for the Stage 2 expansion of the Bauxite Hills Mine, about 95km north of Weipa, Queensland. Metro Mining aims to increase bauxite exports from about 3.5m tonnes to 6m tonnes per year by 2021.

Fundamental to the expansion is the optimisation of an on-water transshipment facility capable of loading bauxite on to larger vessels, increasing transshipment volumes and loading rates.

Currently, bauxite from the mine is exported by way of smaller, geared self-loading bulk carriers. But, by providing a dynamic simulation analysis of the entire supply chain to create a realistic vision of operating conditions, Rocktree Consulting was able to design an optimal transshipment solution to match the company's expansion requirements and the specific operating conditions in the region.

Rocktree Consulting has put forward a 100m long, 30m wide, 5.5m draught floating terminal design capable of loading up to 3,000 tonnes of bauxite per hour.

Upon approving the design, Metro Mining managing director and chief executive officer Simon Finnis, said: "Rocktree, which has been instrumental in the design, engineering and construction of more than 20 floating terminals over the past two decades, is now tendering key work packages that will allow costs to be firmed up and final engineering and design work to be completed."

Rocktree is also marketing additional opportunities with customers for the *RT Genova* and its sister vessel, *RT Leo*, to expand their scope of operations. "There are capabilities and benefits that these vessels provide beyond transshipment that customers need to see," says Trevor Larbey, Rocktree's head of commercial and operations.

Acquired in 2018, they can operate in both transshipment and distribution trades due to the unique ability to self-load and self-discharge at high speeds, greater than conventionally geared supramax vessels.

Combined with the ability to discharge directly to a single hopper, conveyors, barges, wharves or stockpiles, cargoes can be moved at speeds of over 3,000 tonnes per hour through a single discharge outlet, without having to shift alongside.

This increases the efficiency of discharge, lowers berth utilisation, can eliminate stevedoring charges and provide an environmentally sound solution for high turn-around distribution trades and higher operational efficiency.

Covid-19 has presented shipping companies with an unprecedented challenge and Rocktree has risen to the challenge. While most of the companies are struggling with crew change, Rocktree was an early adaptor to the new norm and invested in quarantine facilities around the assets and resumed crew change by putting the joining crew in quarantine for 14 days before joining the vessel.

This meant significant additional cost for crew change, the company says, but it was money well spent for the mental and physical well being of its seafarers.

Rocktree was also an early adopter of mitigation measures onboard and prohibited any third party contact for the vessels. This required the company to innovate methods to communicate and transfer information via video calls and remote surveys, for example.

Looking ahead as the group builds on the successes of 2019, Mario Terenzio, managing director of Rocktree Consulting, comments: "Our presence in other areas will grow. We anticipate further expansion in the areas we currently operate in – Russia, Indonesia, Australia – but also new regions, such as the Middle East.

"We will also explore diversification into other markets new to us as we are seeing opportunities in agricultural commodities, iron ore and other minerals."

DRONE DELIVERY

With social distancing the new norm, the use of drones is only likely to increase and shipping and logistics company GAC is backing a new Singapore-based start-up to deliver supplies to vessels via drone.

GAC set up a partnership with Singapore-based start-up F-drones to develop large-scale drones that can deliver up to 100kg of supplies over 100km to vessels and offshore platforms. Testing is currently underway on F-drones' third prototype, which is capable of handling items up to 5kg over 50km.

F-drones can help to reduce cost, time and manpower in sending supplies to vessels. Its drones are fully electric and are therefore environmentally friendly, reducing carbon emissions when supplying to ships.

At a time when social distancing as a measure to prevent the spread of Covid-19 is at the top of the agenda for many, delivery by drone can also help reduce social contact.

"Joining forces with F-drones is part of GAC's drive to embrace technology to develop new ways to meet the demands of the maritime industry we serve," says Lars Bergström, GAC group vice president for Asia Pacific and the Indian sub-continent.

"When fully commercialised, drones can be an attractive alternative to launches and helicopters for delivering supplies to vessels, especially for on-demand deliveries."

GAC's Singapore office will be supporting F-drones in a test flight to deliver packages to vessels in the near future.

F-drones has received Singapore's first Beyond-Visual-Line-of-Sight drone delivery permit and is now scaling up commercial delivery with an off-the-shelf drone.

"We are currently working towards launching our first commercial drone flight later this year with our proprietary drone, which can fly 10 times further," says Nicolas Ang, chief executive of F-drones.

"The support of GAC and all our partners is vital in helping us make this happen."

AIRBORNE ARRIVAL

In May, the Port of Rotterdam celebrated a first with the aerial delivery by drone of a parts consignment to Allseas' *Pioneering Spirit*, the biggest vessel in the world. *Pioneering Spirit* was moored at Alexiahaven in preparation for forthcoming offshore deployement.

This was the first drone delivery ever made in the Netherlands to a vessel. The pilot project was set up by Dutch Drone Delta, Allseas and the Port of Rotterdam Authority, and was intended to determine whether and how drone deliveries could increase transport efficiency in the port of Rotterdam.

The airspace over the port area will be safely managed under the slogan "Rotterdam, the safest port to fly", allowing parties to take optimal advantage of new technologies to make the port safer, smarter and more efficient.

"Utilising new technologies allows us to make our port smarter, more streamlined, more efficient and safer," says Port Authority adviser Ingrid Römers. "The current pilot project is a prime example: it makes a significant contribution to more efficient transport in general and in due time it will specifically help to reduce the pressure on our road network. The results of this pilot project can also serve as input for the Ministry of Infrastructure and Water Management when it drafts the required legislation and regulations. This will enable Rotterdam's port business community to take optimal advantage of these new developments."

Stephan van Vuren, one of the people behind the Dutch Drone Delta initiative added: "The sky's the limit when it comes to using drones in the port area. Incident prevention and control, for instance, or water pollution, firefighting, or monitoring port operations or damage. Other examples include everything from systems and bridge inspections, construction and maintenance of infrastructure, and deliveries to ships and oil rigs, to the rapid medical transport of blood and human organs.

"This pilot project in the port of Rotterdam has allowed us to directly demonstrate the added value of drone technology in a complex environment."

TOOL AIDS TRANSPARENCY

Marlink has announced the release of a new stand-alone entry version of its ITLINK software, designed to improve transparency in monitoring and reporting of the status of IT networks on board ships. The new monitoring tool enables shoreside teams or administrators to view the IT system status and availability, providing visibility on compliance with regulatory and charterer requirements.

Starting in 2021, vessel operators will be required to demonstrate compliance with a revision to the International Safety Management Code, which requires them to risk assess their shipboard IT systems – including those used to operate the vessel – and detail procedures employed to manage cyber security risks.

ITLINK is part of Marlink's portfolio of added-value services launched last year, an operational platform that enables Marlink customers to standardise, simplify and automate their vessel IT environment, enabling fast migration and effective operation of IT services across the fleet.

It has been specifically designed for IT department managers and administrators to provide remote fleet-wide monitoring status of shipboard servers, computers, operating system and applications to efficiently achieve transparency of software and hardware onboard.

The service reports operating system, software and hardware details together with established KPIs to an onshore dashboard, removing the requirement for the crew to record and report this information. With shipowners and operators facing new requirements for demonstrating IT security preparations to both regulators and their customers, ITLINK can provide a simple, secure means of improving visibility without increasing seafarer workload.

"Our ITLINK portfolio and especially this new functionality provides an important tool not just for enabling compliance with cyber security requirements, but also removing the burden of proof from the crew while improving transparency for shoreside teams," says Marlink president, maritime Tore Morten Olsen.

THE PERFECT COMBINATION

COMPANY NEWS

Many mills and grain terminals not only export grain, but also need to import products, therefore requiring systems suitable for both scenarios. In this instance, the ideal solution is to have separated independent systems specially designed for unloading or for loading.

However, if a lack of space on the quay does not allow for efficient operation and it is not possible to serve two ships at the same time, the ideal option is combined equipment for loading and unloading.

This also means that common infrastructure can be used, thereby saving the financial output required for two individual systems.

Neuero's CombiPort can use the same belt in reverse mode and usually shares the same power supply. Different solutions are available, depending on the size of the site, the ships and the volume to be loaded and unloaded. Normally these special units are a combination of standard unloaders at 300/400/600/800t/h and shiploaders from 100 to 3,000t/h, adapted to local conditions. The size and volume should be decided in early planning — even if the capacity is not required at the moment, it allows a future upgrade for the other function.

Neuero has supplied a diverse range of solutions to suit all kinds of situations, depending on factors such as capacity and the size of ship to be loaded or unloaded.

The following are examples of combined equipment. They can be less or more complex depending on local conditions, capacity and flow needs, and local regulation regarding noise and dust emission.

1. **Stationary CombiPort for barge, normally used at flour and feed mills.** The same conveyor of 300t/h is used in reversible mode. The loading also includes a dust suppression head. Installation located in Austria.

2. **Stationary CombiPort for barge, for non-free flowing materials such as soybean meal used at feed mills.** Instead of a simple pneumatic, the unloading is done by a Flexiport (combination of pneumatic suction and mechanical rotating feeder). The difference is noted in the design because the feeder force is transmitted to the structure via a vertical truss structure. The loading is "attached" via a third leg on the water and landside to the structure. This system is located in Russia.


1


2

3. **Travelling CombiPort for panamax /barge, for example for unloading panamax and loading barges.** The main purpose is to unload wheat from panamax vessels at 600t/h. The loading was installed in the back of the unloader with slewing, luffing and telescopic movements to ensure the efficient loading of barges. This installation is in the Philippines.

4. **Traveling CombiPort for panamax unloading and loading.** This equipment was designed to load and unload panamax vessels at 600t/h. The loading is done via a KIKO loader with a dust suppression head. The design ensured the legs and bogies for travelling were shared, with a central power supply. This equipment is located in the Ukraine.

5. **Travelling Combiport for barge unloading and loading of ships to 10,000dwt.** The unloading capacity was 150t/h and loading capacity of 450t/h. This equipment is in Gdansk, Poland.

6. **Travelling Combiport for barge/panamax with integrated scale.** In this example, barges are unloaded at 2 x 400t/h and ships are loaded at 1,500t/h. The equipment is complex because it also incorporates scales aas well as feeding and receiving from the silo. It unloads to the silo, unloads barges, weighs and loads panamax vesselswith or without part cargo from the silo. This equipment is located in Uruguay.

For more information, contact:
neuero.de

CONTINUOUS SERVICE

Keeping loading equipment running during extended periods is critical – so, too, is ensuring that equipment used is as safe to run and eco-friendly as possible, and suitable for dangerous port areas

Bruks Siwertell has won a contract to supply a new coal unloader to Philippines-based Quezon Power. Siwertell's screw-type continuous ship unloader will be used to serve the country's first supercritical power station.

"Excellent environmental performance was a top priority," says Ola Jeppsson, sales manager at Bruks Siwertell.

"The Siwertell screw-type ship unloader is the most efficient and environment-friendly type of unloader on the market. Quezon is very focused on its environmental responsibility and our totally enclosed material handling technology is likely to have influenced its decision."

The San Buenaventura power plant is a new 500MW coal-fired facility located in Mauban and is being built adjacent to an existing Quezon power plant. Both the new and the old plant will share the coal import jetty, which is expected to double in intake to around three million tonnes of coal a year.

The jetty is already served by a rail-travelling Siwertell ST 790 D-type unloader, which has been in operation for more than 20 years.

Like its existing counterpart, which was delivered in 1998, the new

rail-travelling Siwertell ST 790 D-type unloader will have a continuous rated capacity of 1,400 tonnes per hour and will be able to discharge vessels up to Panamax size. It is scheduled to be delivered, fully assembled via heavy-lift ship, to the site in early 2022.

DOUBLE STRENGTH

Cat Lift Trucks has recently introduced two new-generation double pallet handlers to its materials handling product range to speed up the loading, unloading and horizontal movement of palletised goods.

One of the plus points of the Cat 1.6 tonne NPP16PD pedestrian and 2 tonne NPV20PD platform double pallet handler models is their productivity advantage, as they can carry two pallets simultaneously. Not only does this halve the number of transport movements required, but with one pallet carried above the other there is no need for wider passage space.

There is also the benefit of greater efficiency from these double pallet handlers, boosted by fast travel and manoeuvring, with AC drive technology, easy control and compact dimensions. Using the NPV20PD's foldable ride-on platform, pallet loads can be transferred with minimal effort over short, medium and long distances. The pedestrian handler, NPP16PD, additionally specialises in shorter shuttle work.

Both double pallet handlers are operated via a new-style ergonomic tiller head, shaped to suit all hand sizes. The tiller arm has an inbuilt keypad and display, for quicker forklift activation, setting selection and availability of information such as battery status.

The pedestrian version features patented four-point Friction Force suspension, which ensures constant drive wheel pressure on uneven surfaces for greater stability, traction and steering control. The platform model's five-point chassis uses a friction force system and anti-rollback functionality to improve ergonomics and safety.

The double pallet handler platform truck also offers electronic power steering as an option.

WAREHOUSE WONDERS

Hyster Europe has also been extending its range of warehouse equipment with the launch of a range of pallet and stacker trucks that can be used for general purpose operations

"We are adding to our existing range of warehouse products to provide even more choice when specifying equipment to meet your particular application's needs," says Rob O'Donoghue, director of solutions for Europe, Middle East and Africa for Hyster.

"These additional options are straightforward, affordable trucks that will suit many general-purpose operations, but are particularly suitable for lower-intensity applications."

With a capacity of 2.0T and variable speed control, the new Hyster P2.0UT S platform pallet truck is ideal for pallet transportation over short and long distances. The small turning radius also makes it suitable for lorry loading and unloading, with electric steering available as an option.

For stacking pallets in the warehouse, and some picking operations there is the Hyster S1.5 UT pedestrian stacker truck. Different mast options include a two-stage NFL up to 3.5m and 3-stage FFL up to 5.6m and the low centre of gravity enhances stability at full height.

"These new, practical Hyster warehouse products deliver a low-cost of operation and an affordable alternative for fulfilling general-purpose requirements in warehouse operations," says O'Donoghue "Straightforward electronic components make troubleshooting and servicing quicker."

Meanwhile Kalmar is set to supply the Belgian operator Delca Logistics (Delca) with a Super Gloria reachstacker with a lifting capacity of 45 tons, with delivery of the machine scheduled to take place in Q4 of 2020.

The Kalmar Super Gloria is the largest reachstacker in the Kalmar product range. It is designed for demanding lifting applications and features a long wheelbase to provide maximum stability. The machine delivered to Delca will be used at the Wielsbeke terminal to load and unload cargo from ships.

Liebherr Components has also introduced a new pallet handling system at its production site at Biberach in Germany. The system is linked to two turning and milling centres for the production of powerful drive units and rope winches.

"We have replaced our previous machining centres on site to be able to cover the high product variance with greater flexibility", explains Florian Kraljic, manager of the cubic parts department at Liebherr in Biberach.

The new machining centres, however, need to do more than just milling, they should also be able to turn work pieces and connect to the pallet handling system. The concept behind the idea is to manufacture raw and finished parts in just one sequence – flexibly and around the clock.

DANGER ZONES

As the use of alternative fuels or electricity becomes increasingly popular in ports, safety company Pyroban reports that it is providing active gas detection on an increasing number of LPG forklifts used in areas close to Zone 2 hazardous areas.

"LPG remains a popular fuel choice for many forklift truck fleet managers," says Darren Boiling, European technical sales manager for Pyroban. "But we are finding that LPG trucks are used in many yards and storage areas on sites where flammable material is being processed or stored." These LPG trucks,

and other LPG-powered equipment, are often used in areas that are deemed "non-hazardous" within the meaning of the ATEX Directive, as they fall outside of formally classified Zone 1 or Zone 2 hazardous areas where a release of gas or vapour could occur in normal operation.

"These non-hazardous areas adjacent to Zone 2 may still present explosion risks, because a gas or vapour released under pressure does not recognise boundaries such as a line or warning sign," Boiling says. "LPG trucks and equipment are an obvious ignition source and it is possible for ignition to originate on vehicles in these unclassified areas."

Pyroban offers a relatively low-cost ancillary gas detection solution that can be fitted to LPG trucks and equipment.

"Gascheka Zone 3 is an active gas detection system that can be installed onsite in less than half a day to any type and age of LPG equipment," says Darren. "It provides a quick and cost-effective safety solution for daily operations, maintenance work or for short term special projects."

"This is especially helpful at the moment where the supply chain is facing higher demands than ever and otherwise may be forced to risk using standard equipment," he continues.

Easily fitted to any brand or type of diesel, electric or LPG equipment, Gascheka "Zone 3" monitors the area surrounding the equipment so it cannot operate when an explosive atmosphere could be present. The short-term use of LPG access platforms for maintenance work near Zone 2 areas is one example.

"Many fleet managers are insisting on pedestrian awareness systems, blue coloured spot-lights or similar across an entire fleet to enhance safety for their staff. Gascheka "Zone 3" is an extension of this principle to prevent explosions where full explosion protection is not viable," says Boiling.

If Gascheka "Zone 3" detects a gas or vapour release, an audible and visual warning will alert the operator or driver so that the issue can be investigated and rectified. If the gas level increases to a higher level, Gascheka "Zone 3" will safely shut off the ignition electrical system.

SMOOTH OPERATOR

Telestack has recently supplied the HF 18 hopper feeder and TR 35 Radial Stacker for HES (formerly known as MTMG) based in Gdynia Port, Poland – one of the largest independent terminal operators in dry and liquid bulk products and a market leader in the field of iron ore and coal.

The Telestack mobile system is being used to unload coal at rates of 1,000 tonnes per hour from Handymax vessels, offering the ultimate flexibility when unloading multiple holds.

Prior to the installation, the coal was unloaded using mobile harbour cranes and stockpiled on the ground using wheel loaders.

The ship unloading system that Telestack provides allows direct vessel to stockpile unloading, reducing the double handling of material as well as achieving a lower cost per tonne of material.

There are also reduced dust emissions as well as improved health and safety practice with less people and equipment involved in the process.

THE ONLY WAY FORWARD

COMPANY NEWS

Today's bulk handling operators must prepare for future population rises by focusing on maximising the use and capacity of their terminals and protecting the environment. Per Karlsson, President of Siwertell AB, Bruks Siwertell Group, explains how.

Terminals will have to meet higher annual volumes because of increased populations, and the utilisation rates of ports will have to improve. The only way to achieve this is to increase unloading rates and/or improve unloading efficiencies.

According to the United Nations (UN), by 2100 the world's population will be about 11bn, a four billion increase from today's levels. Rising populations will need more food, increasing the demand for agri-bulks and fertilisers. For example, today, the international seaborne trade in grain is around 600m tonnes per year and this is expected to increase at about 1.5 to 2% year; in 2017, the annual increase alone was as high as 7% .

People drive the development of infrastructure, where iron, coal, cement and wood will continue to be essential, and also bring an increased demand for energy. This will be met, in part, by traditional fuels such as coal, but also through renewable sources and biofuels.

Against this backdrop, environmental protection must also increase in significance and is taking greater prominence through legislation and collaborative measures, such as the 2015 Paris Agreement, which sees 196 member states of the United Nations Framework Convention on Climate Change agree to deal with and mitigate the effects of greenhouse gas emissions.

The best way we can limit the impact of dry bulk handling on the environment is to offer systems that are totally enclosed, so no dust emissions arise and to not waste any cargo through spillage. Furthermore, efficiency and maximising capacity have to be primary concerns. This ensures that systems and processes minimise any waste and make the best use of the resources that are already available. It is also better for operational profitability, as the highest performing equipment will avoid demurrage costs and maximise port utilisation.

Dry bulk handling operators are at the face of change, and a prudent choice for their port equipment will make considerable differences, not just to the environment and terminal capacity, but also to profitability.

TERMINAL RESOURCES

The most cost-efficient way to meet rising bulk demands is to design a terminal with one or two high-capacity, totally enclosed, extremely efficient unloaders. These minimise vessel unloading times and maximise a terminal's operational profits. They also ensure no material is wasted through spillage, negatively impacting the environment and profitability.

Currently, there are three main technical solutions for unloading bulk materials: mechanical, pneumatic and grab unloaders, all come with their own benefits and limitations. However, pollution is one of the biggest environmental problems in ports, so it stands to reason that grab unloaders will be less common in the future. Their dust emissions and high rates of spillage, which can be up to 2% of a load, will simply become unacceptable. They also cause too much material degradation for dry bulks such as biomass.

This leaves us to consider pneumatics to plug the capacity gap. The pneumatic unloader works well in ports with a low annual intake, however if an existing or new port terminal needs to expand these cannot be an alternative. Pneumatic unloaders are restricted to a capacity of about 600 to 800t/h with one pipe when handling grain, for example. To achieve higher capacities, they either need to have two nozzles or two unloaders. In both cases this comes with increased investment costs as well as higher operational costs.

When considering unloader efficiency, you have to make a like-for-like comparison; it is no good claiming that, for example, a pneumatic unloader operates at an efficiency of 75% in the hold, when all movements between the different holds are excluded. This is therefore not an overall efficiency of 75%, but significantly less.

"For example, a performance test carried out with two Siwertell unloaders, each with a rated capacity of 2,200t/h, on a 80,000 dwt vessel, fully loaded with coal, produced an average capacity above 77%; the time it took to completely unload the vessel, sweeping excluded. In addition to this, it is widely accepted that if the rated capacity increases, it is more difficult to keep a high average capacity because of the larger differences between the clean-up capacity and the rated capacity," says Bruks Siwertell Sales Director, Jan Karlsson, who is responsible for Siwertell products in the Asia Pacific (APAC) region.

SIGNIFICANCE OF HOLD REACH

Continuing the comparison of Siwertell screw-type unloaders with pneumatics, the Siwertell unloader can reach into all corners of a vessel's hold. This is because of the range of movement available in the horizontal conveyor and the pendulum capability of the vertical arm, which also means that assistance from payloaders is kept to a minimum.

In contrast, a pneumatic unloader has a very limited reach in a hold, as the vertical arm can only be operated within the area of the hold opening. There are pneumatic unloaders which have the capability of some pendulum movement, but all pneumatics have limitations relating to very low or no digging force capability. This makes them unsuitable for any compacted bulk and is the main reason why their use for fertilisers and soya meal is rare, as digging forces are needed for efficient unloading.

The ability to move within a hold means that there is also a considerable difference between a pneumatic and Siwertell screw-type unloader in terms of payloader assistance. For example, with grain that has an angle of repose of around 45 degrees, in a 60,000 dwt fully loaded vessel, the assistance of a payloader is close to 18%, or about 11,000 metric tons, when using a pneumatic unloader due to its movement limitations. In comparison, under the same conditions, a Siwertell unloader uses less than 5% payloader assistance, and in barges with horizontal walls, the need for a payloader will be below 2%.

With a Siwertell unloader, these low rates of payloader use are also secured through the type of inlet device used; the inlet feeder can work at full capacity as long as it is submerged at about one to two meters into the material. A number of different types of Siwertell inlet devices have been developed, specific to bulk materials, to optimise overall efficiency and the final clean-up phase.

For a pneumatic unloader to reach a high efficiency rate, this totally depends on the effective assistance of a payloader because of the substantial amount of grain that needs to be moved to its suction nozzle. However, high payloader utilisation rates have a negative impact on total running costs as well as on the environment, along with their significant power consumption requirements, and they bring far higher levels of grain breakages because of the double handling.

SENSITIVE CARGO HANDLING

Pneumatics are also limited in other ways. They have much higher rates of material degradation than screw-type unloaders, because of the velocity of material flow in the unloader. For example, the unloading velocity of Siwertell unloaders is only 10% of that offered by pneumatic unloaders, which translates into far fewer collisions between material particles in the conveyor, dramatically reducing degradation rates, which is particularly important for sensitive materials such as soya beans, corn, alumina, wood pellets and other similar materials.

For some grain importers, who potentially share terminals or jetty spaces, large, fixed installations are not suitable and, in these instances, pneumatics have traditionally been considered. However, the alternative does not have to be a conventional system, with its associated drawbacks; a new unloader is available, the Siwertell port-mobile. It is particularly well-suited to grain handling and combines all the benefits of a Siwertell unloader into a mobile form.

We are confident that, with our new port-mobile unloader, we have a product that has a higher efficiency than a pneumatic unloader, requires much less payloader assistance, and has lower operational costs because of reduced power consumption demands, which in turn lowers ports' environmental impact. Our new port-mobile unloaders are also safer, much quieter and have lower maintenance requirements.

In addition, higher capacities and efficiencies offer the port operator the possibility of benefitting from higher annual volumes and freeing up jetty space, which could, in turn, improve the port's utilisation rate and its profitability.

HIGH-CAPACITY EXAMPLES

Siwertell unloaders were introduced to the market in 1974, and as a company Bruks Siwertell has a great deal of experience handling different materials. The screw-type unloader is the only enclosed unloader on the market that has the capability to handle many different kinds of bulk materials, including very volatile commodities such as sulfur. Across the globe, Siwertell installations handle more than 45 different bulk materials including coal, pellets, salt, cement, all different kinds of grain and soya meals as well as all variations of fertiliser.

In addition to this, the Siwertell unloader is also capable of unloading at very high capacities, regardless of bulk material type. Some good examples of high-capacity mega terminals served by Siwertell screw-type ship unloaders include an installation in Liverpool, in the UK, which has a rated capacity of 1,800t/h for handling grain, and achieves an average capacity of 70% when unloading 75,000 dwt vessels, and transfer terminals on the Amazon River in Brazil unloading soya beans from barges of between 1,500 and 1,700t/h at an average efficiency of 75%.

Other examples include a cement unloader in Texas, in the US, with a rated capacity of 1,500t/h, and two unloaders at the Ha Tinh steel plant in Vietnam, which each have a capacity of 2,400t/h when handling both thermal and metallurgical coal.

However, as the global shift towards biomass continues in a bid to mitigate some of the effects of burning fossil fuels, demand is increasing, which means that modern terminals must be able to handle this material efficiently as well. Particularly as biomass pellets only have about three quarters the calorific value of coal, so far greater volumes need to be burned for the same energy generation.

A Siwertell unloader can offer a continuous rated biomass handling capacity of up to 2,000t/h. Today's industry standard rate for unloading pellets in the UK – Europe's leading biofuel user – is 1,200t/h. This is based on five Siwertell unloaders previously delivered to the country, which handle 70% of the total annual wood pellet imports in the UK. Bruks Siwertell is already discussing the use of these 2,000t/h capacity biomass unloaders with operators.

ALTERNATIVE SYSTEMS

The screw-type unloader sits in the mechanical unloader category, which also includes bucket chain unloaders and chain unloaders.

However, again, not all mechanical unloaders, apart from Siwertell screw-type units, are suitable for every material. For example, bucket chain unloaders are not used for grain handling, mainly due to their very high weight, which has a negative impact on cost. The unloader itself is also not completely enclosed in the transfer between the vertical and horizontal conveyor and because of that dust can escape. This type of unloader is mostly used for high-capacity coal unloading.

On the other hand, the chain unloader is an enclosed system with a high number of references worldwide. Nevertheless, this system, like pneumatic unloaders, has no capability to withstand any digging forces because of its weak steel structures, making it unsuitable for any compacted bulk. This is the main reason why chain unloaders are not used for materials such as coal, fertilisers and soya meal, where digging forces are needed for efficient unloading. If they are used, they require extensive assistance from payloaders and excavators, negatively impacting efficiency and shipment quality.

MEETING FUTURE DEMANDS

I believe that Siwertell unloaders can meet all types of requirements from any client in the world and we claim that our screw-type unloader is much more efficient than any pneumatic unloader or any other unloading system available on the market.

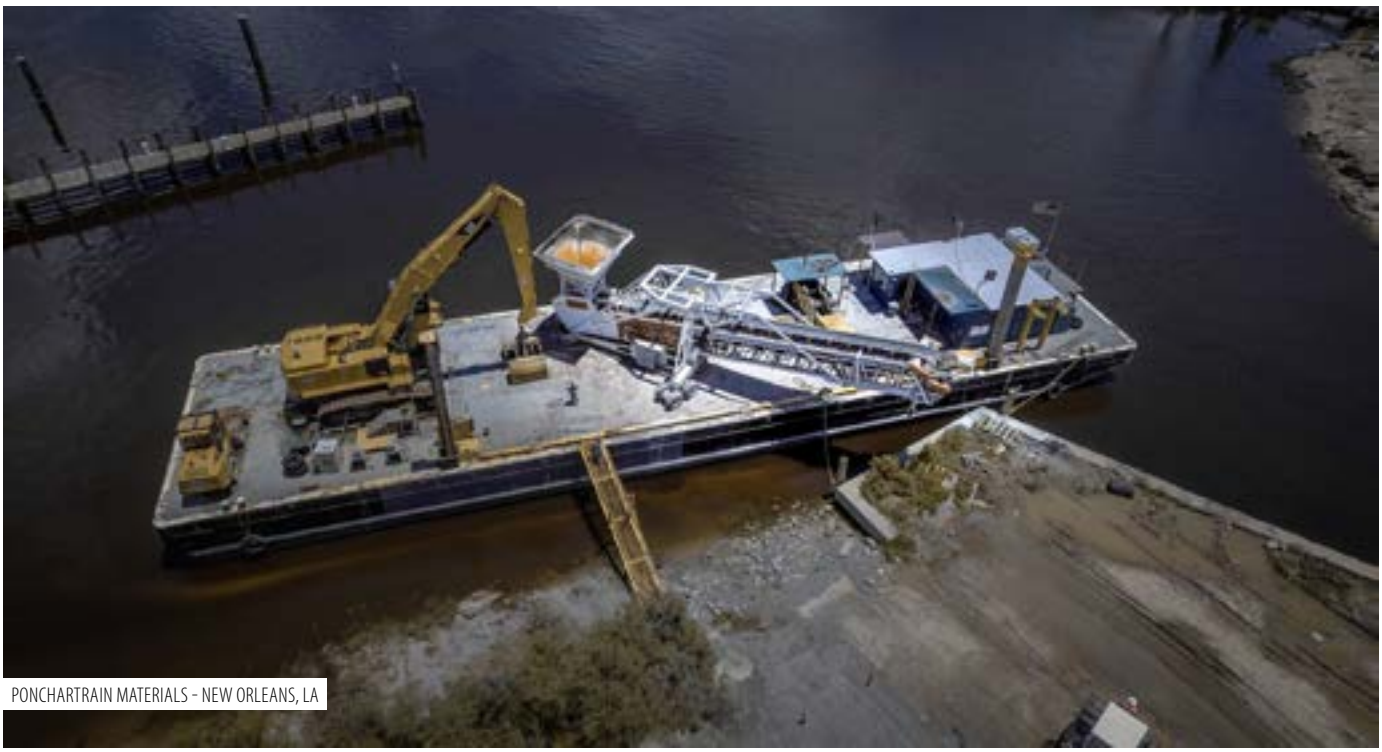
We are the only company in the world that has a product programme for unloaders that covers everything from road-mobile and port-mobile unloaders to stationary and rail-mounted ship systems. The future looks especially bright as all these unloaders are also the most environmentally friendly products on the market. Together with our loaders and conveyors, we are sure that we have the technology to meet all the demands that ports are facing today, and in the future.

BARGES BOOM

As a report finds more companies looking to potentially more eco-friendly and cost-effective barge use for transportation, a number of innovations are meeting the challenges that this mode of transport can present

Aggregates suppliers can save time and money by transporting materials via barge, but the solution comes with a number of its own challenges. Specifically, unloading material on to the shore can be difficult to accomplish in a safe, efficient manner. Crane rigs offer a versatile option for stockpiling material on river banks or loading trucks, but don't allow operators to perform the task quickly. Truck ramp rigs grant an operation more speed, but their inflexible structure fails to give crew members flexibility in material placement and prohibits unloading directly on to the bank.

However, Pontchartrain Materials has recently found an innovative solution for barge unloading. Located in New Orleans, Louisiana, the company provides aggregates to general contractors as well as asphalt and ready-mix companies. In addition to their chief product, limestone, the family-owned



PONCHARTRAIN MATERIALS - NEW ORLEANS, LA

company sells recycled concrete and recycled asphalt. Pontchartrain sources the material from quarries in northern states, transferring it down the Mississippi River by barge to one of three company aggregate yards or directly to customers in the New Orleans and surrounding area.

A number of years ago, Perry Watkins, vice president at Pontchartrain, started looking for a better barge unloading solution. "We saw a need for a dependable barge stacker to unload with. The conveyor unloaders in use at the time appeared to be under engineered, limited, and not as safe as we wanted," he says. In his search for a quality, long-term solution, Watkins got in contact with Walter Shook of Superior Industries, who facilitated communication between Watkins and Superior engineers concerning the unique situation. Watkins described the needs of his application to Superior engineers who started working on new designs.

Superior's engineers faced the design obstacle of configuring a heavy-duty, telescopic conveyor on a Pontchartrain barge, which would be between 11-14m wide. The axle length on a standard 40m Superior Telestacker Conveyor is more than 15m. The size constraint required a custom approach from Superior engineers. To mount a Telestacker Conveyor on to an 11m barge, the length of the axle would need to be about 8.5m. The standard stacker design incorporated a steel support structure underneath the conveyor called the undercarriage, which raised and lowered the conveyor, providing stability for the axle. The shortened length of Pontchartrain's custom conveyor required sharper angles in the support system design, a constraint that demanded a steeper undercarriage. However, a steeper undercarriage couldn't work because it wouldn't allow for any clearance underneath the unit.

In order to rectify this problem, Travis Thooft, Superior's chief engineer of portables systems, explains that Superior engineers switched the support system, "from being an undercarriage to what we've been calling an 'overcarriage' – a support system that rides above the conveyor. By going to an overcarriage, we're able take advantage of increasing those angles, which provides a lower force going through the support system."

Part of the challenge with the new design was working out how to distribute the weight within the unit. Pontchartrain's conveyor weighed the same as a standard unit, but the axle weight was increased considerably in order to compensate for the adjustments made to the angles and distances of the support carriage.

"It was a fit for Superior where engineering through problems seemed to be their mission in life," says Watkins. "Reducing the footprint of a Telestacker conveyor to fit on to a barge deck while maintaining the conveyor reach is not easy."

After the new design proved viable operating in-application, Pontchartrain Materials felt that the custom machine was worth the investment. It purchased the unit in August 2015. To mount the conveyor on to one of the unloader barges, Pontchartrain's crew set the conveyor axle on the barge platform and assembled it on to the bearing along with the conveyor tail. The crew then put up side supports and pinned the actual conveyor portion, including the main and stinger, on to the tail. Simultaneously, the installation crew pinned the overcarriage to the tail. Finally, the crew attached the head of the conveyor portion along with the cylinder system.

The Telestacker Conveyor's fixed radial axle allows operators to move the conveyor more than 90° radially, which, combined with the telescopic capability, provides immense flexibility during operation.

During the design process, Pontchartrain requested its Telestacker Conveyor to be fitted with a custom hopper on the tail end to meter material on to the conveyor. The hopper has a hydraulically controlled gate that operators can open or close to change the material flow.

Before owning a barge-mounted conveyor, Pontchartrain used a crane mounted clam bucket to unload material from its barges directly to a truck or hopper. Thooft describes the difficulty involved with such a manoeuvre: "If you've ever looked at a big clam bucket, the control of those is pretty difficult, especially for the operator that is sitting in the crane multiple feet away from where the discharge is. You have this huge load of material that is fairly difficult to control."

The custom hopper on the barge-mounted conveyor gives crane operators an easier target to hit. "The distance that the crane operator moves for each

BARGE MOUNTED TS PMC NEW ORLEANS, LA

load is significantly less," says Thooft. In addition to speeding up the process, Superior's design provides operators with more flexibility in positioning the flow of material and ensures a consistent flow rate.

"It's a very versatile machine, allowing us to unload to stockpiles and hoppers or on to trucks," says Watkins. He mentions that one of the best features of the Telestacker Conveyor is the wireless remote control operation, which allows the controller to run the operation from a safe position while always maintaining a clear visual of the operation. "It's a very safe machine, very steady".

Watkins' vision for a fully engineered, quality barge-mounted stacker provided the catalyst for Superior engineers to pursue greater innovation and a better product for material transfer companies. Custom conveying solutions provide an alternative to slow, stationary operations and equip river businesses with flexibility, efficiency and speed.

EASY RAILCAR OPENING

Martin Engineering, meanwhile, has developed a new high-speed, high-torque railcar opener engineered to quickly open and close even the most stubborn gravity discharge gates.

Powered by a 4cm pneumatic impact tool capable of delivering up to 13,558 Nm of torque, the Martin Impacting Railcar Opener (IRCO) features a lifting mechanism that provides nearly 38cm of height adjustment. By repositioning the axles, the tool can be set up to accommodate capstan heights of 18.4cm-56.4cm or 26cm-64cm.

As a result, the capstan extension can be quickly and easily aligned (level and square) with the gate's capstan, allowing the tool to apply maximum torque to the gate and reduce the chance of a misalignment that could cause stripping. Adjustable handle height and pivoting wheels contribute to an ergonomic, versatile design that can speed the unloading of unit trains with improved safety and efficiency.

"Cement terminals, grain handlers, glass manufacturers and other facilities use hopper railcars," observes railcar business development manager Marty Yepsen. "This design can benefit virtually any location that relies on dependable opening and closing of hopper cars with horizontal gravity discharge gates."

While shaving seconds off the opening/closing time may seem a minor advantage for bulk terminals, if that's multiplied by hundreds of gates per day, the time adds up quickly. "The adjustable capstan height and manoeuvrability of this unit mean operators won't have to struggle to get the alignment just right," Yepsen says. "They can use the foot pedals for quick, easy height changes."

The adjustable handle height also delivers a more ergonomic tool that helps reduce repetitive stress, and the improved operator experience contributes to greater safety and fewer potential injuries. Large, foam-filled tyres provide easy manoeuvrability on any surface, and users will never have to deal with a flat tire. The wheels also pivot with the pull of a lever for lateral movement to accommodate traveling capstans.

The new technology was designed for durability and long life to maximise return on investment. "In some opener designs, failures are caused by the deterioration of the OEM grease over time, with no way to replace the lubricant short of disassembly," says Yepsen. "Our design allows operators to add grease on a regular maintenance schedule to prolong the service life of internal wear parts and ultimately extend rebuild/replacement intervals."

BARGES STAGE A COMEBACK

As the maritime industry seeks to improve efficiency, barge transport is developing steadily as an alternative to road and rail, with the market set to exceed US$50bn by 2026, according to a new research report.

According to Global Market Insights, "the emergence of new wireless and mobile technologies in maritime industry is driving barge transportation market growth. Several technology companies are introducing new solutions in the maritime industry to enhance the fleet efficiency."

The report suggests that development of barge transportation will be stimulated by the fact it offers a convenient way to transport heavy goods, bulk cargoes and commodities. "Barge transportation is developing and optimising as it is used as a substitute to the rail and road transport and is more economical, efficient, and environmentally superior, attributing to market size expansion."

Another issue that needs to be addressed is that of emissions from inland waterway barges and the report suggests that barge transport may be further stimulated with the development of electric barge transportation.

According to the report, liquid cargo made up around 38% of the barge transportation market share last year and demand for barge transportation to carry liquid cargo is increasing as a result of oil exploration activity.

"The covered barge transportation segment held more than 35% market revenue share in 2019 owing to its several advantages such as protection of goods from extreme and uncertain weather conditions. It is primarily used for moving dry cargo, such as agricultural products, on account of its high cost-effectiveness.

"Moreover, barge transportation service providers are focusing on building a greater number of covered barges and refitting approximately 1,000 existing covered hopper barges to serve the increasing demand for grain barges, driving the market share."

Another issue driving the development of the barge transportation market will be the trade in metal ore, for which barge transportation offers a cost-efficient method of shipment. This is particularly true of the Latin American market, where barge transportation was worth over $4bn last year, according to the report. There has also been a surge in support for the development of inland waterways to take pressure off the road network.

"Barge transportation market players are focusing on partnerships, strategic alliances and collaborations, along with enhancing their R&D capabilities to introduce new solutions and provide enhanced customer services. Additionally, market leaders are also laying emphasis on enhancing barge transportation services to strengthen their market position and gain a competitive edge over rivals," the report suggests.

SETTING STANDARDS

Developing strategies to combat cyber crime is on the classification agenda at the moment, while VLOC safety comes under close scrutiny

Cyber safety, alongside wave modelling, non-destructive weld testing and ballast water compliance were just a few of the topics in the International Association of Classification Societies (IACS) annual review, published recently.

IACS has also outlined its recommendation on cyber resilience, which consolidates previous ones relating to the issue and applies to the use of computer-based systems that provide control, alarm, monitoring, safety or internal communication functions, which are subject to the requirements of a class society.

The recommendation provides information on matters such as reference guidelines and standards, terms and definitions, goals for design and construction, functional and technical requirements and verification testing.

IACS chairman Arun Sharma says the publication of the recommendation "marks a significant milestone in IACS' work to support the maritime industry in the delivery of cyber resilient ships.

"I am pleased to note the significant cross-industry co-operation that led to its development and we look forward to maintaining that dialogue as we

assess its practical implementation and effectiveness."

The recommendation is applicable to a vessel's network systems using digital communication to interconnect systems within the ship and ship systems that can be accessed by equipment or networks off the ship.

Robert Ashdown, IACS secretary general, explains: "The network design forms the basis for a reliable and robust network. Issues such as compatibility of various devices, communication between devices, communication from various systems and sub systems, need due consideration during design phase. This recommendation is an important step in addressing cyber resilience from the earliest stages of a vessel's life."

SAMSUNG CYBER STUDY

The Korean Register (KR) recently signed a Memorandum of Understanding (MOU) with Samsung Heavy Industries (SHI) to conduct a joint study on ship cyber security network construction and design safety evaluation at Samsung's Marine Engineering Research Center.

Under the MOU, the two groups have agreed to evaluate the construction and design safety of cyber security networks applicable to new ships. In addition, they will jointly study technologies that can respond to cyber threats faced by ships, by diagnosing ship cyber security vulnerabilities using the cyber security test beds built by SHI.

Cyber security risk management will be significantly strengthened in 2021 when the International Maritime Organization's Maritime Safety Committee's resolution Cyber Risk Management in Safety Management System (MSC.428 (98)) comes into effect.

"Through this partnership and joint research with SHI, we will strengthen our ship cyber security certification and our technical service capabilities. KR will also continue to increase its cyber security technology leadership in the global maritime market using world-class construction technology through our co-operation and close working with shipyards," says Kim Dae-heon, head of KR's Digital Technology Center.

Shim Yong-rae, head of the Shipbuilding and Marine Research Institute of SHI, adds: "We expect to considerably increase the security capabilities of smart ships through our joint research with KR, which is renowned for its cyber security certification technology. In addition, we will continue to deliver ships with the very latest world-class cyber security capabilities for our customers."

> "Going forward, the obsolete VLOCs will be phased out of the market and replaced with technologically superior and more reliable ships

VLOC SAFETY IN SPOTLIGHT

Bulk carrier safety continues to top the agenda following last year's report into the loss of the converted very large ore carrier (VLOC) *Stellar Daisy* with 22 of her 24-man crew three years' ago. As Nautilus professional and technical officer David Appleton commented at the time the report was produced: "It is about time these death trap vessels were consigned to the scrapheap."

Recent analysis by BIMCO suggests that three out of five converted VLOCs are no longer operating and perhaps one good effect of the coronavirus pandemic will be to make remaining conversions even less financially viable.

"Converted VLOCs are increasingly becoming a thing of the past with the long-term freight contracts coming to an end as newer and more reliable ships replace them in the market. Since June 2017, 43% of the VLOC fleet has been sent to the scrapyards, while 18% of the fleet is idled or damaged," BIMCO says in its report.

"The tragic *Stellar Daisy* accident brought the safety aspect of VLOCs into question. Now, three years on, three out of five VLOCs are no longer in operation as their long-term charters have now expired. Going forward, the obsolete VLOCs will be phased out of the market and replaced with technologically superior and more reliable ships," says BIMCO's Chief Shipping Analyst, Peter Sand.

The VLOCs were converted from single-hull very large crude carriers towards the end of 2000 as a result of the strong bulk market and the IMO regulation that mandated that all single hull tankers should be phased out by 2010. With cheap and obsolete tanker tonnage in the market, investors saw an opportunity to convert the ships into VLOCs and deploy them on long-term contracts of affreightment.

Clearly, this meant that the vessels were radically altered in shipyards to fulfil their new role, with additional steel added to convert them to carry bulk as opposed to liquid cargoes.

In June 2017, BIMCO analysed the VLOC fleet, which at the time consisted of 51 ships with an average age of 23.8 years, not far from the average demolition age of 24.2 years. At that point, the association argued that the ships on long-term contracts still made solid economic sense, given a second-hand price equal to the scrap value and stable earnings.

Since the last analysis, the fleet has undergone a massive trimming with 28 ships remaining in the fleet, eight of which are lying idle in Labuan, a dedicated lay-up site. Since June 2017, 22 ships have been scrapped while one is damaged and not in service. Therefore, it seems likely that converted VLOCs will soon be a thing of the past, BIMCO says.

"The investment strategy of converting cheap tanker tonnage

to dry bulk carriers seems unlikely to be replicated any time soon. With economic growth and prosperity come opportunities. The VLOCs were acquired and contracted for conversion during the dry bulk bull run in 2007-2008, but many of the conversions were only complete after the financial crisis put an end to the bull market," Sand says.

"The ships entered a market, which never recovered to previous highs, but nonetheless remained a profitable one in the initial years. In 2009 and 2010, the Baltic dry index averaged 2,616 and 2,758 index points respectively, well below the 6,390 index points seen in 2008, but a substantial margin above the averages from 2011-2019, which never exceeded 1,600 index points.

"Many of the ships are approaching the average age of demolition and these ships are set to be phased out as soon as the long-term contracts under which they are employed expire. However, new VLOCs and even larger ships, such as the Valemaxes, have already been supplied to the market.

"From June 2017 to April 2020, the Capesize fleet grew by 29.6m dwt (9.2%). From 2017 to 2019, seaborne trade of iron ore declined by 17m tonnes (-1.2%).

"A shortage of tonnage will not arise because the converted VLOCs are now phased out. New and even larger ships have already been delivered to the dry bulk market, more than covering the transportation needs," Sand concludes.

LONG-AWAITED STANDARD SET

A new Dry Bulk Management Standard (DBMS) to support the improvement of safety and risk management standards within dry bulk ship management has been launched.

The standard was kickstarted by maritime risk management and environmental assessment organisation RightShip to help drive collaboration, conversation and increased standards in the dry bulk sector.

The concept of a set of safety and risk management standards for dry bulk shipping was first mooted more than 10 years ago by David Peel, Europe, Middle East and Africa manager at RightShip and George Sarris, managing director of Enterprises Shipping and Trading.

Over the past decade, Peel, Sarris and leading owners and operators from the global dry bulk industry have collaborated to bring the idea from concept to its current draft status, with a view to generally improving safety, sustainability and welfare for all vessels and crew operating within the segment.

The voluntary programme is designed to allow ship managers to measure their Safety Management System (SMS) against agreed industry standards, with the aim of improving fleet performance and risk management. This will ensure an operator's policies align with industry best practice to both advance their performance and attain high standards of health, safety, security and pollution prevention.

The draft guidelines and standards have been created after months of collaboration with partners and operators across the dry bulk segment and the wider industry, including experienced ship managers and maritime experts.

Continued collaboration to improve the standards is thoroughly encouraged, with owners, operators and managers all having the opportunity to submit their feedback and also shape future iterations.

The draft guidelines focus on 30 areas of management practice across the four most serious risk areas faced in vessel operations: performance, people, plant and process.

The DBMS will grade the excellence of a company's SMS against measurable expectations and targets without involving the burdens of excessive inspections. While the DBMS won't be a replacement for the ISM Code, it will build upon industry standards and provide a systematic approach to encourage ship managers to move from minimum compliance to operational excellence.

Luke Fisher, project leader at DBMS, comments: "Improving safety standards is an ongoing and constant area of focus for the dry bulk segment. DBMS will help to accelerate an increase in standards, and also provide an attainable benchmark for maritime excellence.


LUKE FISHER

"Importantly, this voluntary scheme is based on the principle of comparisons and collaboration. Designed by the industry, for the industry, we are confident that the new standard creates a clear pathway of actions for owners and operators who wish to go well beyond the compliance baseline."

Antonis Sakellis, safety and quality director at Neda Maritime Agency adds: "A set of standards like DBMS has been missing from the dry bulk sector. It will allow companies individually, as well as the dry bulk industry as a whole, to gradually raise its level of safety."

George Sarris says: "DBMS is meant to provide direction to shipping companies interested in improving their management system by regularly assessing their overall performance, identifying their weaknesses in different aspects of their operation and allowing for the implementation of best practices and KPIs that will assist them to gradually achieve their safety and environmental objectives. This will allow them to meet goals set in their corporate policies and subsequently meet their obligations towards society.

"New technologies and new regulations alone will not improve shipping standards, unless we perceive things differently. The enhancement of a safety culture across the industry is a necessity, and moving on from 'paper compliance' and 'mandatory certification' models to self-regulation and self-assessment will help us achieve our goals and bring about a better dry bulk segment."

VIRUS CONTROL AND CONTRACTS

The coronavirus outbreak has highlighted a number of legal and regulatory issues that need to be addressed as far as documentation, legal compliance with contractual rules and environmental regulation are concerned

Maritime operators not only have to consider new port regulations regarding the movement of personnel, but also how clauses such as force majeure are considered in the context of the virus and what do if you cannot get hold of paper documentation relating to cargo shipments.

The International Transport Intermediaries Club (ITIC) has issued advice warning port agents of issues with receiving original bills of lading.

Port agents might, for example, be asked by consignees to deliver goods to them without providing a bill of lading in return. The consignee may claim that they have not received the bill of lading from the shipper or cannot present it to the port agent because of lockdown.

In the current situation – which has sparked renewed interest in electronic transmission of documents – ITIC has been recommending that in cases where original bills of lading remain with the load port agent, its telex release guidance should be followed.

In cases where original bills are not held by the load port agent it recommends a number of steps for port agents to protect themselves, including obtaining written permission from the principal to release cargo without obtaining a bill of lading in return, checking freight has been paid and asking the principal if a letter of indemnity from the consignee is required.

"The principal may ask the agent to check with the shipper (or the "to order party" if the original shipper has already sold the goods on) as to whether they have released the bill of lading to the consignee or to the party requesting the goods.

"This will help avoid releasing the goods to a fraudulent party. The agent should ensure they pass all relevant information to their principal for review and approval," ITIC says.

WATCH OUT FOR WORDING

ITIC has also warned recently that using the "Notice of Readiness" clause from a previous fixture can have unintended consequences.

"The Notice of Readiness (NOR) clause in a previous fixture may not have the same effect if used in a new fixture. Shipbrokers should bear this in mind when copying wordings from previous fixtures," ITIC says.

It cited one instance where the NOR clause had been reproduced from a previous fixture, resulting in a miscalculation of laytime and, in consequence, demurrage costs.

"It is important that shipbrokers do not simply copy and paste wordings from previous fixtures, if those wordings do not accurately reflect what their principals want in the current fixture," ITIC said.

CLAUSES TO CONTEMPLATE

Lockdown measures since the start of the pandemic have had a significant impact on ports and operations, resonating all the way down the supply chain, says P&I Club Skuld. There have been substantial delays in loading and discharge in ports, decreasing demand for certain types of goods and problems with storage as product began to stack up in warehouses.

While use of force majeure clauses might be activated in general terms in certain jurisdictions by suppliers, ports or subcontractors, for contracts governed by English law a party can only claim protection under force majeure if a force majeure clause has been specifically included in the contract, Skuld warned recently, and the degree of protection afforded by the clause will depend on its terms.

"Details of circumstances in which the clause can be triggered, consequences of the force majeure event and potential liabilities and losses resulting from the force majeure event will also be covered. It may also give one or both of the parties the right to terminate a charterparty – provided the cargo has not been loaded– if circumstances continue over a specified period" the club explained.

The parties may also have obligations specified, including the need to seek for a solution to the force majeure event, for example by finding another port that can handle the goods. Skuld adds that clients who are in a chain of contracts should ensure that equal protection is offered up and down the chain.

If the charterparty does not contain a force majeure clause, Claire Waller, head of FDD at Skuld Singapore, says that "there are likely to be few other clauses in a standard charterparty, which will offer protection in the event of significant delays at a loading or discharge port.

"In a time charter, hire will most likely continue to be payable unless charterers can demonstrate the existence of an off-hire event. Delays caused by slower processes at the port or unavailability of cargo will not cause a vessel to be off hire. Only in limited circumstances are charterers likely to be able to place the vessel off hire, for example, if the vessel's crew are affected by the virus, such that there is a 'deficiency of men."

In a voyage charter, delays may arise before or after NOR is tendered, from the need to comply with quarantine restrictions. "Charterers' lability for delays due to quarantine restrictions will depend on the wording of the charterparty and, in particular, if the charterparty incorporates BIMCO's infectious or contagious disease clause, time lost will count as laytime."

Other issues to consider include frustration of the contract. Under English law a contract can be terminated if it is impossible to perform and charterers might seek to argue this if it was impossible to load a cargo due to port restrictions, for example. However, Waller says that in reality the charterparty has not become impossible to perform, because measures would be only temporary.

"A delay may be enough to frustrate a charterparty, but the delay would have to be very substantial – enough to render the performance of the charterparty radically different from that which the parties anticipated," she says.

She explains that while using BIMCO's infectious or contagious disease clauses offered considerable protection, clients should ensure that if these clauses were included in the contract, they should be compatible with clauses throughout the contractual chain.

Skuld also stresses it is important for parties to keep abreast of the situation in ports at the time of nominating a port or concluding a fixture as this will be important in the event of a future dispute.

USCG TOUGHENS UP ENTRY

The US Coast Guard has issued warnings against failure to comply with the US's covid-19 requirements, which could include risks of vessel detention, civil and criminal penalties.

The presence of any ill person on board a vessel that may adversely affect the safety of a vessel or port facility is considered to be a hazardous condition under the terms of the regulations and any illness must be immediately reported to the USCG.

Those with symptoms of covid-19 must also be reported to the nearest Coast Guard Sector Office or Captain of the Port. This requirement is separate and in addition to the requirements for cargo vessels which report illnesses to the US Centers of Disease Control.

Vessels destined for a US port are required to report any sick or deceased crew/passengers during 15 days prior to arrival at the US port.

In addition, entry restrictions apply to commercial vessels coming from a number of countries including: Iran, China (with the exception of Hong Kong and Macau), Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and Switzerland, United Kingdom and Ireland.

Non-passenger commercial vessels, with no sick crew members aboard, that have been to these countries or embarked crew member from these countries within the last 14 days, will be permitted to enter the US and conduct normal operations, provided that crew members remain aboard the vessel except to conduct specific activities directly related to vessel cargo or provisioning operations.

TESTING TIMES

Port operators have faced a number of risks in recent months relating to the pandemic, ranging from mental health issues affecting crews through to cargo accumulating in shore-side facilities

Insurer the TT Club has put together a paper for UK ports and terminals to consider as part of their risk assessment and management plans during the covid-19 outbreak. The paper (available Here) is part of the British Ports Association's Port Futures Programme, which considers emerging and innovative trends in the port sector.

Sara Walsh, corporate services manager at the British Ports Association says: "During this unusual and challenging time, all UK ports are under a lot of pressure. They are having to make difficult decisions about how best to maintain their workforce so critical tasks are performed and legal duties met, while also supporting staff who are working at home or are self-isolating."

The paper addresses some of the key things UK ports and terminals must continue to prioritise when managing their workforce during the covid-19 outbreak and in its aftermath.

Michael Yarwood, TT Club's managing director for loss prevention comments: "Like many other sectors who have key workers, those who work at UK ports and terminals are in a unique position as the vast majority of roles cannot be performed at home. We have compiled a list of factors operators should consider

as part of their risk assessments and management plans during the outbreak. From social distancing, cleaning facilities, personal protective equipment, shift patterns and communications to remote working and health and well-being, ports must continue to support their staff and ensure all risks are managed as best they can be."

STORAGE SENSE

The TT Club also warned recently of the risks resulting from a build-up of cargo in port terminals and warehouses, which hopefully are beginning to ease as countries start to come out of lockdown.

The current covid-19 pandemic has disrupted global supply chains in a wide variety of ways. In particular, the lag in its effects between the large-scale sourcing regions of China and other parts of Asia and the consuming markets of Europe and North America has caused significant build-ups of goods.

"Security is clearly the most dominant of the risk issues as operators seek alternative storage," comments Yarwood "Whether it's taking up buildings not usually used for storage or laden vehicles parked adjacent to a full warehouse, or simply facilities unfamiliar to the operator, the security regime may not be of a similar standard.

"This concern is not just limited to fencing, lighting, security patrols and CCTV, but also communication with hauliers delivering cargo to the unfamiliar premises. There is also the constant danger of vehicles being diverted into the hands of criminals, so-called round the corner theft."

The physical characteristics of a temporary facility may also be unsuitable in a range of ways, such as weather-tightness, phyto-sanitary issues and uneven hard standing. The nature of the cargo needs to be considered and there needs to be the capability to handle and store hazardous materials and specialised commodities correctly.

A recent survey by the International Association of Ports and Harbors showed a mixed picture at ports around the world. "35% of ports reported an increase in utilisation of warehousing and distribution facilities for foodstuffs and medical supplies, with some ports reporting capacity shortages," the analysis showed.

EU CALLS FOR CREW CARE

With crew changes proving difficult because of differing lockdowns in different countries, April saw guidance issued by the European Commission calling on EU member states to designate ports around EU shores for fast-track crew changes, with adequate facilities for seafarers to undertake medical checks, quarantine if required by the country in question, and with transport connections onward to their home country.

Guy Platten, secretary general of the International Chamber of Shipping comments: "Crew change is a massive problem for the entire shipping industry, in addition to ship operators based in Europe, and we hope that this quick response to our calls to the G20 for action globally will act as a catalyst for other nations and that the G20, in conjunction with IMO, will quickly put in place pragmatic and co-ordinated arrangements to allow crew changes to take place.

"Seafarers are the unsung heroes keeping supply chains open. It is right that we support them as they quietly support all of us."

In April, the International Chamber of Shipping, along with the seafarers union the International Transport Workers' Federation, sent a letter to the G20 leaders, including the EU, to support the "unsung heroes of global trade" and put in place co-ordinated measures to facilitate safe and effective crew changes.

CLASS ACTION

One means of managing infection during the pandemic has been put forward by class society DNV GL.

My Care is DNV GL's infection risk management approach, which has been developed to assess, manage and mitigate infection risk in management systems, business processes and operations. My Care incorporates local regulations and guidelines – it can be applied to any vessel type, as well as terminals.

My Care's suite of independent assessment services is designed to help businesses reassure stakeholders that they have put infection risk management at the core of their risk management strategy.

The system brings together aspects of DNV GL's healthcare standards, best practices in risk management, health, safety and environment and quality management systems, and maturity safety rating standards.

It is applicable to companies in any type of industry, including the maritime industry. "Verification by a third party provides assurance that the right measures are in place to keep people safe, providing transparency and enhancing the trust of passengers and other stakeholders," says Luca Crisciotti, chief executive of DNV GL - business assurance.

"Active communication of infection risk prevention and mitigation efforts can help companies restore passenger trust, as well as that of employees and other stakeholders. All My Care assessments result in a dedicated trust mark that can be displayed online or onboard the vessels, for example, and through which you can share more information."

As a starting point to resuming operations, companies can choose to assess how well they have implemented infection prevention processes and measures.

MYCARE LOGO (©: DNV GL)

SURFACE STAR

BIO-UV's ballast water treatment technology has been adapted for use in killing coronavirus on surfaces.

The ultra-violet light technology used to kill the invasive species found in ships' ballast water tanks can be used to protect seafarers, health workers and first-responders from picking up the coronavirus from surfaces.

The 50cm handheld device emits a ray of UV-C, which is passed over the surface, taking only seconds to disinfect the scanned area. The scanner can be used to kill the coronavirus from sickbay/hospital beds, tables, computer keyboards, furniture and all other surfaces.

The company launched BIO-SCAN, the only French system certified by two independent laboratories, designed to eliminate bacteria and viruses, including SARS-CoV-2, from all surfaces using UV-C rays in May. In parallel, BIO-UV Group subsidiary TRIOGEN is currently working on the development of a disinfection system for wet surfaces using ozone.

THEFTS ON THE RISE

Cargo thefts from supply chains in Europe, the Middle East and Africa (EMEA) more than doubled to 8,548 incidents in 2019 and involved losses of product worth well over €137m, according to the Transported Asset Protection Association (TAPA).

The Association also reveals average losses for major cargo crimes of €536,889 and an average daily loss in the EMEA region last year of €378,058. The intelligence data is based on cargo losses reported to TAPA's IIS by international law enforcement agencies, insurers, manufacturers and logistics service providers.

Despite the high numbers, the Association says it is still not receiving reports on the large majority of cargo crimes it believes are taking place across the region. In 2019, the number of incidents rose 114.7% to 8,548, versus 3,981 in 2018. Of these, only 39.1% of reports provided any financial value for the goods stolen, which was put at approximately €138m.

Thefts from supply chains were recorded in more countries in the EMEA region than ever before – 48 in total compared to 35 in the previous year.

The biggest single loss reported was the theft of €17.4m of jewellery and precious metals stolen from a facility in Gauteng province in South Africa.

Overall, the 179 major cargo thefts last year – classified as incidents with a loss of €100,000 or more – represented a total loss of €96,1m.

Trucks continued to be the biggest target for cargo thieves, featuring in some 95% of all freight losses in the EMEA region. The lack of secure truck parking remained one of the most significant contributors to the crimes.

SAFETY SCORE INSIGHTS

A safety initiative has been launched by risk assessment organisation RightShip. The launch of the new Safety Score is a response for industry demands for more transparent methods of assessing vessels.

The new Safety Score provides a metric that is explainable, transparent and only includes factors that are in the control of the operator, to help support improved safety across the entire maritime sector.

The Safety Score will be housed on the new RightShip Platform, which will replace the current platform Qi as well as the predictive Risk Rating once the Safety Score goes live. The announcement is being made before its formal launch in September 2020, to provide the maritime industry with a period of time to prepare for the switch over.

RightShip's previous Risk Rating predicted the likelihood of a vessel having an incident across the next 12 months. The new Safety Score focuses on providing the operational performance at the vessel, DOC holder, flag and class level.

The Safety Score uses a refined methodology that analyses the severity of any previous incidents, the frequency of incidents and any previously identified detentions and deficiencies for a given vessel.

The new score also takes account of the proactivity of owners, operators and managers in managing safety and risk by looking at their responsiveness to incidents, deficiencies or detentions. This, in turn, helps to provide a clear, identifiable path towards improving safety standards and processes.

It creates a level playing field for all vessels on the water, regardless of type, size, age or builder, allowing industry participants to benchmark their safety procedures against the sector's best performers.

It is intended to help users gain an initial perspective on the operational performance of a potential charter, and to encourage shipowners to invest in improved processes and technologies that make the entire supply chain safer.

Commenting on the launch of the Safety Score, Martin Crawford-Brunt, CEO at RightShip, says: "Our new Safety Score recognises considerable industry feedback calling for greater transparency and control of ratings, and is the result of widespread collaboration with owners, operators, managers, charterers and others across this global industry.

"We have created a balanced score that can be used by all members of the supply chain. For our due diligence customers, it provides a clearer insight to the operational performance of a vessel and DOC holder.

"The Safety Score is an indicator designed to be used as one of many factors in the due diligence process. Coupled with maritime expertise, it allows for the assessment of a nominated vessel and the provision of a vetting recommendation for a charterer."

WELFARE PARTNERSHIP

RightShip and charity Human Rights at Sea, recently signed a new long-term partnership agreement to help improve seafarer welfare.

Under the agreement, they will work to raise awareness of the implementation and accountability of human rights provisions throughout the maritime environment with local, national and international stakeholders and regulators, and the maritime industry as a whole.

SOLITARY SOLUTIONS

Trying to reduce the number of personnel involved in port operations is likely to be a feature of port life going forward

Concetti has launched an automatic bulk bag (FIBC) weighing, filling and closing system designed to be operated by only one person. The new net weighing and filling station for single loop bulk bags can fill up to 180/BB per hour, ensuring high productivity combined with increased flexibility.

This system is designed to provide enhanced automation of a traditionally manual process that normally needs three workers, reducing costs and ensuring greater safety at work.

The machine operator should only place bags on to the filling spout, while all subsequent steps such as bag inflation, alignment of the filling neck after filling, transfer to the sealing station, heat sealing of the filling neck, lifting of the single bulk bag hook and automatic insertion of the sealed neck of the internal liner inside the bulk bag are all carried out automatically within the system. The full bags will then be removed by the fork lift truck at the end of the filling line.

Additional innovation includes an adjustable filling system enabling bags of different heights to be filled for the first time.

This bagging system, to be used for aggressive and corrosive chemicals, has been manufactured entirely in stainless steel and can be wet-washed to prevent scaling. The single loop sacks used are polypropylene WPP (raffia) with an internal PE liner for heat seal closure.

AMSTERDAM SERVICE

In co-operation with TMA Logistics and the Amsterdam port authority, HEBO Maritiemservice now has a permanent location for its sheerlegs, which are located at TMA Logistics facility at Amerikahaven. With these sheerlegs, HEBO offers up to 800 tonnes of lifting capacity for breakbulk and offshore projects in the region.

HEBO will also be involved with the port's Emergency Response team, based in the Coenhaven in Amsterdam. This team is responsible for providing first response to incidents such as the cleaning of released waste from for example, oil and chemical products, and also cleaning up plastic waste.

HEBO is already active in the Netherlands in Rotterdam and Zwartsluis and is a major maritime service provider in Europe. With its floating cranes offering up to 800t of lifting capacity, as well as pontoons and emergency response vessels and vehicles, it carries out a wide variety of activities such as breakbulk and special projects, emergency response, salvage, infrastructure, ship-to-ship operations and superyacht transport.

BRAZIL'S GRAIN SUPPORT

In an operational first, the port of Paranaguá in Brazil carried out the country's first shipment of bagged cornmeal to feed families in Congo, Africa. The product is from Paraná, originating in the Maringá region. A total of 240,000 bags containing 6,000 tons of cornflour were shipped.

President of Portos do Paraná Luiz Fernando Garcia stressed the importance of diversification at the port. "The entire logistics chain wins with a new product among exports. We have already shown that we have the knowledge, capacity, and structure to serve the general cargo segment with quality and efficiency, which is the one that has been growing the most."

Cornflour has been exported for some years now via the Port of Paranaguá, although in containers. "We have high expectations of this breakbulk shipment. This new product opens a new possibilities that do not depend on the harvest, as the flour uses stored corn. It is a regular product, exported all

year round. This is good for the entire port community," says Patrick Ferreira Tavares, commercial director of the Marcon group, the company responsible for loading.

According to Tavares, the operation uses 25kg bags, such as that used for sugar. Other goods that can follow this same trend are beans, popcorn, sesame and derivatives. "We believe that there is every possibility that they will follow the same path, due to the quantity already exported in containers," says Tavares.

Certain precautions have to be taken in storing and transporting the cornflour as it is a food item for human consumption. "We have several controllers monitoring this operation, looking at quality and cleanliness in warehouses, outside the port, in trucks, in ship loaders, and in-vessel holds," Tavares says. According to him, the shipment was discussed with the Operations Directorate of Paraná Ports for more than a month.

"The port provided all the conditions for this operation to be carried out and it is one of the few ports in the country to have the capacity to carry out this operation," he says. The reason, according to Tavares, is that in the Paraná terminal, retro area warehouses are specialised in foodstuffs, with a static capacity of more than 100,000 tons.

"This allows us to maintain productivity when loading the ship. In addition, the Port of Paranaguá provides security to operators. Today, we have the best structure in the country for general cargo," he maintains.

FRONT VIEW OF INTERMARINE'S OPERATIONS CENTRE (PRNEWSFOTO/INTERMARINE, LLC)


VIEW OF INTERMARINE'S INDUSTRIAL TERMINAL FROM THE FOURTH FLOOR OF THE OPERATIONS CENTRE (PRNEWSFOTO/INTERMARINE, LLC)

CENTRE OF OPERATIONS

Intermarine officially opened its state-of-the-art operations centre at Industrial Terminal, the leading breakbulk terminal on the Houston Ship Channel in March. This landmark building is the only office building of its kind on the channel and houses Intermarine's entire technical, operations, traffic and terminal teams.

The new centre has a customer area with floor-to-ceiling windows and premium audio visual equipment, from where customers will have sight lines to all of the main docks. "The idea is to enable our customers to monitor the loading or unloading of their cargo from a comfortable space," says Mark Johnson, vice president of global sales and marketing. "We also encourage them to visit the ship, but in the event of weather or timing, they can get an up-close view from our building.

"When the weather is nice, people can also visit the fifth-floor observation deck. This allows an unobstructed, 360°, view from the Beltway all the way to downtown Houston."

"This new operations centre enables us to continue our plan of growth and expansion, but more importantly it gets all our operations, technical, port captain and traffic teams together in one location," says chief executive Al Stanley. "Bringing these groups closer to our client's cargo makes all of our processes more efficient. We are quicker to react, if needed, and able to give real time updates as to the activities at Industrial Terminal. The centre reinforces our commitment to providing our teams with the best resources to meet our customers' needs."

Developed by Intermarine, Industrial Terminals is the largest project cargo port in the United States. Centred on 95 acres adjacent to the Houston Ship Channel, Industrial Terminals is designed to provide maximum flexibility for handling project and breakbulk cargoes to multiple trade lanes.

The facility includes three deep water berths, a 457m barge terminal with rail support, cargo marshalling capacity with covered warehousing, ITEX delivery service, IPACK export packing services, direct ship-to-rail access and Saturday service.

CAST ADRIFT

As the Capesize market and iron ore trade show signs of buoyancy, marine advisor Basil M Karatzas wonders if it will all end in tears

In the past couple of years, the dry bulk shipping freight market has been especially uninspiring as rates have been hovering at just above operating breakeven levels. This has been especially true for the Capesize market, vessels of 160,000-220,000 dwt that are employed primarily in the transport of iron ore from Brazil and Australia to China.

Although the market has not been as profoundly bad as it was in March 2016, Capesize freight rates have been averaging $10,000 per diem (pd), barely sufficient to cover vessel daily operating expenses and drydocking provisions.

On paper, the market should have been better as several market drivers were pointing to a strengthening market: newbuilding deliveries and outstanding Capesize orderbook have come to a screeching halt (currently, outstanding orderbook stands at 2.6% of the world fleet, and it was close to 40% in 2009); likewise, demolition of Capesize vessels was approximately 4% per annum in 2018 and 2019.

In short, the tonnage supply for Capesize vessels barely increased in the past few years, indicating a more favourable to shipowners tonnage supply (and demand) equilibrium. On the other hand, Chinese portside iron ore

stocks have been kept at low levels and Chinese steel production has kept strong, implying continued strong demand for iron ore imports.

Furthermore, a sizeable part of the world's Capesize fleet was offline in 2019 (more than 5% of the Capesize world fleet in certain months) as many vessels were in drydock for installation of exhaust gas cleaning systems in anticipation of the 1 January 2020 IMO2020 lower emission regulation deadline.

Yet the Capesize freight market never really took off; there had been a very short window in the summer of 2019 when Capesize spot rates from Brazil to China spiked at $40,000pd, but it was too short-lived to have any material benefit for many of the Capesize shipowner.

Possible explanations for the age of betrayed hopes for the Capesize market have been attributed to China's unwillingness to keep iron ore inventories at comparable levels from previous years (approximately 30% lower than in previous years), which are likely to have "shaved" close to 20% of tonnage demand.

However, the likelier factor is that Vale's deadly Brumadinho Dam collapse forced the company to take offline more than 30% of its annual production, by some accounts, or close to 90m tons. To put this into perspective, it takes five Capesize vessels to load one million tons (and three months of sailing for a round-trip Brazil to China), or 450 vessels for Vale's lost production; the world's Capesize fleet is approximately 1,600 vessels. In short, close to 10% of Capesize demand was lost in just Vale's lost production.

While Vale was busy facing the fallout from the deadly accident (in financial, regulatory and social terms), Australia iron ore miners found an opportunity to grow their market share and substitute Brazilian iron ore exports to China, especially in 2020, when Australian iron ore exporters have been growing their market share by 15%.

From a shipping point of view, Australian exports to China are almost one-half as good than Brazilian exports given the shorter transport distances required. In retrospect, the state of the Capesize freight market in the past couple of years is now easy to understand.

At the beginning of 2020 (and pre covid-19 days), expectations of iron ore trade were subdued with approximately 2% growth in world seaborne trade, mostly out of Australia. Although small in percentage standards, it's quite substantial in absolute terms, as the world's seaborne iron ore trade exceeds eight billion tons per annum, and a 2% growth would translate to 300 additional shipments in a year, or one spot voyage for every fifth Capesize vessel in the world fleet.

When compounded with a static order book and world fleet, the prospects were fair for 2020, before taking into consideration any bottlenecks and other unforeseen circumstances.

But again, there are few days in shipping without unforeseen circumstances. Covid-19 brought the world's industrial production (and most of the shipping industry) to a standstill. Accordingly, until recently, for most of 2020, Capesize freight rates were below vessel daily operating expenses, and any hopes for a market recovery seemed broken. And, most Capesize shipping companies were battening the hatches for another difficult year of broken promises.

Coincidentally, closures of mines in Brazil (and elsewhere) due to covid-19 boosted iron ore prices out of an anemic market and closer to $100/ton, with the market getting jumpy about iron ore production disruptions. At such pricing levels, Australian iron ore exporters are highly incentivised to book and sell as much iron ore as possible, given that their production break even is — generally — at approximately $25/ton. In shipping terms, it means that Australia and the Pacific Basin and the "short-haul" trades for Capesize vessels becoming more important, and having attracted Capesize vessels out of the Atlantic Basin and to the Pacific Basin.

And, compounding on unforeseen circumstances, earlier this week Vale announced that it has received tentative permission to gradually resume production at the Itabira mine, which seemed to catch the market by surprise given the expediency of the permits.

All in all, the Capesize market has been experiencing one of its usual vertigoes as the spot freight market has moved from $6,000pd to $24,000pd in just four days: Australian miners are busy booking ships and exporting while the commodity price is strong (especially since BHP's and FMG's fiscal years ended on 30 June), while there is a temporary dearth of vessels in the Atlantic for Vale's positive developments in the week. Such are the fortunes of shipping, especially of the Capesize market notorious for its volatility and the present multi-fold increase in spot freight rates.

Although there are hopes that the current spike has "legs" and could match last summer's $40,000pd spike, it has to be noted that for a ship to be fixed at and get paid current rates it has to "be in position", being at the right place and right time; for vessels needing a month to reach the loading port, a short rally may not be of much benefit. And, furthermore, even at $24,000pd as current spot rate, it's minimally profitable when vessel's daily operating expenses, financing costs and full amortisation come into consideration.

We share the excitement of the strong Capesize market at present, as the market (any market) could get a benefit amid the malaise of the covid-19 pandemic. On the other hand, we do not want to be naïve and get on yet another bandwagon of a market recovery and sustainably strong freight rates, and end up with another basket of broken hopes in shipping.

Although Capesize tonnage supply is as favourable as it ever has been in the past decade, demand, even before covid-19 was fair; covid-19 has the potential to make obsolete quickly even the most precocious business model.

Basil M Karatzas is Founder and CEO of Karatzas Marine Advisors & Co, a New York-based shipping finance advisory and ship brokerage firm working primarily with financial institutions active in the maritime industry. Visit karatzas.com or call +1 212 380 3700

SMART MOVES

As well as several state-of-the-art technology and e-commerce installations, the Port of Riga has been carrying out major improvements to turn it into one of the Baltic region's most important and future-proofed ports

Home to 627,487 inhabitants, which represents a third of Latvia's population, Riga is the largest city in the three Baltic states and is home to one tenth of their combined population.

The freeport of Riga is the largest port in Latvia and the second largest port in the Baltic States, handling 22% of the total cargo volume of the major Baltic ports in 2019. Approximately 200 private merchants operate there, including 35 stevedoring companies – freight terminals, which together provide around 5,000 jobs.

Last year, it was announced that the government would take control of Riga and Ventspils freeports, with a new company established to run this. The port has started significant upgrading works to reduce its environmental impact and improve the quality of life in local neighbourhoods.

Several important developments took place over the year at the port, including the unveiling of state-of-the-art terminals in Krievu sala to cut coal handling in the centre of the city. This was the largest investment and infrastructure project ever implemented at the port.

It included construction of several berths and roads, a railway station and an enormous wind barrier, as well as installation of state-of-the-art handling technologies.

Port operators have also contributed to the development of port infrastructure and improvement of its general competitiveness. Rīgas Universālais Terminālis started receiving ships at its reconstructed berth at the beginning of this year following investment of €5m.

Executive director Jānis Kasalis says: "We understood that if we failed to invest in the development of our company, namely, a longer and deeper berth, the volume of cargo handled by us in the future would decrease and we would not be able to grow as we had planned to."

Meanwhile, at the beginning of summer, drainage of Kundziņsala residential area started. Due to rapid development of the port and the construction of new infrastructure and terminals, the level of groundwater had increased in this part of Riga. The objective of the project was to prevent flooding of residential areas and mitigate the effect of port activities for local people.

A Chinese/Latvian e-commerce centre was also launched last year, with

the departure of the first container of paints from Riga Paints and Dyes Factory to China. This project has the goal of transforming Riga into a significant e-commerce transit hub in the Baltic region.

The port has also embraced the smart port concept, with a number of advanced technology and e-commerce projects launched. In one such project carried out in co-operation with LMT, test flights of 5G environmental monitoring drones were carried out.

Meanwhile, like other ports across the world, Riga has had to adapt to the situation brought about by the coronavirus pandemic.

At the end of April, the port authority revised its budget plans and reduced planned expenditure and investment by about 20% – or around €10m. This was in response to the decline in economic activity caused by the virus outbreak and uncertainties about how long it would take for business to bounce back.

In spite of this, the port has continued to operate at full capacity and the implementation of several investment projects important for the port and the city have continued.

These projects include the construction of Kundziņsala overpass, which will reduce the cargo flow through the centre of Riga, and also the restoration of the shore reinforcement structures washed away by the autumn storms in Bolderāja.

European funding is being sought for the reconstruction of both port piers, which will provide an opportunity to deepen and expand the port access channel. This would significantly enhance port capacity vis a vis competitors, with larger ships gaining access to the port, more efficient transportation and transshipment of larger volumes of cargo. Developing Riga further as a logistics hub is also a target.

Since April, the port has also been testing the open access forecasting system, which provides real-time imaging of currents, waves and water levels in the port area. Created in Latvia, the system's developers, PAIC, have been researching waves, currents, sediment transport and silting of shipping lanes in Latvian ports for several years. Riga is the first and so far the only port where the new system is operational. Since April, it has been available to everyone on the web platform: *water.lv/HywasPort/RigasOsta*.

ON THE ROAD

Last year, more than 500,000 trucks passed through the port, with the majority of road cargo handled at terminals located on the right bank of the River Daugava, including those in Rinuzhi.

Several port terminals and warehousing companies operate in Rinuzhi, including the SIA Rīgas universālais terminmāls, which in co-operation with its largest bulk cargo supplier, the Freeport of Riga Authority, Latvian Road Transport Directorate and the SRS Customs Authority has launched a pilot project with the aim of digitising document circulation for road cargo transportation to port terminals and automate road transport within the port.

At the port, road transport is mainly used for delivery of Latvia's export and import cargo, which is mostly timber, as well as grain, crushed stone and peat.

In terms of volume, the largest type of transshipped cargo in the first quarter of this year was timber, which accounted for almost a quarter (24%) of the port's cargo portfolio, and is almost entirely locally sourced. In the first three months, 1.5 million tons of various timber products were shipped from the port. Ships delivered timber to 14 different countries; most of the cargo has been delivered to the UK (37% of the total), Sweden and Denmark, which are traditionally the largest Latvian timber export markets.

In the first quarter of 2020, 583,000 tons of grain and grain products were shipped from the port, 65.1% up on the previous year – the largest increase in turnover among all types of cargo transshipped at Riga. Almost half of the total volume was exported in March.

The final destination for half of all grain shipments is Nigeria, but grain is also shipped to Turkey, South Africa, Sudan, Lebanon, Egypt and ports in European countries.

"The record-high volume of grain products transshipped in March was 100% grain grown in Latvia," comments Valerijs Fjodorovs, commercial director of SIA Alpha osta, the largest grain product terminal in the Port of Riga, which daily handless goods from Latvian producers as well as transit cargo from Lithuania and Russia.

"We attribute the high turnover in March to the high demand and good prices in the grain market. The sellers tried to take advantage of the good market conditions and sell grain stocks, which in turn is reflected in grain export volumes and terminal transshipment rates."

Grain transshipped at Port Milgravis terminal in Riga is also almost entirely produced by local Latvian producers. Port Milgravis is the second largest grain product terminal at the port. The plan is to build new grain warehouses within the port and also another berth in order to improve grain handling capacity.

Riga has also been stepping up its cement handling in recent months.

Since March, the KS Terminal has started transshipment of bulk cement with the specialised vessel *Greenland*, carrying an average of 3,500 tons of cement, expected to call two-three times a month.

Another cargo handled by the port – which has ramped up frozen cargo handling capacity – is fish which is mainly destined for Ukraine and Kazakhstan by road and rail.

Riga Universal Terminal has the advantage of a large warehouse, where up to 12,000 tonnes of frozen products can be stored, in compliance with all food storage standards. Seafood and poultry products are stored here – and, in summer, ice cream.

The aim is to provide a cold store that is located in a free economic zone in the European Union, which means that the cargo is secure, and it is easier to receive funding or export support programmes in Norway and other countries.

BE PREPARED

Automation in conveyor belt cleaning is just one of the innovations streamlining systems at terminals, while advances in atomised mist technology are keeping vast areas clean and safe

As part of moves to boost innovation in advanced technologies for conveyors and other bulk material handling applications, Martin Engineering has developed a belt cleaner position indicator that monitors the blade, tracking and reporting remaining service life.

The intuitive Martin N2 Position Indicator (PI) monitors primary belt cleaner blades, notifying service technicians and plant operations personnel when re-tensioning or replacement is required and/or when abnormal conditions occur.

The PI can be part of a new installation or directly retrofitted to existing mainframes that use the company's replacement blades. Managers and service technicians can quickly access info on any networked cleaner via cell phone.

With approximately 1,000 operating systems currently in service and installations continuing daily, the technology has been embraced by bulk material handlers in a wide range of industries and applications. Designed in-house by the engineering team at Martin's Center for Innovation (CFI), the

MANAGERS AND SERVICE TECHNICIANS CAN QUICKLY ACCESS INFO ON ANY NETWORKED CLEANER VIA CELL PHONE

N2 Position Indicator is produced solely in company-owned facilities to ensure the highest standards for quality control. In fact, the firm also engineered and built the proprietary equipment used to manufacture the new devices.

"There are no annual maintenance fees and no add-on charges for mobile phone access," confirms Martin Engineering global marketing director Brad Pronschinske. "Most customers using our cleaner blades can take advantage of this technology."

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

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

The device eliminates the need for manual inspections by giving technicians precise information, delivering critical real-time intelligence and reducing exposure to moving conveyors, improving both efficiency and safety. Maintenance planning is simplified by having detailed information available on demand, allowing service personnel to deliver and install replacement wear parts during scheduled outages. Alerts are provided automatically, for example if a blade change is required.

"This capability is a true enabler, bringing a number of benefits," observes Pronschinske. "Belt cleaner inspection time is basically eliminated, as maintenance personnel no longer need to physically view the cleaner to determine the tension or wear status," he says. "It also reduces the time workers need to spend near the moving conveyor, helping to minimise the potential for accidents."

Pronschinske describes the innovation as a game-changer in the industry, with a positive impact on productivity, operating costs and safety. Relying on actual operating conditions instead of human judgement to monitor blade wear and tension for optimal cleaning performance, the indicator maximises the blade's usable surface area and reports with certainty when a blade is nearing the end of its useful life.

Delivering instant, continuous feedback while eliminating guesswork – tracking the individual performance and status of each cleaner – the detailed history also provides a maintenance log with service dates and work performed.

DANGER ZONES

Recognising the hazards that surround a conveyor is another area that Martin Engineering is keen to highlight. The conveyor is a very powerful system and given the number of potential danger zones it represents, "the entire system should be considered a hazard", the company believes.

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"In most applications, a conveyor belt moves at a relatively constant speed, commonly running somewhere between 0.5 and 10m per second . An Olympic sprinter has a reaction time of about 0.18 seconds when poised at the starting line and totally focused on the race. If this athlete becomes tangled in a conveyor belt travelling 1.5m per second , the person would be carried 0.27m before even realising what has happened," the company says.

A "regular" worker would need a longer time to react in such circumstances, the company claims, and as most conveyors are engineered with the ability to start remotely, the system may go from dormant to active at any time at the push of a button, catching someone unaware.

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"When a conveyor belt is moving, there will usually be more tension on the carrying side," observes Martin Engineering process engineer Dan Marshall. "If the conveyor is merely stopped and de-energised, that tension may remain in the belt in the form of stored energy."

Marshall says that a system under tension will always try to approach equilibrium; that is, it will try to release the energy. This release will likely come in the form of a pulley slip, which occurs when the belt slides around the head pulley to equalise the tension. The distance the belt will move is proportional to the amount of tension stored and the belt's modulus (elasticity), possibly several feet. If a worker is on the belt or close enough to be pulled in during this sudden release of energy, injuries or death can occur.

"There's a simple rule of thumb regarding conveyors: if it's moving, don't touch it," Marshall says. "The most common way to prevent inadvertent contact is with suitable guarding that renders the moving components inaccessible." For maintenance or repairs, procedures for lockout/tagout/blockout/test-out should always be followed when working on a stationary conveyor, and systems should be equipped with anti-rollback devices on the head pulley.

BELT CLAMPS CAN BE AS SMALL AS TWO BARS OR AS LARGE AS A GIANT VICE. © 2020 MARTIN ENGINEERING

Many of the moving parts on a conveyor belt system are rotating components. These parts include idlers, drive shafts, couplings, pulleys and speed sensors. Items rotating at a high speed pose the risk of entanglement or entrapment. "All moving machine parts should be guarded with adequately constructed, properly installed, functioning and well-maintained guards," says Marshall.

There are many pinch points on a conveyor, components that the belt touches or comes near, including drive pulleys, snub pulleys, idlers, stringer, chute walls and deflectors. If a worker's limb travels with a conveyor belt, it will meet one of these components.

THE PINCH POINT BETWEEN THE BELT AND A CARRYING IDLER IS ONE OPPORTUNITY FOR AN ENTRAPMENT INJURY. © 2020 MARTIN ENGINEERING

"Effective fixed guards should be absolute in their protection; workers should not be able to reach around, under, through or over the barrier separating them from moving components," Marshall adds.

Many of the fatalities around conveyors have happened when a worker was cleaning fugitive material from the structure or components of a conveyor system. The process of cleaning may put a worker in proximity to a very dangerous machine.

CLEANUP BRINGS WORKERS WITHIN CLOSE PROXIMITY OF A MOVING CONVEYOR. © 2020 MARTIN ENGINEERING

Airborne dust, too, can cause numerous health risks, ranging from material build-up in the lungs to explosions. While it is virtually impossible to prevent all fugitive material from escaping a conveyor structure, taking practical steps to minimise it as much as possible helps reduce the dangers it can introduce. When clean-up is necessary, performing the job while the conveyor is running should not be an option. Operators concerned with the cost of lost production from stopping a conveyor to clean need only consider the consequences of an accident to confirm the wisdom of this rule, the company says.

Until recently, the engineering of belt conveyors to carry bulk materials hadn't changed much over the past half-century, despite the fact that virtually every requirement for safety, regulatory compliance and production performance has been raised during that time. Standards continue to tighten and industry best practices now often exceed government requirements.

"Using these new and emerging technologies, even poorly performing conveyors often don't need to be replaced or rebuilt, but merely modified and reconfigured by knowledgeable and experienced technicians installing the right modern equipment," Marshall concludes. "

"Specialised conveyor training and trusted resources from global suppliers are helping to raise operator awareness to make conveyor systems cleaner, safer and more productive."

ATOMISING ATTACK

At a time when viruses are headline news everywhere, methods for wide-area suppression of surface-borne microbes such as coronavirus is a serious consideration for both private industry and public works.

The World Health Organization (WHO) differentiates cleaning with disinfecting by defining cleaning as "the removal of visible dirt or particles," whereas disinfecting "refers to specific measures taken to control, deactivate or kill infectious agents, such as viruses and bacteria".

A study testing the effects of SDCs on infectious viruses (Ebola) conducted by the School of Engineering at Tufts University in Massachusetts found that "the use of just 0.5% chlorine solutions with a 15 minute exposure time is effective in reducing transmission risk". When distributing the proper mixture and dosage to an area during low traffic times, property owners can significantly mitigate the potential risk.

Atomised mist technology disperses millions of tiny treated water droplets over a wide area to achieve effective coverage. It is currently being utilised for the safe and consistent distribution of Surface Disinfectant Cleaners (SDCs) over work sites, busy foot traffic areas and communal spaces. At the forefront of this effort is BossTek's DustBoss line of industrial misting cannons, a family of high-powered machines originally designed for large-area dust control.

"The challenge is protecting workers and the public in outdoor spaces by the most effective means possible, using technology that requires the least amount of human contact," says Mike Lewis, vice president of sales at BossTek.

"Sending crews of people out on a regular basis to clean publicly-accessed

surfaces is inefficient, costly and exposes the workers to potential contamination. Studies have shown that the distribution of SDCs evenly across surfaces can effectively reduce the presence of viral and bacterial microbes to mitigate the spread of disease. Atomised mist has proven to be a very effective distribution method."

Public spaces aren't the only locations being treated – Lewis says the company has also supplied equipment for large operations such as mines and material processing facilities that are sanitising work surfaces before employees return to work. "We're even seeing some customers who aren't back up and running yet, but they're re-purposing their machines to help out other businesses or municipalities, loaning out the equipment to help protect others," he adds. All of the DustBoss models for these applications are available for sale or rent.

The heavy-duty barrel-shaped DustBoss cannons force water through a circular brass manifold fitted with atomising spray nozzles that fracture the water into tiny droplets 15 to 200 microns in size. The midsized model has a reach of up to 60m.

Using a powerful 25 HP fan that produces 30,000 CFM (849.50 CMM) of airflow, the droplets are propelled outward in a cone-shaped pattern. With the adjustable 0 to 50° angle and 359° oscillation settings, the largest model in the fleet can cover up to 31,000m^2 – nearly six football fields.

Companies that specialise in outdoor disinfecting services are currently contracted by municipalities and private industries, and have already begun successfully implementing this technology in North and South America.

The atomised misting cannons can be mounted on water trucks or specified in the company's Fusion configuration – which includes a trailer-mounted cannon and genset – an effective delivery system for large-scale disinfecting work that's portable by a pickup truck.

The mobile operations go to parks, community centres, schools, construction sites, and business plazas at opportune times of the day or evening to evenly distribute their proprietary SDCs.

Using the optional dosing pump, technicians are able to precisely meter in the right amount of disinfectant to achieve desired concentrations, maximising efficiency and minimising waste.

"People want to work and play in the safest environment possible and this technology can help," says Lewis.

"According to some experts, these types of outbreaks may be more frequent in the future. Having a mechanism for large-area disinfection in place that is easily dispatched to vulnerable areas to quickly stem the tide of infection from surface-borne microbes is a smart move for both public and private entities."

EASY ACCESS

Coming up with new and innovative approaches to port operation has always been a major issue for Scandinavian ports, which have been moving to improve efficiency while tackling environmental issues

NEW TECHNOLOGY IS COMBINED WITH TRADITIONAL NAVIGATIONAL AIDS AT PORTS OF STOCKHOLM

Stockholm Norvik port has been working to improve port access and its new fairway is now open for business.

Under the new system, state-of-the-art technology is combined with traditional navigational aids.

The Swedish Maritime Administration and Ports of Stockholm have been working together on the project, which has involved relocating buoys and establishing new navigational markers within the port's remit.

Navigation markers are equipped with digital monitoring and can be controlled remotely, explains Jonas Andersson, nautical co-ordinator at Ports of Stockholm.

The Finnish company Meritaito has supplied the five navigation markers that Ports of Stockholm is responsible for – four illuminated screens and a green fairway buoy. The navigation markers are connected to the internet via mobile network and can be monitored and controlled remotely.

The port is testing and developing possibilities to automate control of the light intensity of the illuminated screens. The intention is to reduce the light intensity when there are no vessels in the fairway, as well as to make energy use more efficient. The tests are part of the EU Intelligent Sea project.

Supply of goods through the port is proceeding smoothly, the port says, despite the difficult situation resulting from the coronavirus pandemic. The amount of goods transported via Ports of Stockholm in March was up on the comparative monthly figures for the previous year. As the vast bulk of goods arrive in Sweden by sea, it is extremely important that the supply of goods via the country's ports works well, even in difficult times such as these.

"Services at Ports of Stockholm function 24 hours a day, every day of the year," says Thomas Andersson, Ports of Stockholm managing director. "Thanks to our professional and dedicated personnel, we can offer the service and solutions our customers demand, and assure a reliable flow of goods to and from the Stockholm region, even in times of crisis."

CONTAINER CONNECTIONS

Logistics company Euroglobe is set to establish terminal operations, including bonded warehouse facilities at Stockholm Norvik port.

Euroglobe has leased a land area of 6500m^2 from Ports of Stockholm that will be used to load, unload and store goods. A terminal building will also be constructed that will connect to the container terminal operated by Hutchison Ports Sweden.

"The establishment of Euroglobe here will provide completely new possibilities to transfer goods between the different types of transport operating services to and from Stockholm Norvik Port, and we are very pleased to be able to develop our collaboration with Euroglobe," says Johan Wallén, director of sales and marketing at Ports of Stockholm.

"It feels good to be in at the start of Stockholm Norvik Port and to be able to offer the same good service that we have been able to provide at Frihamnen Port. We are proud to be involved and to be able to develop logistics in the greater Stockholm region, together with Ports of Stockholm and Hutchison Ports," says Javier Sangüesa, sales Manager at Euroglobe.

GOTHENBURG INITIATIVES

As a result of the coronavirus outbreak, the majority of ports throughout the world have been forced to re-examine their routines. At a time when workers in ports and crew members on ships are limiting physical contact, the Port of Gothenburg has indicated that this could mean an acceleration of digitalisation in the shipping industry, a point that has been emphasised in other marine communities.

The practices around vessel calls have therefore been adjusted to avoid the effects of the virus.

The port sited the case of the tanker *Ternvag* that visited the port recently and which adjusted ship practices on board to take account the dangers of spreading the virus.

"We are in a vulnerable position and we are limiting on-board access to key individuals, such as pilots and service technicians," says Johan Östlund, the ship's chief officer. "Fortunately, we can deal with most things using computer systems and email exchange even if it takes a little longer."

At the same time, it takes slightly longer at the quayside when the new routines are being introduced. Even though a great deal of the work takes place remotely during the approach, once the vessel is at the quayside a whole range of physical interactions are normally required between the crew and the dockworkers. This could involve everything from inspecting the quality of the cargo to going through permits, safety checklists, and notices of readiness before loading or discharging.

Dan-Erik Andersson, chief operating officer at the Energy Port in Gothenburg, comments: "Loading and discharge are traditionally based on human contact. It's quick and the entire system has been refined over the years. Changing the whole structure so quickly may result in a loss of time and momentum. However, by introducing new routines and new systems, and ensuring more tasks are carried out simultaneously rather than consecutively, we can probably become more efficient in the long run."

Increased automation and digitalisation is a top priority at the port. The majority of the initiatives that have already been introduced have proved to be particularly constructive during the coronavirus pandemic. The digital system Permesso, which was introduced in 2019, has resulted in a significant reduction in administration and face-to-face contact when issuing work permits to contractors. Automatic gates for trucks introduced by APM Terminals are another example of a more efficient operating procedure, reducing the need for physical interaction.

Malin Collin, deputy chief executive at the Gothenburg Port Authority, is responsible for the digitalisation process. She states that extensive digital changes at the port will be introduced within the near future and could make a substantial difference.

According to Collin, it is largely a question of improving efficiency and

visualising freight flows and traffic movements to and from the port.

"This is one of the most critical issues and we have dedicated resources to finding a solution. We are currently examining how artificial intelligence can make use of historical data to predict events and speed up the decision-making process," she says. "We can improve planning through data-driven decisions, identifying trends, and predicting events. By doing so, we can create a platform for more efficient freight flows and transport movements on land and at sea."

Meanwhile, while ports throughout Europe have been hit hard by the pandemic, the Port of Gothenburg has increased volumes, with no cancelled calls and none planned.

Figures published by the port authorities reveal that container volumes at the 10 largest ports in Europe fell by an average of five per cent during the first quarter compared with last year. In contrast, container volumes at the Port of Gothenburg increased by eight per cent during the same period.

"We offer a wide range of services, a highly efficient rail infrastructure, and the capacity to remain sustainable even in these more testing times," says Elvir Dzanic, Port of Gothenburg chief executive. "Freight flows from all over the country are being concentrated increasingly on Gothenburg as companies reassess their logistics concepts."

No direct calls have been cancelled at Gothenburg, too – services to and from Asia using the world's largest vessels have continued, week in, week out.

GREENER OUTLOOK

Green energy is likely to become even more of a key issue going forward, with wind turbine power being one source of supply.

Infranode, a Nordic infrastructure fund, has hooked up with Danish Port Esbjerg to invest up to 1bn Danish kroner into new port infrastructure facilities for the wind turbine industry in the port. The project could create thousands of "green" jobs in Esbjerg and the rest of Denmark.

Investments at Esbjerg could include port facilities for storage, pre-assembly and manufacturing of components for the offshore wind industry. Investments will be made available gradually as manufacturers of wind turbine components and offshore wind service providers expand their businesses in the rapidly growing wind turbine industry.

The investments to be made in the port of Esbjerg will be Infranode's second major investment in Denmark. In December, Infranode completed an investment to build the largest solar park in the Nordics, which is now under construction in Vandel in central Jutland.

"We've found a strong, long-term partner with substantial insights in energy, port infrastructure and sustainability," says Flemming Enevoldsen, Port Esbjerg's chairman. "With this new partnership, the city of Esbjerg, Port Esbjerg and Denmark will be even better prepared to seize opportunities to create green growth and new jobs in the massive expansion of offshore wind power in the North Sea as we approach 2030."

The investment is expected to create as many as 2,000 new jobs. The port of Esbjerg already has an employment effect equivalent to 17,000 jobs in and outside of Esbjerg.

It is important to Port Esbjerg that the agreement with Infranode will provide access to financing for the construction of facilities – particularly in a world challenged by covid-19 – so a lack of capital does not become a hindrance to green growth in Europe.

"We have a really strong platform in Esbjerg and in all of Denmark in terms of the green energy potential," says Port Esbjerg chief executive Dennis Jul Pedersen.

"The physical settings are in place at the port of Esbjerg, and this agreement will set the base for the necessary financial capabilities for unlocking the huge potential so we can establish the necessary production capacity."

TERMINAL TALES

FIVE STEPS TO UNDERSTANDING

With the mental health of seafarers centre stage at the moment, one initiative addressing the issue is a video log by the American Club and Eagle Ocean Marine: *Seafarer Mental Wellness — Five Things the Industry Can Do Now*, available on the Club's YouTube channel.

Setting aside the tough position that seafarers are in since the pandemic started, Chris Hall, the Club's managing director in Hong Kong, says straightforward and direct action is needed to address the situation. Even before the current crisis, a survey by the International Transport Workers Federation suggested that anything up to a quarter of seafarers had some kind of mental health issue.

The Club says counselling, encouraging on-board social activity, communication and mutual understanding, widespread adoption of anti-virus best practice to engender a sense of control, and consultation with seafarers in preparing mental wellness policies and programmes are required. Check it out and see what you think.

MUSIC TO MAKE A MARK

Law firm Ince is another organisation that aims to raise awareness of the plight of seafarers.

Ince's senior partner Julian Clark, a well-known figure in the maritime industry, is also a musician and he and his band Love Street have dedicated a track to the charity Sailors' Society. *From the Sea I'll Come Home'* aims to raise awareness of the issues seafarers face, as well as raise money for the Society. As Julian puts it: "Not only are seafarers facing the same risks and concerns as many land-based key workers, their position is made worse due to the inability to social distance on board their ships, restriction of shore leave and significant challenges to their mental health."

The track is available for download from Sailors' Society's website *(sailors-society.org/from-the-sea)* and all the usual digital media including iTunes, Spotify and Amazon Music.

OFFICERS AND A GENTLEMAN

One familiar face supporting the Ince initiative is Tony Vlasto, former head of shipping at Clifford Chance. These days, Tony chairs the charity Maritime London Officer Cadetship Scholarship programme. This raises funds to support young people who want to become merchant navy officers, thus providing a valuable source of future seafaring experience for the potential benefit of the UK maritime services industry.

FISHY BUSINESS

Moving on to something completely different, here's a nice story from Cadman Cranes. One of the company's specialist Compact Crawler Cranes was put to use at Farmoor Water Treatment Works in Oxford to remove silt from the main inlet lanes running from the River Thames.

Aside from doing the job it set out to do, Cadman's equipment came in handy for helping out a local resident who had become somewhat stuck. While removing silt from the inlets using the bucket attachment, the operators came across a lost pike and safely relocated it back into the main river where it belonged. Nice one!

EEL EVENT

In further fishy news, more than 150 rare eels had to be rescued at the port of Gothenburg. The eels became trapped during construction of a new terminal at the port — the largest development project there for more than 40 years. Happily, they were all rescued and moved to open water in Gothenburg's southern archipelago.

"We hadn't expected to find any eels at all," says project manager Joakim Grenmarker. "Discovering 150 so close to where we were working was a surprise, particularly as construction of the terminal has been in progress for a while. Having said that, the eels don't seem to have been too bothered."

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