BULK TERMINALS *international*

SPRING 2020

THE OFFICIAL MAGAZINE OF THE ASSOCIATION OF BULK TERMINAL OPERATORS

GOING VIRAL
Industry responds to coronavirus outbreak

NEW HORIZONS
Grabs and cranes on the rise with a slew of contract signings

MONEY TALK
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STAYING SAFE

BY SANDRA SPEARES

As coronavirus continues to spread, the message for bulk terminal operators is remain safe, remain efficient and explore how new technology can improve your business prospects during these challenging times

The industry is facing turbulent times, grappling with not only the coronavirus pandemic, but also with issues such as the introduction of new technology driven by the new Sulphur2020 requirements.

As many have stressed in recent times, including the International Maritime Organization secretary-general Kitack Lim, it is essential that the industry pulls together during this difficult period, and most specifically supports those workers in ports and at sea that ensure that the world keeps trading.

It is difficult not to view coronavirus as the only game in town and, as Dryad puts it the "defining threat trend" for the year, as the supply chain is affected at every level. There are other issues to be tackled that are more familiar – notably piracy – and Dryad suggests that there may be an increase in illicit maritime trading as a result of restrictions put in place by coastal nations.

Perhaps one of the few positive messages coming out of the situation is that air emissions have been cut by fewer movements on the roads and in the air. At its meeting earlier this year, The Clean Air Alliance underlined how those companies that fitted scrubbers believe they are beating regulatory requirements in terms of removing sulphur. Those with fitted systems are upbeat about how they have performed and it remains to be seen whether the fears about engine breakdowns relating to use of the low sulphur fuels will materialise in large quantities.

Given that the virus began in China and China is the primary driver of capesize trade, the outlook in this segment was all the more dependent on how quickly the country recovers from the virus and suggestions that China might be turning the corner as far as combating the virus is concerned may take the pressure off capesize operators. Bad news has been continuing for capesize operators with the vagaries of the iron ore market. If trades collapse, over-tonnaging which has always been the scourge of the industry as a whole may well come to the fore, particularly if owners don't go to the scrap yards.

In the meantime, the message for bulk terminal operators is remain efficient, remain safe and continue to explore what new technology can do to improve your business prospects. There are plenty of new innovations in the industry aimed at improving throughput and cutting costs. Safety and security remain paramount if we are to tackle issues like deaths in enclosed spaces. The role that drones can play in keeping people safe is one example that is likely to increase over time. As the virus continues to bite, taking care of workforces is the most important challenge.

As many events have been postponed so far this year, big gatherings will have to wait until the health situation resolves itself so keeping in contact with suppliers by more conventional, but not face to face means, will be important.

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UNCHARTERED TERRITORY

SIMON GUTTERIDGE, CHIEF EXECUTIVE ABTO

The industry faces a threat like no other with coronavirus, but all sections need to work together to protect worker safety and supply chain movement

Supporting industry-wide initiatives to ensure the protection and safety of stevedores and all port workers is something that is, quite rightly, high up on ABTO's agenda. The World Health Organization's (WHO) declaration of the coronavirus covid-19 as a pandemic adds a further dimension to the need to protect the health and safety of everyone in ports – not just our own bulk terminal sector.

Port and terminal workers are vital to ensuring that cargoes are loaded, unloaded and sent on their way down the logistics chain. ABTO therefore urges all port authorities and bulk terminals to implement whatever measures are required to protect the health and safety of workers – of course in the interests of those workers, but also to ensure that disruption to the logistics chain is minimised so far as it can and to limit the spread of the virus.

As the land sea interface, our sector should not forget the seafarers who transport the cargoes that provide the throughput our terminals rely on for their very existence. Intercargo has highlighted the problems seafarers face due increasing restrictions imposed by Port States, leading to problems with crew transfers. It urges: "IMO Member States and all Port States to adopt a pragmatic approach in assisting shipowners and seafarers to overcome these challenges by removing undue hindrance for seafarers to leave or join a ship in their ports". As Intercargo makes the point, quite apart from the dangers to the physical and mental health of seafarers, "without efficient crew changes, the supply chain would break down, leading to basic product shortages and greater hardships for people around the world".

In addition to some seafarers being effectively locked down on their ships, others are unable to take on essential provisions, including medical supplies, reports the International Shipsuppliers & Services Association (ISSA). This can be caused by a port's decision to refuse entry to a vessel on account of a previous port call, or because chandlers are being prevented from boarding a ship. ABTO certainly endorses ISSA's call that the maritime industry needs to work together to protect the health and safety of those both at sea and ashore.

What, then, are the predictions for the bulk terminal sector? Without knowing how long covid-19 will continue to spread and infect it is, of course, impossible to say with any certainty. As Basil Karatzas, founder and CEO of Karatzas Marine Advisors & Co – who spoke at last year's Bulk Terminals conference in Amsterdam and is a regular contributor to this magazine – put it to me when I asked him for his predictions: "In short, this is a fast-developing story and the world is really into the proverbial unchartered waters. There are several permutations of scenarios of what can happen, including a catastrophic (hopefully low probability) scenario. However, the average scenario is that (based on China developments) within a month, life will return slowly to normal, with the velocity at which the virus spread highly decelerating, and people go back to work. But, again, this medical crisis has the possibility to evolve into a global recession, which obviously will be bad for shipping, and many other industries."

BIMCO expected average freight rates for 2020 to come down from last year's before covid-19, which obviously has exacerbated the trend. Peter Sand, BIMCO's chief shipping analyst, says: "The high fleet growth will offset any potential demand growth and, at the very least, the IMO 2020 regulation will adversely impact dry bulk profitability through 1H20.

"The coronavirus has simply worsened the negative market outlook."

That said, while the various freight rate indices are certainly an indicator of likely terminal throughput (particularly the Baltic Capesize Index, which largely reflects the levels of Chinese imports of iron ore driven by industrial activity in China), they are not the whole picture for the potential level of future terminal activity.

There could, in fact, be a short term recovery. Speaking at the recent Virtual

Investor Forum, hosted by J Mintzmyer on Value Investor's Edge via Seeking Alpha, Star Bulk president Hamish Norton said: "The thing to keep in mind is when the virus peaks, quite shortly after the peak, demand for dry bulk is likely to snap back pretty solidly. What we're expecting is that people will make up for lost time – there might be some surprises to the upside."

Be that as it may, Benjamin Nolan, managing director at Stifel Financial, said at the event: "If we are moving into a global recession, then the underlying demand for things such as iron ore to make steel falls".

These two positions – a spike followed by sluggish activity in the short to medium term – are not necessarily in contradiction with each other. So, who knows? As Karatzas suggests, slow recovery to at least depressed levels of activity seems to be the best case scenario – certainly so far as iron ore is concerned. The smaller trades are certainly showing some signs of recovery due to increased exports of grain from South America.

Being part of a truly international activity, the bulk terminals sector, in common with all ports and the maritime industry generally, relies heavily on conferences and other events to network with each other and exchange best practice with our peers.

Covid-19 has impacted on industry meetings particularly heavily. To name just a few, ICHCA International's Spring 2020 Meeting, due to take place at Buxton in the UK in early April, has been postponed, as has the International Association of Ports and Harbors, IAPH 2020 World Ports Conference, which was due to be held mid-March in Antwerp.

We hope that the virus will be under control and things running more normally for our own annual ABTO Bulk Terminals conference, which will be held in Riga, Latvia on 6-8 October.

Fortunately, just before travel restrictions started to impact, the Wolfson Centre for Bulk Solids Handling and ABTO short course "Port and Terminal Operations for Bulk Cargoes 2020" was held in March. As it was, four delegates were told to cancel by their companies, but they and any other interested parties will be offered the opportunity to join Skype sessions. The other short courses that The Wolfson Centre runs will also be offered in the same way for the foreseeable future.

One that might particularly interest members of the bulk terminals community is its Pneumatic Conveying of Bulk Solids, which is being held at the end of April. To join in, visit its website at *bulksolids.com*, contact Caroline Chapman on +44 (0)20 8331 8646 or email wolfson-enquiries@gre.ac.uk for further details. The Wolfson Centre has kindly offered any ABTO members a discount on course fees.

A somewhat surprising and certainly rather worrying aspect emerged at the introductory stage of the Port and Terminal Operations for Bulk Cargoes 2020 course. Professor Mike Bradley (who is on the ABTO Members Advisory Panel and a regular speaker at our annual Bulk Terminals conference) introduced the course with an explanation of the differences in the characteristics of bulk solids and powders, compared with solids, liquids and gases. The characteristics of the latter three are taught in basic science lessons in school – but not powders and other bulk solids. Therefore most in the bulk solids industry do not understand the differences. Consequently, most of those designing equipment or their buyers do not understand either, so most handling equipment does not work properly.

Some four decades ago, the Rand Corporation published a report authored by Edward W Merrow, Kenneth Phillips and Christopher W Myers highlighting the extent of cost overruns with new projects. Projects involving liquids handling overran by roughly 10% in terms of time and budget performance. But for bulk solids handling, the figures can only be described as ranging from the disastrous to the catastrophic – typically 110% cost overruns, more than twice the budget and sometimes as high as high as four times. 60% of plant had not reached full throughput after two years.

Since then, things have become worse, due to bulk terminals having less in-house experience and so placing more reliance on supplier's claims. Many of these suppliers are unaware of the Jenike design procedure, which is described in a publicly available report entitled *Storage and Flow of Solids*.

Even qualified structural engineers sometimes do not understand the forces in silos. Failures in silos are often, I learned at the course, the result of structural engineers relying on non-relevant design or engineering protocols.

The only solution for operators to counter these shortcomings at the design stage is to understand the properties of the bulk that the terminal intends to handle and tell the supplier what is required. This needs to be based on the accurate measurement of the properties of the material to be handled: their flow properties; segregation tendencies; caking, attrition, adhesion, and so on. Without this knowledge, the cheapest – but not necessarily the most suitable – offering will to purchased and savings on CapEx will be paid for in OpEx.

Why then is there such widespread ignorance? Only three universities in the world offering mechanical engineering degrees have a final year option in bulk solids handling: the University of Greenwich and two others in Australia. Only three students at Greenwich are currently taking the final year option in bulk solids handling. Most mechanical engineering students express an interest in cars or aviation. However, many more will end up in the food or pharmaceutical industries, rather than in careers designing Ferraris or the latest stealth bomber.

The core principles they would learn by taking the bulk solids handling option would be equally applicable in designing systems for bulk terminals as in food or pharmaceuticals. There would then be a pool of transferable expertise available – both to those firms designing equipment for bulk terminals and for operators to employ as buyers, able to properly spec and critically analyse what was being offered. It is an option that requires more awareness.

FIRST RESPONSE TO A NEW THREAT

Maritime players' initial reaction to the advent of coronavirus and how the situation will play out in the months ahead has been top of the agenda across the industry

"I have spoken many times of our 'voyage together'. Never has the spirit of those words been more important than it is now," said International Maritime Organization (IMO) Secretary-General Kitack Lim in his latest address on the situation

As transport hubs are being affected, ports are being closed and ships denied entry. The ability for shipping services and seafarers to deliver vital goods, including medical supplies and foodstuffs, will be central to responding to, and eventually overcoming, this pandemic, he said.

"It is, therefore, crucially important that the flow of commerce by sea should not be unnecessarily disrupted. At the same time, the safety of life at sea and protection of the marine environment must also remain paramount.

"One of the goals of the IMO, as stated in its Convention, is to ensure availability of shipping services to the commerce of the world, for the benefit of humanity. I urge all IMO Member States to bear this in mind when framing their policy decisions with regard to the coronavirus. Defeating the virus must be the first priority, but global trade, in a safe, secure and environmentally friendly manner must be able to continue, too."

He urged the industry to remember seafarers who are in the front line and urged a pragmatic approach to the issue of crew changeovers, resupply , repairs, survey and certification.

DEFINING THE THREAT

Dryad Maritime also pointed to the effect of the coronavirus and its ramifications, which included not only the threat of a global recession, but logistical complexities, geopolitical considerations and security issues. "The shipping industry and maritime domain has not been insulated from these. It is expected that COVID-19 will be the defining threat trend of the year, which will shape commercial and security trends within shipping. During this period of instability, it is key that vessels, vessel owners and the maritime community rely on clear-headed, data-driven and reliable solutions, which will facilitate economic activity within this new reality," Dryad said in an assessment.

It raised concerns that if the virus spread throughout sub-Saharan Africa, overwhelming healthcare systems and becoming most states' main priority, efforts to mitigate regional maritime crime in West Africa are likely to be neglected. Therefore, with the heightened risk that security responses are hampered due to widespread infection, it is unlikely there will be a decrease in piracy incidents and a partial increase is eminently possible. Nigeria is likely to remain the epicentre of West African maritime security issues, with any downturn in vessel volume unlikely to alter the current trend.

As states increasingly restrict the movement of citizens, trade is likely to be exacerbated in areas such as the Gulf of Guinea, Gulf of Aden, Red Sea, Gulf of Oman and the Malacca Strait, where black market activity has been observed in the past

Dryad also raised the issue of Iran, which is currently grappling with issues resulting from ongoing economic isolation, global oversupply of oil and the struggle to contain COVID-19. Recent calls on the US to reduce sanctions to assist Iran in fighting the outbreak seem to have failed, with the US pressing ahead with sanctions on Chinese shipping companies transporting Iranian oil. Faced with potential economic collapse, Iran may feel compelled to act.

CORK RESPONSE

Port authorities have been trying to continue to run operations without a hitch and Cork, Ireland's second largest port and the key facilitator of trade in the south of Ireland, recently confirmed that its freight operations are continuing to operate smoothly and that at present its arrivals schedule remains unaffected. In addition to the Port of Cork's existing robust hygiene standards, it is taking additional measures to ensure the safety of all employees and visitors to the Port of Cork. The Port's preparedness plan has also been implemented, triggering the proactive execution of all necessary measures to ensure operational continuity.

Conor Mowlds, chief commercial officer of Port of Cork, comments: "The Port of Cork's logistics capabilities have been

thoroughly stress-tested and we are well positioned to support our customers and maintain our key position in the country's supply chain. We will see to it that essential goods and medical supplies get to where they're needed as quickly as possible."

Captain Paul O'Regan, harbour master and chief operations officer of Port of Cork, added: "We are constantly monitoring this rapidly evolving situation and have put additional sanitisation measures in place to ensure that all vessels berthing in Cork have a clean bill of health.

"Loading and discharging continues as normal at Port of Cork, and we are working closely with our partners day and night to assess any potential impacts. Even if delays do occur, we are confident we have the capacity to undertake any necessary mitigation and we will do everything we can to ensure that Ireland's shelves remain stocked," O'Regan says.

LOSTICS CHAIN WARNING

The German Shipowners' Association (VDR) has urged the maritime industry to pull together in order to ensure that the logistics chain is not disrupted in the light of the current corona crisis.

Close to 300m tonnes of goods are imported or exported via German seaports alone. VDR President Alfred Hartmann says: "The urgency not to allow this sea-based logistics chain to be disrupted will prove to be essential in the coming days and weeks – not only for Germany as an economic location, but for every single person. Each supermarket, every enterprise, including all hospitals, depend on merchandise transported by ships."

In the present situation, ships as closed units – often out at sea for weeks – are particularly suitable for transportation of goods. "We transport merchandise, not viruses," says Hartmann. The VDR is not aware of any corona cases on board German merchant vessels to date. However, the VDR has noted that drastic restrictions are increasingly being imposed on these merchant vessels entering ports. "Now that's a really disastrous development," warns Hartmann.

CAPESIZE WOES

While the capesize segment has been massively impacted by the coronavirus, the smaller dry bulk segments are starting to recover towards profitable territory, partly on the back of seasonally higher grain exports from South America. Nonetheless, as the coronavirus continues to spread, the risks are skewed towards the downside, BIMCO says.

The Baltic Exchange Capesize index drew headlines lately, as it, for the first time ever, went into negative territory. Yet, as the capesize segment has remained in the doldrums, the smaller dry bulk segments panamax, supramax and handysize have started climbing away from the loss-making freight rates, according to BIMCO.

While seasonally strong grain exports could provide for a temporary lift in freight rates, it is ever worth addressing the elephant in the room: structural overcapacity, the association warns.

The panamax, supramax and handysize fleet grew by a challenging 4.5% through 2019, and with 25m dwt on order right now it seems unlikely that the fleet will return to a strong balance between supply and demand anytime in the near future.

Looking forward, coronavirus is a massive uncertainty factor, which will limit world economic growth through 2020. While China just now is getting back on its feet, it seems likely the worst is yet to come for the rest of the world.

"BIMCO had already expected a challenging market for the dry bulk market in 2020. The high fleet growth will offset any potential demand growth and, at the very least, the IMO 2020 regulation will adversely impact dry bulk profitability through the first half of the year. Coronavirus has simply worsened the negative market outlook. Some demand has permanently been destroyed by the economic impact of the virus, and with market sentiment taking a turn for the worse, it seems likely that the dry bulk shipping industry will struggle to be on the profitability side for the coming year.

SCRUBBER EFFECTIVENESS

Scrubber reliability and their emissions-reducing efficiency were addressed in February during a technical seminar in which members of the Clean Shipping Alliance (CSA) 2020 reported on the installation and performance of their respective exhaust gas cleaning systems.

A shipowner panel comprising Grimaldi Group, Genco Shipping and Trading, and Spliethoff informed delegates that, despite initial installation problems, there had been little by way

of mechanical breakdown, corrosion or non-compliant operation. All panel members said that their exhaust gas cleaning system (EGCS) installations were removing substantially more sulphur emissions than the 0.50% required to comply with the global sulphur cap.

Arne Hubregtse, technical director and a member of the Spliethoff executive board, said: "We have not had any major problems; we don't see any corrosion issues or any breakdown issues. We are satisfied with our decision to install scrubbers and we look forward to operating these systems for a long time. From an environmental perspective, if you look at the total picture, scrubbers are still the best intermediate solution we have until a zero-emission propulsion solution is found."

Italy's Grimaldi Group, which operates about 100 EGCS-fitted vessels, reported similar success. Dario Bocchetti, head of Grimaldi's corporate energy saving and innovation department said the decision to install the system was to "go beyond the legislation". Grimaldi Group's scrubber installations are achieving about 90% up-time.

Genco Shipping and Trading, which has installed open-loop EGCS to 17 capesize bulkers, the most recent of which entered service in January, offered similar sentiments. Chief operating officer, Captain Robert Hughes, explained: "We've had no breakdowns, but a lot of that is due to good planning, planning for performance. You must do the mental heavy lifting ahead of time, choose the right supplier and identify where there could be some limitations and vulnerability. We haven't experienced any issues."

Hughes also emphasised the importance of preventative maintenance and told delegates that Genco has elected to use an extra engineer onboard as a risk mitigation tool.

PANAMA CHARGES

The Panama Canal Authority has imposed a "Freshwater Charge" on ships passing through the canal. The charge is set at $10,000 for any vessel over 125ft in length. There will also be a variable surcharge based on the level of the Gatun Lake at the time of transit. The International Chamber of Shipping (ICS) calculate this move will increase costs to ships passing through the Panama Canal by up to 15%.

The new Freshwater Charge comes ahead of significant changes in rates to the Panama Canal Authority 2020 Tolls Modification, which is due to become effective in April. This toll modification could see additional cost increases of up to 17% for ships passing through the Canal.

If the charges are combined, some ships passing through the Panama Canal could face price hikes of over 30%. The period between the announcement of the new Freshwater Charges and their date of implementation is only a month, giving little time to consider the decision and its potential effects.

All stakeholders were engaged in the decision-making process for the Toll modification last year, and the Panama Canal Authority at this time agreed to defer increases to allow shipowners to factor in the rise.

PIRACY CONCERNS CONTINUE

The International Chamber of Shipping (ICS) has expressed concern about the increasing number of attacks on ships' crews.

The number of ship's crew members being kidnapped in the Gulf of Guinea increased by more than 50% in 2019 and this year has begun with a further escalation of violence, armed robbery and kidnapping. The crisis is deepening – pirates are bolder and taking greater number of hostages. "Levels of violence are high and deaths have occurred both during attacks and during captivity of seafarers and military personnel. This is not business as usual. For example, 20 crew members were kidnapped from the *MT Duke* on 15 December last year with one of those crew members dying in captivity – this not acceptable," the ICS says.

"Over 90% of global kidnappings reported at sea took place in the Gulf of Guinea. It remains an uncomfortable fact that the vast majority of attacks are launched on shipping from within Nigerian territorial waters. We recognise that Nigeria is improving its maritime security capability through programmes such as the Deep Blue Project and ICS applauds and encourages these measures. However, now is the time to see real results in terms of action at sea and in the capture and prosecution of pirates.

"The international community must respond to this threat to the lives and wellbeing of seafarers by supporting Nigeria in bringing a swift resolution to this intolerable situation. Practical and effective assistance should be provided to coastal States to improve their maritime security in a meaningful way, and naval assets in the region need to be prepared to respond to piracy incidents," ICS says.

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EFFECTIVE AFTER-CARE

COMPANY NEWS

Port-Trade is an international trade and service company, based near Denmark's largest port, Fredericia – and has the entire Nordic region as its home market. Port-Trade supplies mobile equipment for cargo handling in ports and terminals, for example break bulk, heavy lifts, containers and bulk materials (feedstuffs, fertiliser, coal, bio-fuels, salt, sand and so on).

Established in 2003, Port-Trade provides a comprehensive range of cranes, grabs, container spreaders and bulk loading and stacking equipment from renowned manufacturers. Port-Trade also trades used equipment on a commission basis and has delivered pre-owned equipment to all Scandinavian markets, as well as customers outside Europe.

Full consultation with potential customers is an important part of the job, in order to reach the optimum solution. Selecting and servicing specialised equipment requires close co-operation between the user and the supplier. Therefore, we always cultivate mutually beneficial, long-term partnerships with our customers.

Meanwhile, our effective after sales service ensures that equipment keeps running smoothly for decades.

Port-Trade's experienced technicians provide round-the-clock service as an integral part of an international service team. Service is provided to customers in all Nordic countries and occasionally outside the home market area, when our particular knowledge is needed.

Effective after-sales service requires up-to-date knowledge and competence. Therefore, we keep abreast of technical developments through constant training of our employees.

The equipment we offer is complex, of high quality and supplied at competitive prices. We are often able to offer a choice of alternatives.

We are responsible for more than 40 cranes, from Iceland to South Sweden and Denmark. Many cranes are covered by long-term formal service contracts, assuring proper and timely inspections, service and assistance.

Our co-operation with Konecranes Gottwald, Düsseldorf, goes back more than 30 years. Gottwald manufactures high-quality mobile harbour cranes and is the only manufacturer of energy-efficient diesel electric mobile harbour cranes. Reliable and durable, they carry the lowest operating and capital cost.

Good examples in place are at Eimskip in Reykjavik and Faroe Ship in Torshavn, which handle containers and heavy cargo. Cranes regularly work more than 2,000 hours per year without backup,

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Another partner is E-Crane in Belgium, which manufactures Equilibrium cranes and is the undisputed world leader in that field. Fast and with low energy consumption, these cranes are dedicated to cycle duty.

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Ancillary equipment is supplied by various renowned manufacturers such as MRS Greifer, VDL, Stevenel and others.

Our continued success requires that we remain loyal, reliable and always act swiftly, to the benefit of our partners.

The office of Port-Trade is conveniently located, close to the E20 motorway exit 59 in Fredericia, with International Billund Airport less than one hour's drive away.

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Port-Trade.com

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NEW HORIZONS

Finding new markets is always important for equipment suppliers, but a number of companies have gone further afield with a slew of successful contracts

LIEBHERR PORTAL SLEWING CRANE TYPE LPS 420.

North Carolina Ports (NCP) has installed a new Liebherr portal slewing crane, type LPS 420. The authority will be using the crane for its terminal at the Port of Morehead City.

The special design of NCP's terminal required the crane to be able to operate at all quay edges of the rectangular terminal. To ensure this, the rail-mounted gantry crane was equipped with a special curve running gear. This allows the crane to travel through a 90° bend with an inner curve radius of 90 metres.

The Port of Morehead City is a breakbulk and bulk facility and is one of the deepest on the US East Coast. Therefore, the new LPS 420 is equipped as a multi-purpose crane and will be used by North Carolina Ports mainly for handling grain and fertiliser. It is also used for various project cargoes, including parts of wind turbines, trains and rails.

The crane was shipped fully assembled, which means no time-consuming assembly was required on site and the crane was ready for operation shortly after unloading.

According to Paul Cozza, NCP executive director: "The addition of the new LPS 420 rail-mounted gantry crane at the Port of Morehead City represents NCP's' commitment to investing in the future and long-term success of the port, its customers and the economy of North Carolina. The new crane will enable us to handle a diverse range of cargoes more efficiently and ultimately better meet customer demand."

RENTAL RISE

Another recent contract is an order by Goeyvaerts for two eco-efficient Konecranes Gottwald Model 7 mobile harbour cranes. One is destined to be delivered to the Netherlands port of Terneuzen and the second one will be delivered to the Port of Antwerp in mid-2020.

The two new cranes will be Konecranes Gottwald Model 7 mobile harbour cranes in the four-rope variant G HMK 7608 B. They are multi-purpose cranes that can lift up to 150 tons, and will be used by Goeyvaerts' customers to handle bulk materials and containers, as well as general and project cargo. Commissioning will be completed in Terneuzen in June and in Antwerp in September. The cranes will have built-in readiness for an external power supply, so conversion to electric operation will be easy when resources allow.

Goeyvaerts originally set up in business using cranes for barge handling on inland waterways. In 2006, it expanded its offering with harbour cranes and now operates in seven European ports: Antwerp, Ghent and Zeebrugge in Belgium, and Terneuzen, Vlissingen, Rotterdam and Amsterdam in the Netherlands.

"We already operate a large fleet of Konecranes Gottwald mobile harbour cranes, and we'll have a total of 20 with this new order," says Kevin Goeyvaerts, co-owner and COO of the company. "As rental cranes, they have to be adaptable to all kinds of applications and easy to move from one place to another. Konecranes has been able to provide us with highly mobile, flexible cranes that show impressive reliability, outstanding performance and eco-efficient drive systems."

"We value long-term relationships like this one that show the trust in our products and technical expertise to bring new business with established customers," says Alexandros Stogianidis, Benelux sales director for Konecranes Port Solutions. "Goeyvaerts' impressive fleet of 20 Konecranes Gottwald cranes underlines our efforts to ensure our cranes always meet customers' needs."

GEORGIA ORDER

Georgia Ports Authority (GPA) has also chosen Konecranes for the supply of two eco-efficient Konecranes Gottwald Model 6 mobile harbour cranes for its ocean terminal in the Port of Savannah.

After handover in July 2020, the cranes will improve the terminal's flexibility in handling containers and general cargo.

Historically, GPA's ocean terminal has been dedicated to breakbulk, heavy lift and RoRo, as well as some containerised cargo. With only one existing ship-to-shore (STS) crane available in this area of the port, GPA felt it was time to invest in some new equipment that would boost its ability to handle an ever-increasing volume of imports.

"We've been working with Konecranes for many years and its STS cranes and rubber-tyred gantry cranes have always given us outstanding performance," says Paul Harkness, GPA director of crane maintenance and repair.

"This time, we felt mobile harbour cranes would offer the right flexibility for our needs, and it was natural to turn to Konecranes once again."

Their two new cranes will be Konecranes Gottwald Model 6 Mobile Harbour Cranes in the G HMK 6507 variant. They can be used with vessels up to post-panamax class and have a maximum lifting capacity of 125 tons each.

Each crane is equipped with a hybrid drive, consisting of a diesel engine paired with ultra-capacitors to fully comply with EPA Tier 4 final regulations. They also have built-in readiness for an external power supply to help lower operating costs while reducing noise and exhaust emissions.

Initially, Konecranes will have a dedicated engineer on-site to familiarise GPA with the new type of equipment. Also included with the purchase is a specialised maintenance package to ensure fast access to spare parts when needed.

DANA DRIVES

Dana Incorporated has recently launched a new series of eight Spicer Torque-Hub® drives, expanding the company's offering of drive and motion technologies for crawler cranes and other large tracked vehicles.

With torque ratings from 80,000Nm up to 450,000Nm, the new drives offer flexible packaging and gear ratios to meet manufacturer preferences for tracked and wheeled applications.

Spicer Torque-Hub drives can be packaged with Brevini hydraulic pumps and motors to offer a solution that delivers superior power density, increased torque and efficiency at start-up, and smooth starts and stops.

The first three models in the new series of drives are currently available for field testing by original-equipment manufacturers, with production expected by the end of this year.

"The Torque-Hub brand has delivered performance, durability, and reliability to small- and medium-sized off-highway applications for nearly 50 years," says Aziz Aghili, president of Dana Off-Highway Drive and Motion Systems. "By extending Spicer Torque-Hub technology to the largest, most heavy-duty off-highway applications, Dana is ideally positioned to provide drive technologies across our customers' entire range of equipment."

Dana offers more than 100 versions of Spicer Torque-Hub drives, starting at 1,000Nm, for a broad spectrum of applications including self-propelled sprayers, mobile elevated work platforms, compact track loaders, and crawler cranes.

Spicer Torque-Hub drives can be packaged with high-performance electric motors from the Dana electrodynamic product portfolio to deliver integrated e-Hub systems with superior efficiency.

The new Spicer Torque-Hub track drives join Dana's large and growing portfolio of drive and motion technologies for manufacturers of tracked and wheeled cranes.

In 2018, Dana introduced a series of 13 high-performance Brevini winches for cranes and other applications with

lift capacities from 1.1 tons to 33 tons. Each winch in the series features a compact, high-speed piston motor for efficient operation.

Additionally, Dana supports the work functions of cranes with a wide selection of Brevini slew drives, hydraulic pumps and motors, and proportional directional valves.

For rough-terrain cranes, Dana engineers and manufactures advanced Spicer-branded transmissions, heavy-duty steer axles, and drive shafts that are fully customised with additional features and configuration options to achieve the highest levels of fuel efficiency and productivity.

SUCCESSFUL DELIVERY

Meanwhile, ZPMC has delivered four of the total 22 automatic RMGs to Long Beach LBCT Terminal in the US recently – its first foreign fully automatic terminal project. The terminal is the first fully automatic one in North America and one of the most highly automated in the world. ZPMC supplied all core equipment for the terminal, including 14 dual-lifting double-trolley STSs, 70 automatic RMGs and five automatic railway cranes.

The breakout of coronavirus caused difficulty in visa and flight cancellation for foreign projects. However, the delivery team completed the delivery of four automatic RMGs successfully in March with a much shorter delivery period, compared with the delivery of the previous equipment.

Meanwhile, ZPMC also delivered two intelligent straddle carriers developed independently to HWL CTN terminal in Sweden in March.

The contract on eight lifting-one-over-three intelligent straddle carriers was signed last year. The straddle carrier was a new key product developed for global automatic terminals, which was designed in module with diesel and battery hybrid power, driving a wheel-side synchronous motor and eight-wheel hydraulic independent steering system.

ZPMC's intelligent straddle carrier can be operated in manual or unmanned mode, with an easy switching mechanism between the two. To ensure the straddle carriers' operate safely with greater accuracy, safety systems and strategies have been adapted to ensure the equipment can be used for all-weather operations in various working conditions.

Two straddle carriers from the first batch were unloaded and delivered during the breakout of coronavirus in China, presenting a logistical challenge, which is likely to be mirrored by many other companies providing products and technology which require delivery to coronavirus infected areas.

BE PREPARED

Condition monitoring and predictive maintenance using high tech systems is becoming increasingly important as a means of cutting down on equipment failures, or preparing for them in advance.

MacGregor and Kongsberg Digital have announced a collaborative venture to verify the operational benefits of a high-quality, standardised and secure digital service solution for condition monitoring.

MacGregor, part of Cargotec, and Kongsberg Digital have entered into a agreement to test the interface of MacGregor's OnWatch Scout condition monitoring and predictive maintenance service within Kongsberg Digital's Vessel Insight data infrastructure solution.

The Vessel Insight solution enables high-quality data from interfaced systems to be captured and transmitted in a cost effective and secure manner to the Kongsberg Digital Kognifai platform.

The initial in-service testing and data analysis will be conducted with application to MacGregor cargo handling cranes installed on pilot merchant customer vessels.

"We are pleased to be extending our relationship with Kongsberg and working closely with Kongsberg Digital to accelerate the testing of digital solutions, focused on further enhancing critical system safety, availability, efficiency and sustainability," says Dennis Mol, vice president, digital and business transformation at MacGregor.

"It is essential for Kongsberg to work with world-class partners and we are therefore very pleased to be collaborating with MacGregor as we progress our common interest in accelerating the adoption of digital technology-enabled capabilities in support of the maritime industry becoming safer, more efficient and environmentally sustainable," says Vigleik Takle, senior vice president for maritime digital solutions at Kongsberg Digital.

OUTPERFORMING ALL OTHERS

COMPANY NEWS

Established in 1967, Negrini specialises in engineering and manufacturing a comprehensive range of grabs and buckets for rope machines and crawler mounted cranes. These products are well known for quality as well as for the accurate and skilful engineering work. Negrini supports clients by analysing the job to be done and, if required, adjusting the standard design of grabs and buckets to enhance their performances once in operation. Experience, skillful engineering, top production methods and materials guarantee that all Negrini products will outperform any other.

Negrini has three facilities of 750sq m, equipped with five overhead cranes. Its reputation is built on the professional ability and experience of its highly qualified working personnel, with the technical office always available to solve problems and provide solutions. Such extensive experience has been built up by studying case by case, job by job with skills and passion.

HIGH QUALITY

Choosing the right attachment is a major concern for any contractor and an important factor in guaranteeing the successful outcome of any job. Over the past 43 years, Negrini has engineered and manufactured attachments of the highest quality, such as mechanical and hydraulic clamshell buckets, cable clamshell buckets with radio controlled release, mechanical and hydraulic orange peel buckets, two or four rope scoop grabs, dragline grabs, trenching mechanical clamshell buckets and buckets for controlled digging depth with special valves to collect polluted mud from the sea or river bed.

Since its establishment, Negrini has engineered, manufactured and supplied contractors and port authorities with buckets for all those jobs and every one has been a success, earning Negrini its exceptional reputation.

Negrini's engineering concept is different because its engineers believe – and decades of experience show that they're right – that heavy buckets are not necessarily stronger; in fact, they prefer to combine high tensile steel such as Hardox with accurate engineering. Negrini buckets are therefore more resilient yet lightweight, therefore enhancing performance while saving significant amounts of energy.

Negrini's attachments are at work in many different parts of the world, from Italy to the US and from the Gulf Countries to Australia, making Negrini the brand of choice for many contractors. Performance and quality are the prime features that contractors want for the attachments that they will employ for their most demanding jobs.

IN-DEPTH PLANNING

When an enquiry comes in, its elements, including drawings, are studied and planned with the relevant head of department, in order to secure the established delivery time and the best use of resources. All technical data is entered into a CAD CAM electronic system and three-dimensional solid Cad, for better management and organisation.

All materials respect the technical specifications and drawings, and the company uses only reliable suppliers – it also has its own qualified welders. On demand, certificates and attestations can be provided.

RIGOROUS TESTING

Product testing is carried out by skilled workers who are also sensitive to the customer's need. All products are subject to constant control: both on arrival into the

factory and during the production phase; before shipment, the finished product is submitted to further control and testing, with the aim of appraising the effectiveness of the applied manufacturing process and guaranteeing a quality product to the client.

It's a well known fact that any good machine, be it cable crane or hydraulic excavator, will perform at its best only if the attachment used to work is well engineered and manufactured. A high-quality attachment will not only do a good job, but will also reduce the machine stress, allow for safer working and help save energy.

negrini.org

MACHINE, REPAIR & 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 30 m³ 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

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GENTLE TOUCH

Ensuring that products are not damaged in transit is an important consideration for specialist terminals handling commodities such as iron ore – proper handling will increase throughput

One company providing new innovations in handling is Schade Lagertechnik. Specialised technology produced by Schade guarantees that iron ore pellets are not damaged during handling. This is achieved by defining a 32° tilt for unloading material from wagons into bunkers. The boom of the stacker is structured to tip the fragile pellets with a drop of less than 1m.

Export capacity is also being expanded further by the port logistics company Ultramar at the Baltic Port of Ust-Luga, west of St Petersburg, which has ordered equipment for the outdoor stockyard of a new iron ore terminal from.

Early parts of the process involved consideration of the stockyard design, and the contract includes a reclaimer with a capacity of 2,500t/ph and a rail span of 46m, a rotating stacker at a capacity of 1,800t/ph and boom length of 37m, and a wagon tippler with a capacity of up to 1,800t/ph.

The Schade supply package also includes two hybrid apron feeders with a capacity of over 850t/ph each, which are being delivered by Aumund Fördertechnik.

The machines are to stack and reclaim iron ore pellets for Lebedinsky GOK, which operates the largest plant in Russia. Commissioning of the equipment at Ultramar is planned for the end of 2020 or beginning of 2021.

SCHADE WAGON TIPPLER IN PERU (© SCHADE)

A FLEXIBLE APPROACH

Emptying silos safely and reducing the dangers to personnel are critical to many bulk commodity operations. One technology available is that developed by Vibrafloor, which enables silos to be emptied without personnel being involved.

Jean-Patrick Corso, managing director of Vibrafloor, explains: "Whereas previously the spare parts were delivered on site and the modules assembled directly in the silo, our modules are pre-assembled in the factory and are simply placed in the installation.

"Our solutions allow complete and automatic emptying, which notably avoids the intervention of personnel inside the silos. Today, large industrial groups are increasingly aware of the safety aspect and seek to avoid accidents. Our solutions make sense, more than yesterday and less than tomorrow".

Vibrafloor's flexible steel plates utilise vibration to create waves that

Since 1908... Taking the best from the past to build the future.

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

Shiploader
for urea
600 t/h

1908
BEDESCHI
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sweep the products towards the outlets for reclaiming. The low-energy consumption technology guarantees an easy, risk-free transport process, with no clean-up needed and high reclaim rates. Because the process is a gentle one, it reduces the possibility of creating dust, which is an explosion risk in silos.

The Vibrafloor concept can be used in all types of bulk storage vessels as well as silos. Unlike most traditional reclaim systems for silos, which consume huge amounts of energy to drive heavy duty engineering, the Vibrafloor concept demonstrates the power and effectiveness of multiple low power modules collaborating to completely empty bulk storage of any size or shape.

The module delivered by Vibrafloor is based on vibration. After the destabilization of the residual slope by vibration, the product collapses in layers and follows the nominal slope. The typical Vibrafloor module consists of two major elements: a sheet metal plate and a vibrating motor.

This plate is connected to the frame by a membrane: this allows the plate to vibrate at a frequency of 25 hertz, without transmitting vibration to the frame. The modules can be installed in all types of equipment, whether concrete or metallic silos of cylindrical or rectangular shape.

STACKER SOLUTIONS

FAM, meanwhile, has supplied equipment for the Elektro Power Industry of Serbia (EPS) for the newly built Tamnava coal stockyard. The stockyard serves the mining field Tamnava West, which is the most important coal deposit in Serbia's Kolubara basin.

More than half of Serbia's electricity generation is dependent on coal-fired power plants supplied with domestic lignite. EPS, the largest state-owned energy utility company, is pursuing two important objectives with this project: securing a reliable supply of electricity as a prerequisite for a sustainable economic growth in Serbia and reducing the impact of power generation on the environment. These objectives can be achieved by installing the latest technology and related online monitoring systems.

FAM plans, designs, and manufactures turnkey plants and systems for mining, conveying, loading, and storing minerals, raw materials, and goods. In addition to engineering services, the company offers a complete range of manufacturing services as well as aftersales service.

The new contract includes a stacker with a stockpiling capacity of 5,000t/ph, two portal scrapers with a reclaiming capacity of 2,500t/ph each, crushing units and 17 belt conveyors for the internal transport of the coal streams.

The stockyard technology integrated into the stockpile management system yields reliable data about the quality, storage location and quantities of different coal streams during the stockpiling procedures. With the help of the stacker, the coal batches (with specific local and fluctuating properties) are placed in a targeted manner.

The power plant operations require an optimal mixing ratio therefore functions such as stockpile visualisation, order planning and reporting are also integrated in the stockpile management system. The FAM scrapers specifically identify and extract different coal qualities based on the specifications of the stockpile management system and provide homogenised coal streams for further processing with regard to their chemical and physical properties.

The project concerns the supply of four TAKRAF stackers, each with a capacity of 3,000t/h, and four large TAKRAF portal reclaimers, each with a capacity of 1,450t/h.

Tenova TAKRAF's office in Italy will assume overall responsibility for the successful conclusion of the contract and will provide overall technical coordination, while leveraging competencies from the various TAKRAF global competence centres.

Silvio Leoni, TAKRAF Italy managing director says: "Successful award of this project only serves to entrench Tenova TAKRAF as a leading global materials handling specialist. I am proud of the engagement and interaction of our global offices and the willingness of colleagues to find an effective solution to our client's specific requirements.

"We look forward to our equipment being commissioned and delivering above and beyond expectations."

TAKRAF IS SUPPLYING FOUR STACKERS, EACH WITH A CAPACITY OF 3,000 T/H, AND FOUR LARGE TAKRAF PORTAL RECLAIMERS, EACH WITH A CAPACITY OF 1,450 T/H.

A CRITICAL LINK IN THE CHAIN

COMPANY NEWS

Telestack recently installed a TB58 Export Radial Telescopic Shiploader to Oxxean in Chile, which is proving a critical part of the logistics chain in Chincui Port, located in the developing industrial zone of Puerto Montt. The unit is currently fed directly from a woodchip stockyard and is used to load woodchips on to Panamax vessels in Chincui Port at loading rates of 600tph @ 0.3tonnes m^3, destined for China where they will be used to feed power stations.

Oxxean Puerto Chincui was formed to maximise the unloading and loading of solid bulks in the region. At the start of this project, Oxxean's primary objective was to achieve an efficient woodchip export business. Telestack's solution, which was custom designed specific to the parameters of its existing jetty, meant that Oxxean could utilise the current infrastructure without major capital investment, planning approval or civil construction. The immediate savings achieved by selecting Telestack's solution, compared to a fixed infrastructure or mobile harbour crane, meant that Oxxean could redeploy its capital investment in other areas of its operation. The lower cost per tonne also ensured that Oxxean maximised on efficiency.

The flexibility of the Telestack unit also future proofed the equipment, meaning that the quay is now more flexible when handling any dry bulk and can be adapted quickly and efficiently to load different commodities. Furthermore, the flexibility to use the unit in any type of shiploading, unloading or stacking means that the TB58 unit can be maximised along any part of the logistics chain. The investment in the TB58 Telescopic Shiploader also reduced the timeframe of the project significantly, with the system fully operational in six-seven months from order.

A key requirement for Oxxean when considering their shiploading solution was to minimise the capital investment and to utilise the existing jetty as much as possible. The existing finger jetty was limited in size so it was important that the TB58 Telescopic Shiploader was capable of operating within these restricted parameters. The capabilities of the equipment allows the operator to have ultimate flexibility while shiploading and when in storage position, compared to fixed-length shiploaders, as minimal space is needed for storage. The site is used as a multi-cargo jetty for shiploading, ship unloading and breakbulk so the mobility of the shiploader was a key consideration as it was important that the shiploader could be moved easily off the jetty when required.

International sales manager for Telestack, Carl Donnelly explains: "Telestack has been providing solutions for more than 35 years and we are experienced in working within the parameters of existing infrastructures. Mobile equipment often helps reduce initial capital expenditure as they are typically significantly cheaper to purchase and operate than mobile harbour cranes and stationary conveyor

systems, without the civil construction requirement. The mobile equipment also means there are typically significantly lower civil engineering and infrastructure costs, and it can easily link into existing material handling systems. The customer can very quickly be generating revenue streams with this mobile rapid deployment solution, which was critical to the Oxxean Project in Chile. Typically designed to not require any on-site welding, a standard shiploading unit can be transported in several 40ft containers and operational within a very short space of time — all with limited or no planning requirements or restrictions as found with stationary solutions.

"Moreover," Donnelly continues, "the operating costs are significantly less than traditional systems as mobile solutions are continuously loading as opposed to grabs/wheel loaders/trucks coming back empty in the cycle. The ease of use means that all machines are simple to operate, maintain and troubleshoot as there are no complicated electrics/electronics to manage and hydraulics can be kept to a minimum. Overall, this has been a very successful project both for Telestack and the customer Oxxean and we look forward to developing this relationship further in Chile and South America."

The radial and telescopic features of the mobile Telestack solution allowed the operator to easily and safely work within the constraints of the site. Fitted with a Telestack telescopic Telechute with 360° trimmer, the radial telescopic features allows for trimming of the hold. Each Telestack unit is custom-designed and as part of the design brief, will take into consideration the maximum free-board heights, beam and quayside widths, production rates and relevant vessel characteristics, as well as commodity composition.

The design in this case also had to consider the flow-ability of the product and Telestack's direct loading solution ensured that the material could be transferred from stockyard to vessel as efficiently as possible, eliminating the double handling of material and maximising the integrity of the product.

The TB58 Telescopic shiploader has an extended 58m-length conveyor, which allows the unit to reach the centre of each of the holds easily. The integration of an 8m telescopic discharge chute with 360° trimmer increases flexibility during the trimming process. The dust covers on the outer and inner conveyors also control any dust and contributes to the environmental benefits.

This system is fully supported by Telestack's long-term dealer, Komatsu Chile. Komatsu Chile (KCH) is the local unit of Japanese mining and construction equipment manufacturer Komatsu Limited. The company provides equipment, services and parts for the construction, mining and forestry industries. Komatsu Chile is an established long-term partner of Telestack's that provides excellent pre-sale and ongoing aftersales support of all Telestack systems in Chile. Telestack understands and appreciates the importance of local partnerships in business to create a successful brand: reputation is critical in any business and our dealers assist us in developing trust with our clients. The integrity of all three stakeholders is central to past and future success.

Telestack, specialists in the complete design, manufacture, installation and commissioning of mobile, bulk material handling systems, has a global proven record in a range of applications, including mining and quarrying, stockyard management, ports and inland terminals, power stations, rail yards, steel mills, cement kilns and many other bulk material handling industries. Telestack has matured into two clear divisions — Telestack Aggregates and Mining and Telestack Ports and Inland Terminals, and offers a range of solutions and reference sites along the logistics chain from pit to port, pit to plant and port to plant.

For more information, visit:
telestack.com

WITH YOU EVERY STEP OF THE WAY

COMPANY NEWS

When it comes to port logistics, Bedeschi leads the way, supplying equipment for shiploading and unloading, container handling and storage inside the terminal. From project execution to full operation, it is there every step of the way, from feasibility studies and basic design to assembly, installation and start-up, as well as when required while the plant is in operation.

Bedeschi provides tailormade solutions using products rated the best in the market in terms of energy consumption, operational costs and pollution control.

TRAINING AND ADVICE

For Cereal Docks in Italy, for example, Bedeschi supplied a rail-mounted continuous mechanical ship unloader for soya beans. The equipment, which has a capacity of 800 tonnes/hour, can unload ships up to Panamax size and has the latest technological tools and facilities for perfect machining and testing.

The ship unloader was delivered fully assembled on a plug and play basis directly to its final working position, minimising assembly and commissioning time at the site and therefore any inconvenience to the customer.

At the Port of Chernomorsk in the Ukraine, Bedeschi supplied two slewing shiploaders to Kernel LLC, one of the largest Ukrainian producers and exporters of sunflower oil and supplier of agricultural products to the world market. The equipment has a capacity of 2,000 tonnes/hour for the handling of wheat, corn, barley, soy and flour, and includes two closed belt conveyors with rubber belts that cover a distance of 280m, as well as two trippers to feed the shiploaders.

All the machines are equipped with a dust containment system and have three dedicated filters in different strategic locations on board, as well as a telescopic chute that allows equal distribution of the material, covering the complete surface of the vessels' holds.

These are just a small sample of the more than 1,500 successful installations worldwide that Bedeschi has undertaken, illustrating the company's competence in creating tailormade and environmentally friendly solutions for any type of material, from coal to grain.

With an experienced team of engineers and sales agents working across the globe, Bedeschi is top of the list when it comes to innovative equipment and support.

For more information, please visit: bedeschi.com

CEREAL DOCKS, MARGHERA (VENICE, ITALY)

KERNELL LLC, PORT OF CHERNOMORSK (UKRAINE)MARGHERA (VENICE, ITALY)

DUSTING DOWN

Ensuring that goods can be safely loaded and unloaded is key, and unloading commodities such as coal with the lowest dust emissions possible is vital in populous areas

COAL HANDLING FACILITIES

"Seaside resorts and large coal handling facilities are not natural companions, but busy ports, space constraints and growing populations often require them to be, and when they are, some of the strictest environmental regulations come into force," says Per Wahlström, Bruks Siwertell contract manager.

Bruks Siwertell has recently completed the delivery of two high-capacity Siwertell 790 D-type unloaders. Ordered to ensure lowest dust emissions and spillage-free coal handling, they now operate as a critical part of a large expansion project at the 3,800MW coal-fired Suizhong Power Plant in Liaoning, China.

Located on the Bohai Sea, Liaoning is the most populous province in the region and its seaside resorts are particularly popular holiday destinations for people living in Beijing.

"No spillage or dust emissions from handling coal were allowed," continues Wahlström. "This is where Bruks Siwertell came in. The power facility approached us to see if our enclosed unloaders would meet the standards required, and they do."

The initial contract was signed with Suizhong Power Generation and Shenhua in 2016. Since then, Shenhua

has merged with another large Chinese energy company, Guodian, to form China Energy.

"Suizhong needed to increase its annual intake of coal to around six million metric tons in the most environmentally friendly way possible," Wahlström explains. "Previously, the coal was handled with grab cranes and, in comparison, our unloaders offered significantly higher rates of through-ship efficiency, environmental protection, shorter turnaround times for vessels, and cost savings."

The two units ensure totally enclosed, dust-free coal handling and each offer a continuous rated capacity of 1,500t/h, serving vessels up to 50,000dwt. They were delivered at the end of 2019 to accommodate the owner's extended construction schedule and were transported fully assembled on a barge from Nantong.

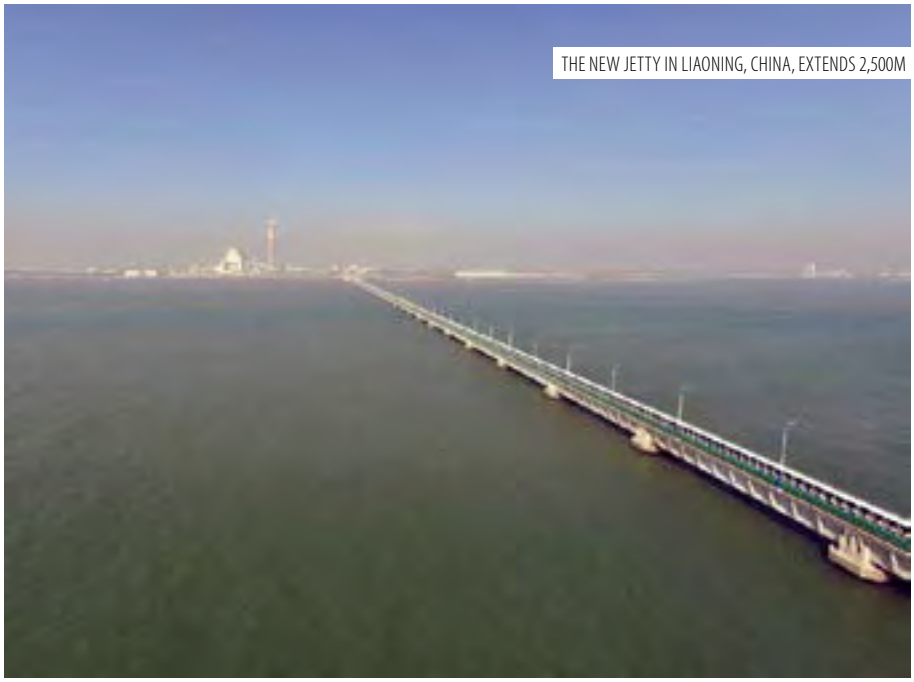
"The most critical phases were loading and unloading the completely assembled units from the barge on to the power station's new jetty using a floating crane. Safety precautions, effective preparation and good communication involving all parties are crucial in these operations," he notes.

The jetty extends 2,500m out into the Bohai Sea and accommodates the unloaders on a 300m-berth, along with transfer towers and new conveyors.

"The customer was very happy to receive the equipment and eager to put it into use," says Wahlström. "The unloaders have now been in service for a few months and early feedback on their performance is positive.

Siwertell was also involved in ABTO's conference in Amsterdam last October, when Peter Goransson, sales manager and senior adviser at Siwertell, gave a presentation on ways to improve stevedores' working conditions in ports. He outlined the risks and dangers to stevedores, as well as some of the safety systems that can be used for ship uploaders.

These included systems for handling problematic products, as well as operator-assisting systems that



THE NEW JETTY IN LIAONING, CHINA, EXTENDS 2,500M

improved safety, incorporating explosion venting devices and internal bearing temperature monitoring systems to guard against a pressure build-up that might cause an explosion. With this, thermal imaging incorporated in the machinery is linked to an alarm system, after which follows a shut down sequence. The optical sensor works with the pressure sensor.

Other arrangements to protect personnel include a gate to ensure that staff cannot be on the machine while it is operating. There is a switch fitted to the gate which will stop the machine if someone passes it. As unloading systems could be operating on a 24/7 basis, operator's cabins can be fitted with a very long cabin arm offering a view of the cargo hold.

COLLISION CONTROL

One of the major risks that shiploaders face is that of collision, systems manufacturer iSAM says, and it has produced new technology to deal with the problem.

Industry bulk export and import terminals typically have extreme levels of equipment utilisation. At most locations, the equipment is utilised 24/7, when minutes of downtime create a considerable impact on the profit margin, the company explains in a briefing note. A major risk is mechanical breakdown, with a common scenario being damaged to a shiploader caused by a collision .

Most shiploaders are equipped with simple sensor systems such as microwave barriers or pull-cords along the boom to prevent collisions between the boom structure and a possible obstruction in the work area of the machine. These systems are designed to stop critical movements, but not to predict collisions or to alarm an operator before a collision happens.

"For both the manual operation and, specifically, for a fully automated operation of a shiploader, it is crucial for the automation system to 'see' in advance a collision hazard and to be able to calculate future machine movements to prevent collisions," the company says. "Therefore, sensor and evaluation systems must be implemented that:

- work reliably in an industrial 24/7 all-weather production environment
- provide the required accuracy to detect typical obstructions such as light towers, radar masts, etc.
- require minimal maintenance
- perform under critical environmental conditions."

The company has developed and implemented a sensor and evaluation system that enables a shiploader control system to obtain complete information about its own position and also of all other objects in the vicinity, the company explains. This allows for the effective protection of the shiploader boom in manual mode. It also creates the foundation for remote or an even fully automated operation.

To do so, the system integrates data from three main sensor components:

- 3D laser scanning system for real-time boom protection
- 3D laser scanning system for ship modelling
- RTK-GPS system for machine positioning.

"The 3D laser system for real-time boom protection scans an area enclosing the boom structure to reliably detect deck obstructions such as cranes, light poles, the ship's bridge or open butterfly hatches posing a collision hazard," the company says.

"The system uses defined slow-down and final-stop zones around the boom. For each zone, it provides the distance to the closest detected collision hazard, as well as a stop signal in case the obstruction violates the defined final-stop zone to the machine PLC.

"In addition to the collision protection described above, a three-dimensional ship model – calculated from laser scan data and geo-referenced by RTK-GPS position measurement – is built and continuously updated. It allows configuring additional zones for either protecting the boom or individually moving structures such as an operator cabin or a telescopic chute. Should the machine be equipped with a shuttle, the related zones are automatically adjusted to match the actual boom length.

"The system provides all necessary data to the machine control system to ensure a safe stop of the shiploader before a collision occurs. A standard industrial PC can be used to display the 3D model in the operator cabin or a remote control room. The iSAM visualisation client provides a number of different views, which highlight collision hazards or indicate the precise position of the hatches, for example."

The iSAM advanced anti-collision system can be upgraded to facilitate fully automated shiploading. This system uses the 3D ship model and the 3D boom protection systems and therefore makes it possible not only to control the entire loading process from a remote location, but also provide an unprecedented level of automation, enabling one operator to easily control several shiploaders from a central control room.

BEDESCHI BOOST

Bedeschi has recently signed a new contract for the Israeli port of Ashdod. The contract is with the EPC contractor Lesico for the supply of two conveyors with Vackem technology.

In the past few years, Bedeschi has supplied different equipment for grain handling to Ashdod Port. This includes three eco-hoppers and a continuous ship unloader. The new conveyors will receive grain coming from Bedeschi's continous ship unloader.

In the grain sector, Bedeschi has been working on the design, production and supply of machines and integrated systems for grain handling and storage, including ship loaders and unloaders, belt conveyors, pipe conveyors, enclosed conveyors and any other ancillary equipment.

A new project in Latvia, at Riga Bulk Terminal is for a travelling, slewing and luffing ship loader, performing eco-friendly loading of grain at 1,200t/h into vessels up to 60,000dwt.

Last year, the company was awarded a contract for the supply of cargo handling equipment for transshipment purposes. The project entails discharging of iron ore pellets from ocean-going vessels up to Capesize, into barges at a designated offshore anchorage.

The operator has been commissioned to provide offshore transshipment and transportation services for a major steel mill, which imports iron ore pellets as raw material for its plant.

The cargo from the ocean-going vessels will be discharged by using a panamax vessel, with four side-mounted Liebherr cranes, in combination with cargo handling equipment comprising two double hoppers, four variable speed drive feeder belts, conveyors and a barge loader of 3000t/ph capacity, for discharging into barges.

The barges will, in turn, be employed to transport the iron ore pellets to the jetty and self-discharge into shore receiving hoppers. The project is due to be completed later this year.

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.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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, visit:
neuero.de


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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, please visit: borghiaxles.com

POWER POINTS

Although some countries are trying to reduce their dependence on coal power, this is certainly not the case in a number of countries, where coal plays a key role in power generation

The World Coal Association (WCA) has stressed the important role that coal plays in providing stable baseload power supply, pointing to the case of India as a result.

While energy from renewable sources has increased in the past few years, in India grids still need baseload power, which is often provided by coal. "The growth of energy demand in India is quite staggering. Its economy is predicted to continue to grow at an annual average rate of 6.5% through to 2040 and as a result, energy demand is projected to triple over that period," the WCA says.

"Renewables alone cannot meet these needs. This is why 40 GW of coal-fired capacity is currently under construction. Further capacity additions are planned to meet increasing demand, including peak loads, and to ensure reliability with more dispatchable capacity."

The Indian government has also recently announced the intention to increase national coal capacity from 194.44 to 238 GW by 2027.

Coal is the dominant source of electricity in India – in 2018, it accounted for 74% of supply and will still represent almost half of electricity generation in 2040, the association says.

Despite the surge in renewables, both electricity demand and generation from coal in India are expected to grow significantly over the next 25 years.

Through the government's 12th Five-Year Plan, India is seeking to upgrade its coal fleet and retire the most inefficient coal-power stations. Its first advanced ultra-supercritical (AUSC) facility, located at the Sipat coal-fired power station in the state of Chhattisgarh, is going to be constructed, with an efficiency of 46%.

India is also home to an unsubsidised, fully commercial carbon capture, use and storage (CCUS) facility developed by Carbon Clean Solutions that has operated since 2015 in the port of Tuticorin.

"In India, as with many other emerging economies, coal's role is as a fuel of change. In contrast to public perception, innovation has delivered a range of solutions to efficiency and environmental issues. A 1% increase in LHV efficiency in coal plants can deliver a 2-3% decrease in CO_2 emissions, while CCUS is technically capable of capturing up to 100% of emissions," says WCA.

"By using clean coal technologies for competitive and flexible power generation over the coming decades, modern coal plants can support meeting both economic priorities and long-term climate targets."

PULLY POWER

US-based Superior Industries has launched a brand new conveyor drum pulley known as the Prime Mine Duty Pulley, a drum style conveyor pulley that is designed and built with a solid steel end disc, which eliminates welding at the hub of the pulley. Applications for the new pulley include aggregate

and mine duty conveyors using fabric belts, which start and stop under full loads frequently.

"Our Prime Mine Duty Pulley has many of the same design characteristics of Mine Duty 2.0 and Super Duty drum pulleys, but its optimised design yields a lower weight," says Alan Schmidgall, a vice president with Superior. "That means we can offer a more economically-friendly option and include many of the features our customers said they require."

The Prime Mine Duty Pulley is one of four standard, pre-engineered conveyor pulley models available from Superior. Other designs include CEMA, Mine Duty 2.0 and Super Duty. Superior offers custom-engineered pulleys from its Core Systems® Design team.

AUTOMATION INCREASE

Analyst Technavio has been monitoring the global coal handling equipment market in the mining industry since 2014 and the market is poised to grow by US$2.06bn during 2019-2023, progressing at a compound annual growth rate of nearly 4% during the forecast period. The increasing use of automation in coal mining and electrification of mining equipment are factors anticipated to boost the growth of the market.

"The adoption of automation in the coal mining industry is increasing due to the emergence of substitutes for coal and growing competitiveness in the renewable energy sector," the company says.

"The employment of automation makes the mining process more productive and efficient. It minimises the need for underground coal mine workers by deploying automated equipment in difficult-to-access and unsafe areas.

"The use of automated system in coal mines is contributing to the increased coal production in the US, which increased by almost 10% over the past year. Thus, the increasing use of automation in coal mining is expected to drive market growth during the forecast period."

PORT QASIM IMPROVEMENT

In June last year, a Supreme Court ruling moved the handling of imported coal to Port Qasim in Pakistan away from Karachi for environmental and health reasons.

Port Qasim is now using a dedicated dirty cargo handling facility at the port to abide by the court ruling, with Pakistan International Bulk Terminal (PIBT) to handle all the imports of coal into the country. "PIBT's existing terminal facilities of handling and storage are already operating at international standards of efficiency and pollution control," chief executive, PIBT, Sharique Azim Siddiqui has said.

PIBT has developed an environmental management plan (EMP), which includes dust emission control, noise pollution control, wastewater management, solid waste management, dredge material disposal management and biodiversity conservation and sustainable natural resources management.

These aspects of the EMP and the related regulations have been implemented over the course of construction of the terminal and are monitored and updated regularly.

Pakistan Railways has plans for a rail track to facilitate coal transportation at Port Qasim, to cater for increased use of coal going forward. Railway lines are part of the master planning of Port Qasim, while transportation of coal through Pakistan Railways would help it become a profitable entity.

RUSSIA'S COAL BOOST

Vostochny Port JSC, operator of Russia's largest dedicated terminal handled 25.5m tonnes of coal, up 5.2% or 1.25m tonnes on last year.

According to the company, the growth was driven by the launching of Phase 3 of Vostochny Port's specialised coal terminal in September 2019, which increased the terminal's total capacity to 50-55m tonnes per year.

In 2019, Vostochny Port handled 552 dry bulk cargo carriers of different capacity, including 23 capesize ships and 333 panamax and post-panamax vessels, 1.4 times more than in 2018. Unloading of open-top railcars exceeded 349,000 units, up 7.5% compared with 2018 (325,000 units), in part attributed to the launching of the new empty railcars departure facility under the Phase 3 project. Yard B at Nakhodka-Vostochnaya station was built by Vostochny Port and handed over to Russian Railways for servicing all companies in the Bay of Vrangel.

The company exported coal to South Korea (31%), Japan (29.2%), Taiwan (17.5%) and China (5.4%), with India also showing an interest in exporting Russia's coking coal.

The country's share in Vostochny Port's exports increased from 6.5% in 2018 to 10.3% in 2019. Vostochny Port is among the most competitive coal terminals in the Far East with its advantageous geographic location and equipment, hi-tech transshipment of coal and loading of large-capacity ships, as well as the highest level of industrial ecology among coal ports of Russia.

The Phase 3 project was a private investment enterprise costing more than RUB 40bn and implemented through public private partnership without involving state financing. It has generated more than 600 new high skill jobs. By 2026, the project will ensure a total of RUB 25bn of tax payments that will give a powerful impetus to the social and economic development of the Primorsky Territory.

PERFECT TIMING

COMPANY NEWS

Since the 1980s, Asean Bintulu Fertilizer (ABF), a subsidiary of leading southeast Asian chemical manufacturer Petronas Chemicals Group Berhad, has had a production location for carbamide fertiliser in the Malaysian coastal city of Bintulu (Sarawak) on the island of Borneo. To meet growing demands, Beumer Group was contracted to modernise and increase the performance of the plant between the longitudinal stockyard and the ship loading system.

Carbamide, also known as urea, is currently the most widely used nitrogen fertiliser in agricultural industries worldwide, mainly due to its comparably low costs. Demand is continuously increasing due to the growing global population. Asean Bintulu Fertilizer's manufacturing plant in Bintulu is one of the biggest of its kind in Asia.

As well as being one of the largest manufacturers of chemical products in Southeast Asia, Petronas Chemicals Group (PCG), is Malaysia's leading producer of urea. Formed of 25 companies, the group offers a wide range of products such as olefins, polymers, methanol and fertilisers, which are urea-based. Its customers are based in about 30 different countries, with its most important markets in Malaysia, China, India, Thailand, Indonesia, Japan, South Korea, Taiwan, the Philippines, Vietnam, Singapore, Australia and New Zealand.

To meet the growing demand for urea, Asean Bintulu had to increase the capacity of its export facilities. Beumer Group was awarded the contract as a general contractor, in a consortium with PBJV Group Sdn Bhd from Malaysia, which took over the assembly of the system. The service provider from Malaysia is responsible for the transport and installation of onshore and offshore pipelines, in addition to other activities. The company also equips ships in the oil and gas industries.

"This order was a brownfield project," explains Heinrich Beintmann, senior project manager at Beumer Group. "This means that we had to integrate our new systems into the existing ones in a way that ensured that the material flow from the longitudinal stockyard to the ship was not interrupted."

Another requirement was that the already available hardware and software components from third-party suppliers needed to be updated to match the increased performance.

"The maintenance of the entire system will become a lot easier thanks to this modernisation because all components are on the same technical standard," says Beintmann.

Beumer Group, in co-operation with PBJV Group, developed a technical solution that they presented to ABF, together with a streamlined schedule that met all the required milestones.

For more information, visit: www.beumer.com

THE PORTAL RECLAIMER REMOVES THE BULK MATERIAL IN LAYERS FROM THE SIDE SLOPES AND TRANSPORTS IT THROUGH A PRIMARY CRUSHER TO A BELT CONVEYOR AT A CAPACITY OF 600 T/H.

Beumer Group is an international leader in the manufacture of intralogistics systems for conveying, loading, palletising, packaging, sorting and distribution. With 4,500 employees worldwide, Beumer Group has annual sales of about €950m. Beumer Group and its companies and sales agencies provide their customers with high-quality system solutions and an extensive customer support network around the globe and across a wide range of industries, including bulk materials and piece goods, food/non-food, construction, mail order, post and airport baggage handling.

BEUMERGROUP

HEAVY DUTIES

China leads the way in cement production – but all this is set to change as India becomes an ever-stronger industry player, as marine advisor Basil M Karatzas explains

LOADING CEMENT

With the world economy on a path to slow but sustainable growth, at least until recently, industrial production was scoring unimpressive but steady growth of a couple of percentage points, on average, in the past few years. Strongly correlated to industrial growth, production and trade of cement has been growing in line with industrial growth expectations. Nothing surprising here, but as the saying goes, the devil is in the details.

At the timing of this writing, COVID-19 is in full swing with an undetermined yet possible scenario of cost, both in terms of loss of human life and financial cost, and also for timing expectations. It's a crisis without a modern precedent and a crisis very different to anything else experienced in modern history. All medical considerations are beyond the purview of this article, as our focus is strictly on commercial and financial terms: besides the temporary "noise" in the market, to be expected, such as big fluctuations in the financial markets and disruptions with port operations, the most likely scenario is for one or two relatively bad quarters in economic growth worldwide, and then back to a more normalised positive trend.

There is a (small hopefully) chance of a "black swan" event for a catastrophic

scenario and an extensive world recession, but likely, and hopefully, higher probability events and scenarios have to be considered before then. Prior to the COVID-19 outbreak, general expectations for 2020 was for approximately 2% growth for cement seaborne trade, slightly lower than in 2019, which stood closer to 2.7%. Such growth is in line with industrial growth and also with trends in other commodities utilised and correlated to industrial growth, such as the iron ore trade – utilised for steel production.

There are certain considerations for the production, shipment and consumption of cement; just like iron ore, cement is a very heavy commodity that "weights out before it cubes out", as its specific gravity is almost triple of the gravity of the water (same volumes, cement weights three times as much as water). And, cement, which actually is made of gypsum and clinker (when limestone and clay ground to fine powder ("raw meal") and cooked at a sintering temperature in a cement kiln at 1,450 °C to produce clinker) requires heavy raw materials for its production.

Thus, cement plants are built in close proximity to quarries, where there is also cheap energy and labour and, not surprisingly, tolerance for noise and pollution. On the other hand, cement is mostly used in developed and developing countries, which also typically happen to have low pollution standards.

As one would expect, China in the past decade has strongly grown its cement production capacity, but also demand and, at present, the country produces almost 53% of the world's cement (2018 data) by some estimates, or approximately 2.2bn metric tons. India is a distant second with only 8% of the world market share, or 337m metric tons. According to the World Cement Association, China's world market share is expected to drop to 35% by 2030, while India's market share to double to 16%.

Only a small portion of cement is transported, especially internationally, as bagged cement, and such shipment can take place on any type of dry bulk vessel (as long as cargo holds can be kept dry and weather sealed). However, predominantly, the seaborne transport of "cement" is either as clinker or cement, in bulk. Clinker could be transported by generic dry bulk vessels, although there is a strong preference for self-unloading vessels fitted with tunnel conveyor belt and discharge boom (clinker has the form of small balls up to 25mm in diameter). Cement, given its content in gypsum, is a dusty material and in finer particles than clinker; either specialised self-unloading vessels specifically fitted for the cement trade can be employed for the seaborne trade, or even more efficiently, dedicated cement carrier vessels with pneumatic pumps can be used for the trade. For appraisers and surveyors like ourselves, having boarded a cement carrier during loading or discharge operations, the experience is unique: first of all, there are only a handful such vessels worldwide, and then, a great deal of the weather deck is occupied by noise and dust dumpers, as pneumatic pumps discharging thousands of tons per hour of dusty material can easily become a deafening experience.

There are 145 dedicated cement carrier vessels worldwide, out of a 36,000 commercial world fleet, which by itself, indicates the niche-ness of the market. 65 of these cement carrier vessels are approximately 5,000dwt, and generally employed for localised trades; only 18 of these dedicated cement vessels are larger than 20,000 (with the largest being 34,000dwt); for comparison, the average capesize vessel transporting iron ore from Brazil to China is 180,000dwt, almost five times the size of the largest cement carrier vessel. As one would expect, the secondary market for the sale and purchase of cement carriers is very thin, mostly for smaller and older vessels, but we have seen several inquiries of large cement carriers, of 20,000dwt, as demand of cement in developed countries, such as the US, cannot be filled by local production and expanding production capacity locally is not always feasible, for both economic realities and also environmental regulations.

The US leads the world market with more than 15m metric tons of cement imports in 2018, with Philippines, China (yes, China, despite their having a commending share in cement production), Singapore and Australia, rounding the top five world importers. Vietnam, Thailand, Turkey, Germany and Canada are world's top five cement exporters. The worldwide distribution of top importers and exporters for cement is indicative of the demand for bigger sized vessels at the expense of smaller vessels employed in localised markets.

Cement is an IMSBC Code C type of cargo, with hazards listed as a) nuisance dust and b) skin irritant, and precautions for shipment: "(1) Cargo is known to be non-combustible or has low fire risk. However, it may shift when aerated (ie when mixed with air). (2) Vessel should be specially designed as a cement carrier and shore equipment fitted with special dust control equipment, otherwise cement dust can pose a major concern during loading/ discharging operations. (3) Precautions shall be taken to ensure that machinery, equipment and accommodation spaces are protected from dust. (4) Bilge wells of cargo spaces shall be protected from cargo ingress. (5) Personnel shall wear goggles or other equivalent dust eye-protection and dust filter masks as well as protective clothing, as necessary, during loading and discharging operations in order to avoid exposure to the cargo's dust. (6) Clean and dry bilge wells. Cover as appropriate in order to avoid cargo ingress. Non-IMSBC Code information: to cover fine cargoes when working with cement into or from the same compartment etc."

Therefore, seaborne shipment of cement is not a hazard-less occupation – if ever there was one when it comes to being a seafarer and crossing the world's oceans – but again, we have met captains and chief mates that have spent decades manning dedicated cement carriers and they tend to be fascinated with the cargo and its unique properties, and the relative predictability of trade patterns and familiar docks and ports.

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CIRCULAR MOTION

As countries and companies become increasingly conscious of the need to cut down on plastic waste, the bagging industry has been doing its bit to address the problem

With the recycling of plastics becoming increasingly important, Starlinger has introduced a new product based on the concept of "circular packaging". This aims to end unnecessary waste in the product lifecycle of big bags (FIBCs)made from polypropylene fabric. FIBCs are omnipresent in logistics as a lightweight and economic type of packaging for free-flowing bulk goods. Made predominantly from polypropylene, they show a CO^2 balance per 1,000 litres of transported goods that is far below that of rigid containers such as drums or octabins.

Starlinger says that "even though they are particularly well suited to recycling because of their large size and weight, 75% of all FIBCs used worldwide are designed for single use and their disposal via landfill or incineration causes serious environmental damage with high CO^2 impact. Of those FIBCs that are recycled, a large part is exported into non-EU countries and turned into products of lower value. With the circular packaging concept, we aim to end this unnecessary waste of raw materials and create a circular economy in which big bags become big bags once more."

Starlinger believes the concept is unique as it represents a holistic approach that involves and documents various stages of the FIBC lifecycle, such as manufacturing, usage, recovery, washing and recycling. The challenge in the recycling of FIBCs is that they come in different forms: with or without polyethylene liner, coated or uncoated, and with loops and seams consisting of different kinds of plastic.

"Therefore, the first step in creating a circular economy for big bags is 'design for recycling'," Starlinger says. "This means that the big bags are designed in such a way that they can easily be recycled and processed into regranulate of high quality. The second important step is creating a material passport in which the entire life cycle of the big bags is documented, from the first filling and the filled product up to the materials used in big bag production. This traceability facilitates collection and reprocessing and thus increases the quality of the material to be recycled."

In co-operation with renowned big bag manufacturers Louis Blockx and LC Packaging, Starlinger has simulated this closed loop and produced new big bags with a high content of recycled polypropylene. Tests show that these big bags show the same quality as those made from virgin material in terms of tensile strength, weight and safety factor.

Starlinger is in the running for the Plastics Recycling Awards Europe, which has now been postponed until October. Winners will be announced during the Plastics Recycling Show Europe taking place at the RAI Amsterdam.

HANDS-OFF HANDLING

Meanwhile, Camcorp has been advocating bulk bag unloader systems that the company says eliminate the need of handling 25-50-pound paper bags and the waste associated with material remaining in the bag and bag removal. An operator can position bulk bags filled with dry-bulk ingredients by using a fork truck and lifting carriage or by an electric hoist with motorised trolley mounted on the channel beam.

The dry-bulk ingredient can be weighed and transferred to the terminal location by pressure or vacuum convey system. For optimal efficiency, when unloading dusty products, the bulk bag frame can be integrated with a dust filter and exhaust fan. The collected dust can be returned to the containment hopper or to a dust drum.

Camcorp, which specialises in dust collection and bulk material handling equipment, became a member of the Scheuch Group in 2016. The group is one of the leading global players in the area of air and environmental

technology, providing air pollution control technology around extraction, de-dusting, conveying and flue gas purification for industrial applications in regions such as Europe, Asia, and South America.

SECURING SAFETY

Ensuring maximum safety for operators is essential during bagging procedures and Flexicon's new Bulk-Out Model BFF Bulk Bag Discharger features a steel safety cage to prevent contact with moving parts during operation and automated unloading of bulk bags. The enclosure features externally-mounted controls and full-height doors with an Intrinsically Safe Relay (ISR) that halts operation when the door is open.

The discharger is equipped with top-mounted receiving cups and a removable bag-lifting frame for forklift loading of bulk bags. Z-CLIP strap holders at the frame extremities allow rapid, secure insertion and removal of bag straps.

A manual SPOUT-LOCK clamp ring positioned on top of a pneumatically-actuated Tele-Tube telescoping tube provides quick, dust-tight connections between the bag spout and hopper, and maintains downward tension on the spout as the bag empties to eliminate creases, folds or bulges that could hinder material flow.

Additional flow promotion is afforded by Flow-Flexer bag activators that raise and lower opposite bottom sides of the bag at timed intervals, loosening compacted material and directing it into the discharge spout.

As the bag lightens, the stroke of the bag activators increases, raising the bag bottom into a steep V shape. Top-mounted Pop-Top extension devices elongate the entire bag, promoting total discharge with no manual intervention.

The universal flanged outlet of the hopper allows connection of a rotary airlock or charging adapter to feed optional pneumatic or mechanical conveyors, or other downstream equipment.

The discharger is constructed of carbon steel with durable industrial finish and stainless steel material contact surfaces, and is available in all-stainless steel finished to food, dairy or pharmaceutical standards.

PACKING UP

Concetti, meanwhile, has launched the IGF 1200 Gemini packer offering two systems in one, without product contamination

The manufacturer of automatic systems for bagging and palletising bulk products has designed the new packaging solution for animal feed supplements or similar applications to manage both medicated and non-medicated feeds, within a single machine but still minimising the risk of cross-contamination between product batches.

This is a highly regulated area requiring careful design to meet all the client and regulatory requirements, the company says.

The filler is equipped with two separate weighing and filling systems, which work alternately, thus reducing the risk of transmitting active substances between different products. In addition to the physical separation of products during weighing and filling, the machine is equipped with a highly efficient cleaning system. The pre-formed bag, once full, can then be sewn or heat-sealed, based on the needs of the manufacturer. The bags are then conveyed to the palletiser.

The installation requires a much smaller physical space compared to two different packaging plants, a major economic advantage of the new Gemini system.

The packaging system can manage a wide range of bag sizes, thanks to the automatic bag holder with selectable opening: pre-made open-mouth bags from 2.5 to 25kg, flat or gusseted bags, of raffia, plastic raffia, paper, plastic. The machine can handle several types of granular and powdery products with production of up to 800 bags per hour (25 kg) and 1000 bags per hour (5 kg).

The complete turnkey line can be configured with the addition of a "four-column" palletiser, the spearhead of the Concetti range, suitable for palletising partially filled bags, thanks to the ability to overlap bags during stacking.

DISCHARGE AND FILLING

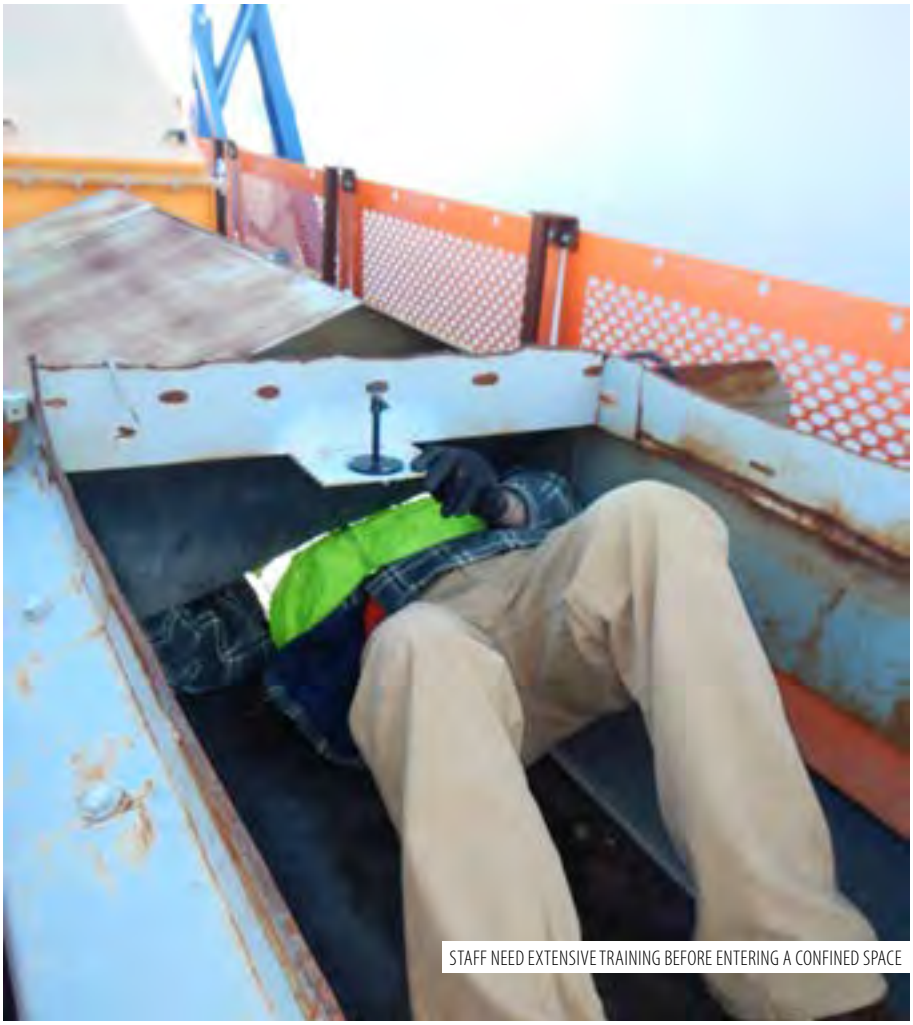
Another major player is US-based Material Transfer, which specialises in the custom design and manufacture of material handling equipment and systems. It also produces custom-designed bulk bag discharging systems to meet specific application requirements.

Its patented Material Master™ Bulk Bag Discharging System features exclusive flow promotion, discharge spout closure, and dust control technology for safe, reliable discharge. The company's Material Master™ Bulk Bag Conditioning System safely and efficiently returns hardened bulk bags to a manageable free-flowing state.

Material Transfer has been one of the industry-leading producer of bulk bag conditioning equipment since inventing the world's first hydraulic bulk bag conditioner in 2001. It also specialises in bulk bag filling systems to meet specific application requirements, with a complete range of filling solutions from a simple, durable unit for low volume filling, to a highly sophisticated, automated system for high-volume production.

ROOM TO MANOEUVRE

Confined spaces continue to present challenges for bulk terminal operators and shipowners alike, but training and technology can cut the casualties



STAFF NEED EXTENSIVE TRAINING BEFORE ENTERING A CONFINED SPACE

An estimated 7% of the US fatalities recorded by the Mine Safety and Health Administration (MSHA) between 1995 and 2011 occurred in a confined space. To reduce that number, conveyor operators should understand exactly how a confined space is defined and to consider what they can do to prevent serious injuries.

Many factors can cause bulk materials to adhere to the sides of chutes, silos and hoppers – including humidity, moisture content, size/texture of the raw material or increased production volume – resulting in lost capacity or clogging. Ongoing accumulation reduces flow and eventually stops production in order to address the issue, causing expensive downtime and requiring extra labour to clear the obstruction.

"Clearing extensive buildup often involves confined space entry, but the consequences of untrained staff entering a chute, silo or hopper can be disastrous, including physical injury, burial and asphyxiation," says Martin Engineering product engineer Daniel Marshall. "Without proper testing, ventilation and safety measures, entering vessels containing combustible dust could even result in a deadly explosion."

What is Confined Space Entry?

The US Occupational Safety and Health Administration (OSHA) defines "confined space" as an area not designed for continuous employee occupancy and large enough for an employee to enter and perform assigned work, but with limited or restricted means for entry or exit.

"Permit-required confined space" means a confined space that has one or more of the following characteristics:

- The vessel contains or has the potential of containing a hazardous atmosphere such as exposure to explosive dust, flammable gas, vapour, or mist in excess of 10% of its lower flammable limit (LFL).
- Atmospheric oxygen concentration is below 19.5% or above 23.5%.
- There is the potential for material to engulf, entrap or asphyxiate an entrant by inwardly converging walls or by a door which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazards.
-

Entering a Confined Space

Working in confined spaces typically requires:

» Special personnel training.
» Safety harness and rigging.
» Extensive preparation
» Added personnel for a "buddy system".

"Systems designed to minimise permit-required confined spaces can provide a significant return on investment and the best time to reduce the amount of confined-space entry for component maintenance and replacement is during the specification and design stages of a project," Marshall says.

Many manufacturers offer systems and products that can reduce the need for confined space entry. Examples would include:

» Modular chute designs with abrasion-resistant liners.
» Chutes that hinge open and lay down for liner replacement.
» Skirtboards with external liners.
» Belt cleaners that can be serviced without confined space entry.
» Flow aids such as air cannons and vibrators to reduce buildup.
» Modular air cleaners for specific locations rather than centralised dust collection.

Rules regarding confined space entry vary greatly depending on the country, even down to the state, province or prefecture level. As always, regional and local codes should be identified and followed, but general rules can be drawn from regulations established in major industrial markets such as Australia / New Zealand, Canada and the United States.

Commonalities between governmental regulations provide employers with a measured approach to safety. These procedures include:

MAINTENANCE MUST BE PERFORMED WITH NON-TOXIC MATERIALS

Prior to Starting the Job

Review the permit and the job-specific work procedures.

» Gather and inspect all necessary personal protective equipment.
» Test and/or calibrate any safety gear, test instrumentation or communication tools.
» If a current Job Safety Analysis (JSA) or safety check list does not exist, perform a risk assessment.
» Hold a pre-job meeting making sure all workers are aware of the hazards and safe work practices.
» Conduct proper tests for toxins, vapour, dust levels, oxygen levels and material-specific hazards.
» Perform as much cleaning and maintenance as possible outside of the vessel.
» Post completed confined space entry permit outside of the vessel.
» Isolate contaminants and moving parts to prevent the accidental introduction of materials.
» Proper lock-out/tag-out/block-out/test-out procedures must be completed and documented prior to entry.

During Procedure

» Perform maintenance/cleaning using non-toxic substances such as water and avoid using heat/fire in the confined space. Never use oxygen to purge a confined space as this can create a fire and explosion hazard.
» Provide ventilation if possible.
» Select personal protective/ safety equipment such as safety helmet, gloves, hearing protectors, safety harness and lifeline and breathing apparatus.
» Assign a trained observer to monitor the procedure and internal conditions, and provide escape assistance if needed.
» Practice fast evacuation of the confined space.

"Over time, well-designed access improves safety and saves money," Marshall adds. "Safe access that is carefully located and adequately sized will increase dependability and also reduce the downtime and associated

labour required for maintenance."
He advises that companies consider equipment designs that minimise the need for confined space entry, including improved access doors, vibrators, air cannons or silo cleaning services.
"Conveyor systems that are properly outfitted with appropriate cleaning and material discharge equipment create a safer workplace, while experiencing longer life and less downtime,"
he concludes.

Conveyor products manager Dave Mueller adds that one of the problems is the time and paperwork it takes to get the permit. Then once the permit is secured, it takes multiple people to do the job.

"So in many cases, time is a big hurdle. A lone worker may be able to identify and resolve an issue quickly, but all the paperwork could cost him half a day. So he may just do the job as quickly as possible and hope no one sees him,"
he says.

Proper lock-out/tag-out/block-out/test-out procedures must be completed and documented prior to entry, he says. However conveyor downtime is expensive, frequently requiring production to stop, so there is a very real temptation to cut corners, he adds.

"Reaching past the "safety zone" for any reason is always a concern if the belt is running. But even with all appropriate precautions, dangers are inherent in any job requiring confined space entry. Using a welder or torch can cause problems, such as a fire within the confined space. Appropriate ventilation can be an issue, as well as dust inhalation.

"Managers often don't realise that designing systems to minimize permit-required confined spaces can provide a significant return on investment. Thoughtful design can improve access, reduce service time and minimise safety hazards."

SEND IN THE DRONES

Using drones to reduce the need for entering dangerous spaces is likely to increase going forward. Classification society Bureau Veritas (BV) has completed its first survey by drone and the survey was carried out in the holds of a bulk carrier in an Italian port.

The scope was an intermediate survey on a bulk carrier and consisted of close-up inspections and ultrasonic thickness measurements (UTM) conducted by the drone in two cargo hold spaces. The required prior agreement from the flag authority was confirmed – all the more necessary as the ship is subject to the IMO Code for the Enhanced Survey Programme (ESP).

Remote inspection techniques were reflected in BV's rules in 2019. The drone operator involved in this survey is certified by Bureau Veritas for both RIT and UTM.

Bureau Veritas has conducted tests and established "proof of concept" for the most advanced inspection techniques to confirm that the technologies are providing safer and even better quality evidence to conduct and support the survey process, while also offering benefits and advantages for shipowners and ship managers.

Compared to traditional survey practice, immediate benefits include the obvious reduction in time and cost in needing staging, raft surveys or rope access specialists in combination with the required thickness measurement capabilities.

BV has confirmed that aerial drones are now survey-ready on an operational basis and provide:

- Safer conditions for the surveyor and the operator, who are not exposed to the risks of working at height nor, necessarily, should they be required to enter into the confined spaces for the inspection.
- Time saving during the inspection.
- The potential for better quality evidence when assessing the condition of the hull.
- Optimised maintenance costs and planning by reducing ship's immobilisation and optimising the preparation before the repairs.

Senior vice-president of technical and operations Laurent Leblanc says: "This is another milestone in the Bureau Veritas global strategy of digital classification using digital technologies to transform the operating model of classification for the benefits of its clients. We are now ready to offer operational surveys using drones anywhere in the world.

We will continue to look for innovation and test new ideas, but drone surveys are now going to be part of everyday life for ship surveys.

"Above all drones provide a level of detail and new level of safety that will benefit both our clients and our surveyors.

"Drone surveys and our remote survey capability and service delivery are really just starting to make an impact on our clients. They are a vital development for the future of classification. Now we can both see and decide remotely,"
he concludes.

DRONE OPERATOR WITH BUREAU VERITAS SURVEYOR AND DRONE IN FLIGHT

AIRBORNE DRONE CONDUCTING ULTRASONIC THICKNESS MEASUREMENTS INSIDE THE HOLD OF A BULK CARRIER

GOING VIRAL

Bulk ship managers face major challenges with the advent of coronavirus, not least rotation of seafarers through ports

"Coronavirus poses major challenges for seafarers on merchant ships from increasing restrictions imposed by port states," trade association Intercargo warned recently.

"The coronavirus (covid-19) has already caused the loss of thousands of human lives and the imposition by authorities of travel restrictions and lockdown of cities, provinces and countries across the world. Communities across most continents and economies are currently subjected to this serious threat and resulting turmoil.

"During this very difficult pandemic, our association wishes to remind societies and nations that without merchant ships and seafarers, cargoes cannot be transported between continents. Dry bulk carriers remain the workhorses of international shipping, which transports approximately 90% of world trade, serving essential needs such as food and energy: main and minor dry bulks include cereals, grains, agricultural and forest products, as well as iron and other mineral ores, coal and fertilisers, and several other basic goods serving infrastructure for the wellbeing of populations."

The trade association said it wished to highlight the logistical challenges with

the repatriation of seafarers who have completed their sea service and seek their relief and re-joining their families. "Although their colleague seafarers are standing by on shore in their home countries, the relief process is stalled as many port states have imposed local regulations, travel and quarantine restrictions due to COVID-19, despite the International Maritime Organization (IMO) circulars to be mindful of free access to seafarers. In many cases, neither the seafarers nor the companies know for how long these may prevail.

"While our association totally supports IMO's and other stakeholders' issued guidance, such as on Operational Considerations For Managing COVID-19 Cases On Board Ships, also disseminated via our website, Intercargo urges IMO member states and all port states to adopt a pragmatic approach in assisting shipowners and seafarers to overcome these challenges by removing undue hinderance for seafarers to leave or join a ship in their ports. The world relies on transportation by sea and the dry bulk shipping sector's services. Seafarers need our support and compassion with measured, rather than overzealous, restrictions in relation to COVID-19.

"Without efficient crew changes, the supply chain would break down, leading to basic product shortages and greater hardships for people around the world. It is paramount to consider the mental state of seafarers, who look forward to reuniting with their families after serving months on board a ship, as well as the adverse repercussions on the safe navigation and operation of ships. Banning crew changes in ports brings high risks to crews, ships, ports and society," Intercargo says.

DRY BULK WOES

Dry bulk operator GoodBulk has warned on the likely fallout for the capesize segment during the year relating to iron ore demand, among other issues.

For the quarter ending 31 December 2019, the Baltic Capesize Index averaged $22,185 per day, 40.2% above $15,829 per day for the same period 2018 and 24.5% below $29,365 per day for the quarter ending 30 September 2019, GoodBulk said in its commentary on the year ahead.

During the fourth quarter of the year, Brazil's iron ore exports fell to 89m tonnes, down 9m tonnes from the previous quarter, negatively impacting the capesize market via the loss of important tonne miles. "China also drastically reduced its coal imports during the fourth quarter as a result of strict import quotas, resulting in imports totalling 49m tonnes compared to 96m tonnes in the previous quarter. Brazil's iron ore exports continued to be heavily impacted during January and February 2020 as a result of heavy rain in the iron ore rich Brazilian state of Minas Gerais where rainfall in Belo Horizonte was the strongest in over 100 years," the company says.

"The annual cyclone season in West Australia, where most of the country's iron ore comes from, is also disrupting shipments. These events have pushed the capesize market down to 2016 lows and are currently below operating expenses. Capesize rates in January 2020 averaged $7,563 per day, 46.4% below January 2019." As rates have declined, scrapping of capesize vessels have increased."

The company said it expected scrapping to increase both as a result of the introduction of new measures requiring significant expenditure, coupled with downward pressure on freight rates. "The first quarter is historically a seasonally weak period for dry bulk shipping rates. This year the addition of the novel coronavirus outbreak in China is adding a new level of complexity as it is expected to negatively impact Chinese domestic demand and the necessary restrictions on logistics and the movement of people put in place to slow the spread of the virus will hurt raw material flows and consumption at a time when demand post Chinese New Year should be seeing a rebound," the company says.

"The normalisation of the economy will be key to the improvement in the dry cargo market, which is always one of the first to feel changes in global trade. Overall, however, once the spread of the coronavirus comes under control, the Chinese government's measures to prop up infrastructure projects via giving local governments access to the bond market is expected to support iron ore demand later in the year. Although we do not expect 2020 capesize rates to match 2019's average of $18,025 per day, we believe the market will see a significant improvement as we approach the third quarter 2020."

SUPPLY CHAIN WARNING

A new report by BSI on trends impacting global supply chains, point to the virus outbreak and shifting supply chains in Asia as two of the major challenges going forward.

"As incidents such as political protests, severe weather events, and acts of terrorism occur globally, businesses will need to prepare their supply chain for these concerns to ensure stability in the face of uncertainty," said Jim Yarbrough, global intelligence program manager at BSI.

The report suggests that Covid-19 has highlighted the fragility of global supply chains and, with different governments responding in different ways to the threat, further disruption will be created.

The trade war between the US and China led to other regional players such as Thailand, Malaysia, Cambodia, Myanmar and Bangladesh stepping up to the plate to create a more attractive business environment, the report says.

"Now, as companies are concerned over their supply chains in Asia amid the coronavirus outbreak and pursue other opportunities, industries must consider the corporate social responsibility risks still rife in China and throughout the region, including the presence of child labour, forced labour and poor working conditions. In addition to the coronavirus, natural disasters, invasive species and diseases ravaged the continent in 2019, causing widespread destruction of infrastructure and agriculture, all underscoring the need for businesses to develop comprehensive response plans."

There is a particular risk for those companies that have a limited number of trading partners.

"One of the things that really became apparent with Covid-19 is the rapid change that has occurred in terms of the critical mass of value chains that have built up in China from 2003, when we had SARS, to 2019," Alex Capri, a visiting senior fellow at the National University of Singapore's business school, told CNBC recently.

Due to retaliatory tariffs imposed on each other in the US-China trade war, companies had already started diversifying their supply chains out of China. The speed at which they do this will now accelerate, Capri told CNBC.

"We are going to see massive restructuring of supply chains. I don't think things will return to normal as we've known them over the past couple of decades. We are in a completely different new era now and globalisation as we've known it in the past is over," he told the news agency.

CYBER CHALLENGE

Cyber security represents another challenge for bulk managers and one recent success for Songa Shipmanagement was class society Korean Register's (KR) completion of a comprehensive cyber security survey of the chemical/oil tanker *Songa Hawk*, which certified the ship to be fully compliant in all areas – the very first ship to achieve the certification.

Songa Shipmanagement manages and operates 18 chemical/oil tankers and five semi-submersible vessels.

With this certification, Songa Shipmanagement and *Songa Hawk* satisfy the international cyber security requirements as outlined by the IMO, the Tanker Management and Self-Assessment and the Ship Inspection Report Programme. KR will now inspect the other ships in Songa Shipmanagement's fleet, testing their compliance, with a view to issuing further ship cyber security compliance certificates.

"As the shipping industry becomes more and more digitalised, so cyber attacks on shipping companies and ships have increased. An effective response and comprehensive cyber security preparedness is now essential for any maritime organisation," says Park Kae-myoung, head of KR's Cyber Certification Team.

"KR's expert cyber security team is now expanding its technology services to include the cyber certification of newbuilds and assessment of software conformity for ships, so our customers can respond quickly and effectively to any cyber security challenge as it arises."

In 2021, the International Maritime Organization's (IMO) Resolution MSC.428 (98) will enter into force, which will increase demand for company and ship cyber risk management services.

LEFT TO RIGHT, CAPT. KYAW MYINT (SONGA HAWK MASTER), MIJO BANICEK (SONGA SHIPMANAGEMENT ELECTRICAL SUPERINTENDENT), JEOUNG-KYU LIM AND SANG-HOON CHOI FROM KR'S CYBER CERTIFICATION TEAM.

PUTTING SAFETY TOP OF THE LIST

Moving product safely and ensuring the protection of ports from risks such as cyber crime are key issues for operators as cargo theft continues to rise

In its second annual report on cargo theft worldwide, insurer TT Club and global provider of supply chain intelligence, BSI confirm the overwhelming targeting of cargo trucks compared with all other modalities. The consistency of this trend year-on-year is also reflected in the 2019 data analysis of top commodities stolen: food and beverages represent 28% of all reported thefts in comparison with 19% in 2018.

The BSI and TT Club Cargo Theft Report 2020 analyses data from BSI's supply chain security country risk intelligence tool, Screen, and TT Club's insurance risk management and loss prevention insights.

TT Club's Mike Yarwood emphasises one identified trend in particular: "Thefts either of, or from road vehicles most frequently occurred while in transit, in rest areas or an unsecured parking location. These accounted for 60% of those thefts reported."

The median value of losses from these incidents ranges from $100,000 in South America to just over $11,000 in parts of Asia, he says. "We are particularly keen to draw attention to the dangers of such informal parking and encourage the provision of more secured truck stop facilities."

SAFE MOVEMENT

Worker safety in ports is another key issue and there are plenty of new equipment designs aimed at improving the safety environment.

Flexicon's new Tip-Tite Drum Dumper transfers hazardous bulk material from small and large drums into downstream processing equipment or storage vessels automatically and dust-free, maximising worker safety.

The unit accommodates drums up to 55 gallons, measuring up to 36ins in height, with an outside diameter up to 24ins and weighing up to 750lbs. A discharge cone adapter allows dumping of smaller drums measuring 20ins in height and 15in diameter.

The dumper is mounted on an elevated base frame to accommodate an integral powered roller conveyor matched to the elevation of plant roller conveyors.

It features dual hydraulic cylinders that work in tandem to raise and seat the container rim against the discharge cone, and then tip the container to an angle of 45, 60 or 90° with a motion-dampening feature. At full rotation, the discharge cone seals against the inlet of the receiving vessel, creating a dust-tight connection and allowing controlled, dust-free discharge through a pneumatically-actuated slide gate valve.

An optional pneumatically-actuated vibrator on the discharge cone promotes complete evacuation of non-free-flowing materials. Stainless steel material contact surfaces, meanwhile, and galvanized carbon steel framework resist corrosive materials.

VITAL SUPPLY CHAIN

The International Maritime Organization has echoed shipping industry calls for governments to keep shipping and supply chains open and grant special travel exemptions to seafarers in response to the covid-19 pandemic.

The IMO has distributed a series of recommendations for governments and relevant national authorities, proposed by a broad cross-section of global industry associations representing the maritime transportation sector.

It calls on governments to designate professional seafarers and marine personnel, regardless of their nationality, as "key workers" providing an essential service.

Referring to the issue of crew changes, it says professional seafarers and marine personnel should be granted any necessary and appropriate exemptions from national travel or movement restrictions to allow them to join or leave ships, and that governments should permit professional seafarers and marine personnel to disembark ships in port and transit through their territory (i.e. to an airport) to allow crews to be changed and seafarers to be repatriated.

The new recommendations reiterate comments previously made by IMO Secretary-General Kitack Lim, saying it was "crucially important that the flow of commerce by sea should not be unnecessarily disrupted." Seafarers he said are "on the front line of this global calamity" and that the situation needs a "practical and pragmatic approach, in these unusual times, to issues like crew changeovers, resupply, repairs, survey and certification and licensing of seafarers."

CYBER SAGA

North P&I Club has announced details of a new benefit for its members to encourage them to understand better their vulnerabilities to cyber risk and to improve their cyber security processes and systems ahead of the International Maritime Organization's (IMO) deadline for safety compliance in January 2021. North has partnered with HudsonCyber to offer its members access to their HACyberLogix platform.

HACyberLogix is a secure, cloud-based programme, designed specifically for the maritime industry. It will enable North's members to assess their cyber security capabilities and gain insight into what changes need to be implemented for January 2021 compliance. During an initial trial period, members will have access to HACyberLogix (Level 1) programme with confidential assessment and reporting, gaining insight into the operational changes and improvements required for January 2021 compliance.

Colin Gillespie, director (loss prevention) at North, says: "North P&I Club is committed to assisting members prepare for the ever-changing regulatory environment and this partnership with HudsonCyber will help our Members meet the challenges presented by the upcoming requirement for cyber risks management to be included in Safety Management Systems from January 2021."

Hudson's HACyberLogix platform integrates industry-leading cyber security standards, frameworks and

standardised practices, including the IMO's International Ship and Port Security Code and the International Safety Management Code, therefore empowering North's Members to rapidly and cost-effectively implement and sustain a cyber risk management framework compliant with the IMO's guidelines on Maritime Cyber Risk Management.

Gillespie adds: "Changes to operations may be time consuming and complex. We believe that the insights derived from Cyberlogix will inform decision making and allow efficient allocation of resources to support cyber security efforts in shipping companies."

ASHDOD UPDATE

Meanwhile, defence company Naval Dome has signed an agreement to defend the Port of Ashdod's critical operational technology (OT) systems from cyber security hacks.

The Port of Ashdod will start pilot trials of the Port-Dome cyber protection on several systems early this year, after which the technology will be installed across the port's entire network. This will include traffic control systems (VTMS/VTS), berths, bridges, locks and gates, terminal cranes and storage facilities, and all access points and gateways.

Itai Sela, chief executive of Naval Dome, says: "Port-Dome is uniquely designed for port OT systems which, as we have seen from past experience, are susceptible to cyber-attack if not protected.

"Port-Dome is the leading solution for port and terminal operators as it provides the highest level of cyber defence without having to upgrade systems or change existing infrastructures. No training is required, and the Port of Ashdod's OT systems will continue to operate in the same as they did prior to the installation. The only difference being hackers will be unable to gain access."

Naval Dome will begin the retrofit security installation in 1Q2020, followed by integrating Port-Dome into new systems and equipment in the future.

"Once Port-Dome has been installed, the Port of Ashdod will be one of the most secure container terminals in operation," says Sela.

Orna Hozman Bechor, Ashdod Port's chairwoman adds: "With the security of the world's ports and terminals vital to ensuring the supply of energy, commodities and consumer goods to market, we have partnered with Naval Dome to ensure that should a cyber event take place it does not affect the port's or our customers' operations.

"Port Dome is technological must-have for any automated port with network-based OT systems. Ashdod Port overcame the red tape many governmental companies deal with and is now connected to the worlds of innovation and technology. I am proud to lead the first port in Israel to have stepped up to the challenge bringing Ashdod Port to an advanced global standard."

Naval Dome's marketing vice-president Paola Rossi, says: "The impact of a cyber attack cannot be underplayed. With expanding OT-based systems and network-based technologies, alongside the increase in systems using GPS-based location services, seaports will become increasingly susceptible to attack. If successful hackers, can paralyse the supply chain's central artery, shut down port operations, damage systems, and cause human casualties and financial and reputation loss."

FIRE-FIGHTING PLEA

Shipowners looking to retrofit marine exhaust gas cleaning systems as a way of complying with new sulphur emissions rules should verify the capacity of their fixed fire-fighting systems before undertaking any retrofit projects.

While amendments to MARPOL Annex VI, dubbed the IMO 2020 regulation, do not specifically require additional fire-fighting capability, leading safety expert Survitec reminds owners that any increase in machinery space size will require an increase in fire-extinguishing capacity.

Dagfinn Aas, director,of technical management at Survitec Fire Solutions, says: "A scrubber installation often requires extending the engine room in the casing area and when the engine room's volume is increased the capacity of the extinguishing agent – in most cases CO_2 – must also be increased.

"If a scrubber is installed in a totally separate space, with a bulkhead facing towards the engine room, then there is no need for an additional fire-fighting system. In other cases, additional nozzles will have to be connected to the existing pipework covering the scrubber area, or additional CO_2 cylinders may be required. However, we have seen scrubber retrofits that have required completely new fire-fighting systems. It all depends on the calculations and the CO_2 concentration."

For a CO_2 fire-extinguishing system, the calculation is based on 40% concentration of the total gross volume, excluding the casing, or 35% concentration of the gross volume including casing; whichever method gives the highest CO_2 capacity.

"When volume is increased, the system needs to be re-calculated and re-engineered with additional CO_2 cylinders and additional nozzles. New flow calculations need to be carried out to verify the new system will discharge the correct amount of gas within the required two minutes," says Aas. "Drawings must also be sent to the classification society for approval before installation can take place. This means some installations may have to be removed and reinstalled".

In the run up to the 1 January 2020 implementation date, Survitec registered a hike in fire system retrofits, but with up to 6% of the global merchant fleet set to have a scrubber installed by year-end, the company advises to plan ahead.

"We have completed more than 30 retrofit projects over the past two years in Europe alone," said Michal Peruga, operations director, Survitec Fire Solutions. "However, we are seeing a number of inquiries where shipowners have left it too late and have realised the need for CO_2 upgrades only when classification surveyors begin certifying the scrubber installation.

"Inquiries are coming in just one or two months before the drydocking, which is far too late. This can result in delays to the vessel re-entering service and unbudgeted drydocking costs."

While most upgrades to the fixed fire-fighting system are relatively simple, requiring additional CO_2 cylinders, nozzles and extra pipework, some projects have required complete system redesigns or a totally separate fire-fighting system.

"It can be a major task updating the drawings and submitting the paperwork for class approval," says Peruga. "It could take four to five months from taking an order to getting the approvals in place and carrying out the engineering before the vessel returns to service, assuming drydock availability."

Commenting specifically on Chinese shipyard availability, Beibei Qiu, country manager China, Survitec, says: "Slots are difficult to find, with many yards fully booked due to the increased demand for scrubber retrofits. One Shanghai shipyard I visited has 80 vessels booked in for scrubber installations this year, which doesn't leave a great deal of room for other projects.

"Shipowners do need to upgrade their fire-fighting systems at same time they install the scrubber. Otherwise, it will not be approved in time, which often comes as quite a surprise to the shipowner."

SHIPOWNERS NEED TO UPGRADE THEIR FIRE-FIGHTING SYSTEMS AT THE SAME TIME THEY INSTALL THE SCRUBBER, ADVISES SURVITEC

KNOCK-ON EFFECTS

The US/China trade dispute, plus economic uncertainty due to Brexit and the coronavirus gave German equipment manufacturers a bumpy ride last year

Weak industrial production and protectionism were blamed for German machinery exports falling 1.5% last year to €179.8bn compared with the previous year. With an export quota of almost 80%, mechanical engineering companies from Germany continued to have a strong presence on the world market, but also depend on its development.

"In particular, international trade disputes, increasing protectionism and the Brexit hangover as well as the far-reaching structural change in the automotive industry have led to uncertainty and a reluctance to invest in many industries," explains mechanical engineering industry association VDMA's economic expert Olaf Wortmann.

"In view of the current order intake of mechanical engineering companies, a renewed decline in exports is likely for the whole of 2020," he predicts.

Between January and December, exports to the US, which is Germany machinery exporters' number one target, rose by a nominal 4.3% to €20.1bn. The US accounts for 11.2% of total German machinery exports. However, the momentum slowed significantly in the course of the year. "This is not least because the trade

dispute between the US and China has also weakened industry in the US," explains Wortmann.

In the first half of 2019, machinery exports to the US still grew by a nominal 7.8%. In the second half of the year, on the other hand, it only grew by about 1%. Nevertheless, the US was able to extend its lead over China, the second-ranking sales market.

Export expectations for the Chinese market have clearly been affected by the coronavirus outbreak. German machinery exports to China contracted by a nominal 1.1% to €18.8bn in 2019 as a whole. The People's Republic has a 10.5% share of total German machinery exports. "In the second half of 2019, growth in Chinese industry had stabilised again and there was hope that the trade war could be defused. But now China is confronted with the coronavirus, the effects of which on global exports cannot yet be assessed," says Wortmann. "However, the corona danger does not change the fundamental importance of the Chinese market for our industry in the future," he emphasises.

Exports to EU countries (€85.9bn) in 2019 remained almost at the previous year's level. The EU countries together accounted for 47.8% of total German machinery exports. The most important partner is traditionally France, the number three in the entire export ranking. German machinery exporters recorded a plus of 5.3% to €12.4bn in business with France.

"In 2019, French investment in equipment, including German machinery, developed much more dynamically than the EU average. One of the main reasons for these developments may well have been Macron's reform policy," Wortmann explains.

The picture is different for exports to the UK. The political wrangling over the modalities of Brexit weighed heavily on exports to the UK from the second quarter of 2019 onwards. German mechanical engineering exporters recorded a nominal 5.8% drop in exports to €7.4bn between January and December.

ADDITIVE MANUFACTURING

Thyssenkrupp has recently announced its collaboration with Wilhelmsen to develop Additive Manufacturing (AM)-enabled commercial solutions for the maritime industry.

Under the memorandum of understanding signed by both companies, Thyssenkrupp and Wilhelmsen's Marine Products division will collaborate on providing 3D-printed components for maritime vessels, leveraging on Thyssenkrupp's deep expertise in AM, alongside Wilhelmsen's in-depth maritime expertise and direct ongoing experience of developing 3D printing as a service for vessels.

The collaboration will also leverage on the capabilities of the recently inaugurated Thyssenkrupp Tech Centre in Singapore and its Global Additive Manufacturing Tech Centre in Mulheim, which has been awarded the Approval of Manufacturer certificate by leading quality assurance and risk management firm DNV GL.

The high-level certification, which allows Thyssenkrupp to supply metal 3D products for application in maritime and other industrial sectors, further cements the company's distinctive capabilities to design and fabricate metal parts and components utilising additive manufacturing.

"We are extremely excited with this new milestone for us in the arena of AM," says Jan Lueder, CEO of Thyssenkrupp Asia Pacific. "After securing the world's first certified facility for marine 3D printing, we are now partnering with one of the biggest shipping companies in the world to deliver our AM expertise to our marine customers across the globe."

"Wilhelmsen is built on innovation and our partnership with Thyssenkrupp once again shows how we are leveraging technology to further elevate the maritime industry," adds Kjell André Engen, Executive Vice President, Marine Products, Wilhelmsen. "AM offers a lot of advantages and we can clearly demonstrate to our customers how they will benefit from on-demand manufacturing of spare parts."

Joining the collaboration is startup company Ivaldi Group, a technology partner partly owned by Wilhelmsen that utilises its platform to market and offer 3D products for the maritime industry. This partnership of two globally renowned enterprises and a fast-rising startup bodes well for the burgeoning Additive Manufacturing ecosystem.

"Formalising this partnership here in Singapore is only natural given size of maritime industry here and the vibrant innovation ecosystem that Singapore offers," notes Lueder.

SIGNING THE MOU. (FROM LEFT): DR. MARKUS OLES, HEAD OF INNOVATION STRATEGY AND PROJECTS, THYSSENKRUPP, KJELL ANDRÉ ENGEN, EVP MARINE PRODUCTS, WILHELMSEN SHIPS SERVICE, ESPEN SIVERTSEN, CEO, IVALDI GROUP

HANDHELD OPTION

Checking the viability of hoses that transport products such as water, steam or chemicals is vital for safety purposes. In order to ensure these are safely carried, RFID handhelds from Pepperl+Fuchs and ecom, paired with application-specific software developed by Neoception, make these maintenance tasks convenient and efficient.

RFID HANDHELDS SIMPLIFY HOSE MAINTENANCE

Chemical plants are subject to comprehensive governmental supervision to ensure safe operation. Because these high safety standards also apply to the hoses in use, regular checks are required by law. Proper maintenance requires interruption of operation, complete plant shutdown and removal of the hoses being checked. This makes it all the more important for plant operators to save additional time and costs by keeping tests to a minimum.

"In hazardous and industrial environments, documentation of the hose check can be easily done with an RFID handheld and application-specific software. To make this possible, RFID tags are attached to each hose., The company explains.

The hose information is read by the RFID handheld and then documented via the "hose manager" software from the Pepperl+Fuchs start-up Neoception. The auditor is guided through each test step by step, which ensures that no steps are forgotten. All results are recorded and then made available in a report file that can be uploaded to the ERP system wirelessly. For added convenience, the user interface is designed to be glove-friendly.

The RFID handhelds also feature a localisation function that can be used to measure the distance to a detected tag on a bar graph. Besides detecting and localising RFID tags, it is also possible to read out a variety of 1-D or 2-D codes. The integrated 2-D imager allows users to assign additional information to particular components using barcodes or QR codes. When reading the tags, this data can be linked to the other test results. This way, mobile workers can retrieve all information on site and save it in a log file or online.

SUCCESS IN SOUTH AMERICA

Liebherr reachstackers have been making good progress in sales to the Central and South American markets. A large number of the most important ports will, in future, be equipped with next-generation reachstackers from the company, which suggests that the equipment's low diesel consumption coupled with a good customer service network were the decisive arguments that helped it win the tenders.

The vast majority of reachstackers offered by most manufacturers on the market operate with an outdated mechanical drive system, Liebherr claims. "This type of mechanical power transmission has not been developed any further for many years and is therefore no longer up to date. Liebherr relies on a hydrostatic drive for many machines, such as the Liebherr wheel loaders, of which more than 50,000 have already been sold. The Liebherr Reachstacker LRS 545 is also equipped with a hydrostatic drive. This type of drive requires neither a torque converter nor a differential. In addition, there are fewer power losses due to the non-existent mechanical power transmission. This means that the energy produced by the diesel engine is transmitted to the wheels with much fewer wastages. The result is significantly lower fuel consumption while maintaining the same performance."

EMPORNAC Guatemala has awarded Liebherr a contract to supply and service 20 Toplift Reachstackers which the company attributed to the dedicated fuel consumption and driving comfort of the Liebherr hydrostatic reachstacker. The first units for EMPORNAC were handed over and commissioned in August 2019.

Since introduction of the Liebherr LRS 545 in 2016, the hydrostatic drive concept has become increasingly popular with terminal operators, according to Liebherr. The LRS 545 can make savings of 30-40% on fuel – even without applying any hybrid technologies, the company claims.

Latin American terminal operator SAAM, has awarded the international tender of 28 Reachstackers for their terminals in Chile, Ecuador and US to Liebherr-MCCtec Rostock.

COAST TO COAST

Both UK and Irish ports will be facing many challenges during the coming months, with the effects of Brexit still to be assessed, as well as the impact of coronavirus

RICHARD BALLANTYNE, CHIEF EXECUTIVE OF THE BRITISH PORTS ASSOCIATION

It is still early days to assess the likely impact of the coronavirus on trade through ports in the UK and Ireland as the knock-on effect of the lockdown in China begins to make itself felt throughout the supply chain.

British port associations recently outlined their hopes for the government's business plan in the coming years, with an emphasis on developing the coastal focus of port business and the further developments of free ports.

A number of the issues facing British ports were highlighted in the industry response to the British Government budget on 11 March. Commenting on the decision to abolish tax relief on "red diesel", Richard Ballantyne, chief executive of the British Ports Association said: "The industry was braced for the abolishing of tax relief on 'red diesel'. It is difficult to accept the imposition of significant extra costs for port operators while government steps in to exempt agriculture, rail and heating, without any credible explanation as to why. This will add costs to some port operations where there are few realistic alternatives and little time to adjust.

"We are pleased that Marine Voyages Relief remains in place and welcome a

two-year delay for operators of non-road mobile machinery is welcome, but just postpones the pain. We look forward to engaging with government on this further before the relief is abolished."

Regarding budget commitments on funding to assist businesses affected by the coronavirus outbreak, Ballantyne said the association hoped that the £12bn announced to support public services would include support for local authorities' port health responsibilities.

Commenting on other budget items he said: "While we were disappointed that the National Infrastructure Strategy has been delayed, we welcome major new investment in road and rail connectivity for ports and logistics and new investment in transport schemes in England. Large schemes like the Lower Thames Crossing are good news for nearby ports, but extra investment in local road upgrades and potholes is also something to be celebrated."

The British Ports Association published an agenda that outlines the ports industry's requests of government for the coming years at the beginning of March. The BPA's 2020 New Government Briefing outlines how industry and government can work in partnership to deliver for ports and fuel a successful economy.

Requests to the government by the port industry include an inclusive freeports strategy that allows ports of all type and location to be engines of growth regionally and nationally and priority given to public funding of road and rail connections to ports and support for local authority budgets, among other requests.

Ballantyne commented: "Within the document, we record how we are looking forward to working with government to build a successful freeports policy that works for all ports around Britain. As well as collaborating on the sustainable agenda for the industry and working towards net-zero emissions in shipping. This paper highlights what the ports industry needs from government to flourish, ultimately to the benefit of the entire nation."

The British ports industry is requesting further support for port health authorities to prevent COVID-19 spreading and impacting businesses.

Ballentyne said: "Our members have excellent local relationships with port health authorities and are working closely together, but it does appear as if many of these bodies need additional assistance. We have also raised concerns over ports being put in the position of having to make decisions on health matters for which they are not qualified. Our gateways need to keep open and trading, but they do need some appropriate support, whether this be clear guidance from government in regards to shipping movements from high-risk regions, or medical officers giving individual case by case advice.

"Current market data shows that the impact of the coronavirus is expected to be greater than SARS given the service sector has a greater share of the Chinese economy, China accounting for a significant amount of global seaborne imports and global shipbuilding, and the majority of ship repair," he continued. "We understand economists' estimate the Chinese GDP growth reduction will be around 2% for the first three months of 2020, with a global GDP reduction of 0.2% for this period."

Many businesses in the UK are also starting to see the impacts of the disruption caused by extended factory shutdowns and supply chain issues that may have a knock-on effect for UK businesses down the line.

Responding to commitments made by all political parties in the run-up to the UK general election, Tim Morris, CEO of UK Major Ports Group, said: "Major ports welcome the cross-party consensus on the importance of boosting infrastructure investment in the UK." It was crucial that coastal regions get their fair share of this investment, he said, and there was huge potential in coastal areas that can be unlocked with the right investment. "Politicians need to move on from just the usual 'north vs south' soundbites and address the deeply worrying coastal divide," he said. "A refocusing on realising this potential also puts the UK in the best shape post Brexit. Whatever shape Brexit takes, stronger global gateways such as the ports handling 95% of UK trade are a no-lose move for the UK."

DUBLIN STRENGTHENS EU TIES

Meanwhile, figures for the Port of Dublin suggest that trade with other EU members grew strongly last year.

The continued strength in unitised growth was, however, offset by a large one-off decline in bulk solid commodities and, as a result, overall tonnage growth for the year was just +0.4%.

Containers and freight trailers accounted for 83% of all cargo and both the Ro-Ro and Lo-Lo sectors grew strongly.

Bulk liquid volumes, comprising mostly petroleum products, grew by 0.9% to 4.7m tonnes driven by increasing activity in the road transport and aviation sectors. Petroleum imports through Dublin Port are now 14.4% higher than they were in 2007.

However, bulk solid commodities declined by 23.4% to 1.8m tonnes due, first, to 2018 having been an exceptionally strong year for agri-feed imports and, second, because of the cessation of exports from Boliden Tara Mines for a four-month period while major construction works in Alexandra Basin were proceeding. These works are now complete and exports of lead and zinc ore concentrates have fully resumed. These two factors also reduced the number of ship arrivals in 2019 by 71 down to 7,898.

Commenting on the results, Dublin Port's Chief Executive, Eamonn O'Reilly, said: "The dominant feature of 2019 was the continued strong growth in the unitised modes with Ro-Ro ahead by 2.6% and Lo-Lo by 6.5%. Behind these growth figures, however, we saw a marked difference between the UK and the EU-26. Where GB volumes declined by 0.2%, volumes on Ro-Ro and Lo-Lo services to continental Europe grew very strongly by 10.7%.

"The effect of the deployment in recent years of new ships on direct

routes to continental Europe by shipping lines such as Irish Ferries and CLdN is clear to be seen and we expect to see this trend continue as trading patterns adapt post Brexit.

"While overall tonnage growth was low at 0.4%, there were one-off factors behind the decline in Bulk Solid volumes in 2019 which will not be repeated in 2020.

"The continued large growth in unitised volumes underpins the need for Dublin Port Company to continue the major €1bn investment programme from now to 2029.

"In December, we finalised a €300m private placement debt facility and, with the finance now in place, capital investment will continue apace during 2020 on the Alexandra Basin Redevelopment Project, at Dublin Inland Port and on the redevelopment of the port's road network to provide the capacity needed as the port grows to maximum capacity utilisation by 2040.

"While the final impacts from Brexit remain unknown, we have completed a series of projects during 2019 in conjunction with the Office of Public Works to provide the border infrastructure needed for whatever level of checks are ultimately required."

AGGREGATES AND AGRICULTURE

As far as individual ports performance is concerned, ABP announced that in November 2019, it handled the largest quantity of construction aggregates ever to pass through the Port of Ipswich in one month, making 2019 a record-breaking year for the port's role in supporting the UK construction industry.

Having handled almost 50,000 tonnes of aggregates in November 2019 for Brett Aggregates, the largest independent producer of sand and gravel in the UK, ABP's team at the Port of Ipswich beat its previous record, which was 46,600 tonnes in May 2018.

Operating a terminal within the Port of Ipswich where marine-dredged aggregates arrive by ship, Brett Aggregates stores and processed materials on site before delivering them to customers by rail, sea or road for use in concrete manufacture and other construction projects.

Adam Smith, commercial manager – East, Brett Aggregates, says: "This is a great achievement from our Ipswich team and, with continued support from ABP, we can continue to meet customer demand.

"Having achieved plenty of successes throughout our long-term partnership, we look forward to continuing to work together."

Last year also saw a strong year for trade in agribulks for the port, which more than doubled its grain export volumes with 500,000 tonnes exported from the port in the months of June to November 2019.

The month of October was also strong for ABP's customers Clarksons Port Services, which reported record-breaking volumes, having exported 68,809 tonnes and beating its previous record held since September 2008 at 64,186 tonnes.

Andy Rham, managing director at Clarkson Port Services, says: "We were pleased to work closely with ABP's Port of Ipswich in order to ensure we had adequate stores and equipment to look after our customers through this extremely busy period. At times, we were loading four vessels, using all eight of our conveyors."

October was also a very strong month for ABP customers COFCO International. Speaking about the increased volumes, Tim Capey, COFCO international chief operating officer, says: "We were pleased to handle a record tonnage through Ipswich Grain Terminal during the month of October.

"The business handled 140,000 tonnes of grain and animal feed, the highest monthly tonnage since the facility opened in 1983. This high level

of activity reflects the leading role that COFCO International and Ipswich Grain Terminal play in the food and feed supply chain."

Together with the ABP's other port in East Anglia, Ipswich handles over 2m tonnes of agribulks annually and plays a vital role in supporting the regional economy.

Paul Ager, ABP divisional port Manager in East Anglia, says: "We would like to thank our customers for working with us to ensure smooth operations at the port during the busy harvest season.

"We have been investing in expanding storage capacity at the port to meet the requirements of the agricultural sector, with more developments currently underway, which will be unveiled in 2020."

The Port of Ipswich has also recently invested more than £4m in two new bulk storage terminals, the Orwell Bulk and Cliff Bulk Terminals, adding more than 7,000sq m of storage space, and also unveiled a new fertiliser bagging and blending facility at the port.

Speaking on behalf of one of ABP's customers at the port, whch will benefit from the new contract, Andrew Merton, COFCO international UK fertiliser trading director, says: "COFCO International UK imports a significant quantity of bulk fertiliser products to the Port of Ipswich.

"Therefore, it is key to our business that we receive the highest possible discharge rates. Cargo handling and transport are a key component to this, and the effective movement of product from vessel to store is vital. We have witnessed a significant improvement in the servicing of our business through the Port of Ipswich."

ABP has also celebrated a new haulage services contract with skilled labour and port services provider Felixstowe Agencies Ltd (FAL) at the Port of Ipswich to enhance its customer offer at the port.

In addition, FAL has purchased 14 new vehicles to enhance its services, investing £300,000 and reaffirming its commitment to the project.

ROSYTH TAKES CENTRE STAGE

Scotland's largest agricultural products hub is now fully operational at the Port of Rosyth with the arrival of the *Baltic Mantis* bulk cargo ship and her load of over 30,000 tonnes of animal feed from Argentina.

As part of a long-term partnership with Forth Ports and Cefetra, the Fife port has now become the main Scotland's principal agri-hub, handling an extensive range of agricultural products for the Scottish animal feed, food and drink and farming industries.

The Port of Rosyth has been deepened to provide a true deep-water port capable of taking vessels carrying up to 50,000 tonnes of cargo. Its existing storage facilities have been significantly extended with the addition of a new, 200,000sq ft, purpose-built agricultural products terminal, increasing the port's storage capacity to around 100,000 tonnes. The terminal was built by Luddon Construction and the port manages all the operations in the store.

The port has invested in a new Liebherr mobile harbour crane for bulk handling capability at the agri-hub. This new crane is a state-of-the-art mobile harbour crane with powerful transmission and advanced electronics for bulk handing.

To further enhance the port's bulk handling process, and to manage dust emissions, a new Samson ecological hopper is also now in place at the port. The eco hopper is the first of its kind in the UK and forms a key component of the new agri-bulk hub facility.

Derek Knox, senior port manager comments: "This is an exciting time for the Port of Rosyth as we see another significant investment programme for our customer, Cefetra, reflecting our strategy of working in partnership to deliver supply chain solutions reach fruition. This new agri-hub and our new Liebherr mobile harbour crane bring together the port's unrivalled logistics links as well as its excellent marine capability. It's also great to see the new Samson eco hopper in use. This is a key part of our dust control at the port. My thanks also to the Luddon Construction team who delivered the new terminal warehouse ahead of schedule."

Andrew Mackay, managing director at Cefetra adds: "The agri-hub will increase the efficiency of our supply chains, bringing additional benefits to our customers and to Scottish agriculture for the long term."

Rosyth's location and logistical links to the motorway network, make it ideally suited to supply all areas of Scotland and Northern England. In addition, Rosyth, being near to continental Europe, has advantages in short sea freight.

TIM MEYER, MANAGING DIRECTOR FOR FAL (LEFT) AND ANDY CONSTABLE, HEAD OF OPERATIONS AT ABP'S PORT OF IPSWICH.

TURBULENT TIMES AHEAD

While US ports are making some substantial investments, there are major concerns with the president's most recent budget announcements — as well as with the spread of coronavirus

> Since ports are a nation's first line of defence against threats ranging from terrorism to pathogens, they take their role seriously about protecting the safety and wellbeing of their communities.
>
> CHRIS CONNOR, AAPA PRESIDENT AND CHIEF EXECUTIVE

The American Association of Port Authorities (AAPA) has registered strong concerns over significant declines to federally funded, port-related programmes when compared with 2020 funding levels.

"We're very apprehensive about the President's fiscal 2021 budget," says Chris Connor, AAPA president and chief executive. "Adequate federal investments into US port-related infrastructure, on the landside and the waterside, are crucial for the safe, efficient movement of goods so the nation can remain globally competitive, and this budget doesn't get us there."

Plans put forward in 2016 outlined US ports and their private-sector partners plans to spend approximately $31bn a year through 2020, provided the infrastructure outside the ports' jurisdiction, such as roads, rails, bridges, tunnels and navigation channels, would support those investments.

"Activities at US seaports account for more than a quarter of the nation's economy, support over 31 million American jobs and generate more than $378bn a year in federal, state and local tax revenue. It's vital the federal government uphold its end of the partnership with ports to ensure the country has a 21st-century goods movement system in place."

The US Department of Transport's Port Intermodal Infrastructure Program (PIIP] will have awarded more than $500m in grants to improve the safety, efficiency, and reliability of multimodal movement through US seaports by the end of this financial year, he says.

While the Department of Homeland Security's Port Security Grants Program (PSGP), which Congress last funded at $100m, is in the President's 2021 budget, funding has been reduced, which is typical of past budgets that have either proposed reducing the funding level or eliminating the program entirely in favour of consolidating several security grant programmes, he says. The new budget has a funding request for the PSGP at $36.4m, a two-thirds cut on the FY20 level.

President Trump has also proposed cutting the Environmental Protection Agency's (EPA) budget by 31%. EPA's budget funds the Diesel Emissions Reduction Act (DERA) grants, which would be slashed by 89% over 2020 financial year levels. These grants have proved helpful in decreasing port-related diesel emissions in near-port communities and have helped ports to make investments in clean diesel equipment that have resulted in reduced air emissions at the ports themselves, the association says.

Led by a 20% increase in construction funding, the President's 2021 budget for the US Army Corps of Engineers coastal navigation programme would rise 10% compared to his 2020 budget request, the association says. "While AAPA acknowledges this increase, the amount is still nearly 40% less than FY20's appropriated level.

"We live in an interconnected world, and overseas trade – 99% of which moves through ports – is absolutely vital to our economy," says Connor. "Federal investments into port-related infrastructure, security and environmental programs pay huge dividends in terms of economic growth, good American jobs and supporting activities that generate sizable tax revenues. AAPA will be working with Congress on behalf of its members to meet and exceed 2020 financial year appropriation levels for fiscal 2021 funding of all port-related federal programs."

VIRUS IMPACT

As well as funding, the coronavirus is having an impact on port activities, the AAPA says.

"While the global economic impacts to the port and maritime industry from the coronavirus outbreak are significant and growing, the human impacts are our greatest concern," Connor says. "Since ports are a nation's first line of defence against threats ranging from terrorism to pathogens, they take their role seriously about protecting the safety and wellbeing of their communities.

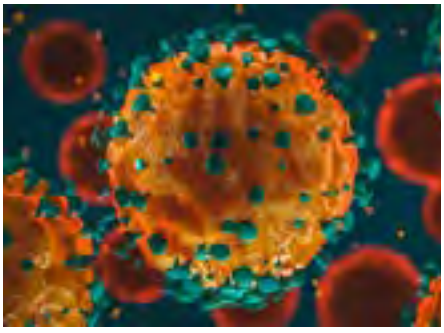
"In the US, ports are closely following instructions and protocols from appropriate federal agencies to quickly respond to the coronavirus threat. Like AAPA, they believe the most important things are to ensure that as few people as possible become infected, that those who have been infected are well treated and receive quality care, and that we mourn for those whose lives have been tragically cut short by this pathogen crisis," Connor comments.

"For seaborne trade and travel, it's both a blessing and a curse that there's a two-week latency period for coronavirus symptoms. The lag time gives our ports, Coast Guard, Customs agents and health officials time to prepare for screening and, if needed, quarantine or rerouting of crew members or travellers thought to be infected. AAPA keeps its US member ports connected daily with these federal agencies and recommends its member ports also work closely with their specific Captain of the Port for local notices and updates.

"By law, it's up to incoming mariners and ship operators to report if anyone is thought to be sick on-board. These protocols are always in place for our on-guard industry."

Supply chain disruption is another matter, he said and the impact could run to billions of dollars , he suggested that cargo volumes at many US ports during the first quarter of 2020 may be down by 20% or more compared to 2019.

"Things will rebound eventually, and indeed we're hearing news about factories that are coming back on-line in China, and ports there ramping back up to move the cargo. At the same time, supply chain managers around the world are working tirelessly to keep cargo moving to ensure that the goods we need are available when and where we need them," he says.



PLUGGING IN

The Port of Palm Beach is introducing new electric vehicle charging stations to encourage employees and port tenants to go electric. The charging infrastructure is part of Florida Power & Light Company's new electric vehicle research initiative, FPL EVolution, and Port of Palm Beach employees and tenants are welcome to charge their EVs for free while at work.

"Free charging for electric vehicles is a state-of-the-art employee benefit that aligns with our organisation's sustainability goals and will help motivate more drivers to get behind the wheel of these environmentally friendly cars and trucks," says port executive director Manuel Almira.

FPL EVolution chargers double as research stations and collect valuable data to help FPL further advance electric transportation in Florida .

"FPL has been at the forefront of advancing affordable clean energy for decades," says Matt Valle, vice president of development. "Through FPL EVolution, we're partnering with organizations that value sustainability to make Florida a leader in electric transportation."

FPL plans to install more than 1,000 charging points at more than 100 locations across the state, including large employers, popular destination and Florida Turnpike Service Plazas. The company estimates FPL EVolution could increase the availability of charging stations, which is a key factor in the efficient growth of EVs, by more than 50% alone.

RAIL DEVELOPMENT

The Port of Palm Beach plans to expand its rail infrastructure if awarded a $1.2m Consolidated Rail Infrastructure and Safety Improvements grant by the US Department of Transportation. This will allow the port to more than double its intermodal rail capacity annually, the port believes. "We believe expanding our rail infrastructure will have positive effects on our economic growth. For one, we will see a significant boost in our cargo movement and increase operational efficiencies. The project will also create at least 105 direct jobs and will take 29,000 truck trips per year off [motorway] I-95," comments port director Manuel Almira.

LNG DRIVE

A report released earlier this year by the Florida Ports Council shows Florida's seaports and industry partners are investing in efficiency measures including the introduction of domestically-produced liquefied natural gas (LNG) as an alternative fuel.

"With more than $1bn dollars in LNG investments in Jacksonville alone, there is no doubt that Florida is the state for LNG, as both a fuel and a cargo type," says Jaxport chief executive Eric Green. "The opportunity is just beginning and it's an exciting time for our industry and our community."

As more stringent air quality regulations for port operations and maritime vessels are required by the International Maritime Organization and implemented across the world, there is increased demand for alternative fuels in the national and global transportation industry, according to the Alternative Fuels Study.

In shipping and rail industries, LNG has proved to be the most cost effective and beneficial alternative fuel source.

Jaxport claims to have the largest LNG bunkering operation at a US port, which includes JAX LNG and Eagle LNG facilities. Crowley Maritime brought its second LNG-powered ship online at Jaxport's Talleyrand Marine Terminal in 2019. Combined with the LNG-powered ships operated by Tote Maritime Puerto Rico, four LNG-powered ships are homeported at Jaxport.

"The rapid expansion of the natural gas industry and the alternative fuel market provides an exciting opportunity for Florida seaports to expand their use of natural gas, creating economic and environmental benefits for the state," says Doug Wheeler, Florida Ports Council president .

Northeast Florida is well positioned to take advantage of export opportunities as the use of LNG expands globally. Currently, three LNG facilities are operating in Northeast Florida and a fourth is planned, with construction set to begin later this year.

NAVIGATION INVESTMENT

Broward County's Port Everglades Navigation Improvements Project to deepen and widen the Port's navigational channels can now begin, with $29.1m in funding under the US Army Corps of Engineers 2020 Work Plan. The funding will be used to build a new facility for the US Coast Guard Station Fort Lauderdale so the Intracoastal Waterway can be widened by 250ft at a chokepoint where large neo-panamax cargo ships currently have operating restrictions that affect their ability to transit past docked cruise ships. The Coast Guard Station reconfiguration is the first phase of the larger dredging project.

The Port's Navigation Improvements Project is anticipated to create an estimated 2,200 construction jobs and nearly 1,500 additional permanent direct jobs locally resulting from additional cargo capacity.

The Coast Guard station reconfiguration is estimated to be completed by November 2023 at a total cost of approximately $39m, with $29.1m paid with federal funds and the balance paid through port revenue and state grant funds.

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TERMINAL TALES

SALUTING SEAFARERS

As more and more bad news comes in about the coronavirus outbreak, and pundits, governments and companies debate the likely outcome it is good to see that people are finally thinking more about the seafarers who are responsible for carrying goods round the globe.

Shipping has always been an invisible sector, despite many attempts to make people understand more about it. Now, perhaps, people will start to realise how important seafarers are to their daily life and we can only hope that port states facilitate the entry and exit of seafarers through ports as they try to get to and from their homes. These people are truly on the front line and need to remain in everyone's thoughts. They are not invisible any more, one hopes.

STELLA MARIS INTERVENTION

One of the main seafaring charities underlines the fact seafarers and those in the fishing industry will play a pivotal role in responding to, and eventually overcoming, the coronavirus pandemic. As such, Stella Maris is adapting its provision of welfare services during the pandemic so that seafarers and fishers continue to be supported during this critical time.

Whilst its chaplains and ship visitors have stopped ship visiting immediately until further notice, the global maritime charity remains active in providing care and assistance to the People of the Sea in the UK and overseas.

"Seafarers and fishers around the world are among the heroes of this pandemic. Our chaplains and ship visitors continue to make themselves available to support the People of the Sea via social media, email, mobile phone and WhatsApp," stressed Stella Maris CEO Martin Foley.

We hope everyone will try to make a tough job easier.

LIGHT AT THE END OF THE TUNNEL

A possible bit of good news comes to us via analysts MSI. As the rate of coronavirus infections in China comes down, that may be good news for the dry bulk market. MSI estimates that around 65% of the dry bulk orderbook due for delivery this year is being built in China. Its latest Dry Bulk Forecaster suggests that only one dry bulk vessel was delivered in China in February, out of a total of 24.

"MSI expects significant slippage in dry bulk deliveries this year but over and above technical factors, the current economic turmoil could offer the yards a chance to re-organise the delivery schedule to help address an arguably bigger problem," says MSI Dry Bulk Analyst Will Fray. "The orderbook in China is heavily front-loaded and dry bulk shipbuilding activity in the country will drop off a cliff in 2021 unless the schedule is effectively managed."

"In the capesize sector, the delivery schedule is hugely front-loaded, implying a large number of vessels are almost ready for delivery from China. The outbreak of covid-19 has so far been far less severe in Japan, and we expect to see less slippage in the sub-capesize segments," adds Fray. "What remains to be seen is whether shipyards can use the market downturn to manage the flow of tonnage in the face of a low orderbook and weak contracting activity."

So this is good news in tough times? We hope so.

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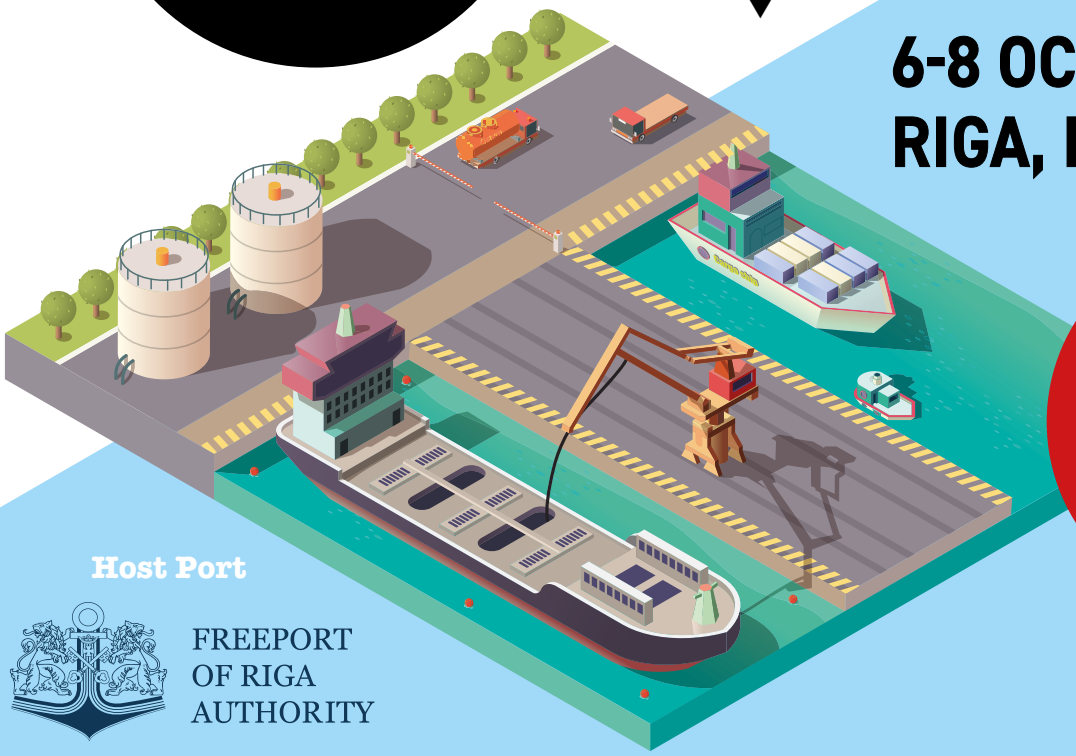

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